JOURNAL FOR DERADICALIZATION

Summer 2022
No. 31
ISSN: 2363-9849

Appendix A. Codes and outputs of data analyses

Tomislav Pavlović[a1], Dinka Čorkalo Biruški[b]

[a]Research assistant, Institute of Social Sciences Ivo Pilar; [b]Professor, Faculty of Social Sciences and Humanities, University of Zagreb

[1] Corresponding Author Contact: Tomislav Pavlović, Email: Tomislav.Pavlovic@pilar.hr; Marulićev trg 19, 10000 Zagreb, Croatia; ORCID: 0000-0002-4470-3715

JOURNAL FOR DERADICALIZATION

Summer 2022
No. 31
ISSN: 2363-9849

Table of Contents

Note: all the codes can be opened/closed using the small box in the top right corner of the screen.

Activating libraries

```
sapply(c("readxl", "xlsx", "pwr", "psych", "dplyr", "haven", "careless",
"lavaan", "semTools", "semPlot", "mice", "ggplot2", "cowplot"), library,
character.only = T)
```

Reading the data

```
baza <- read_excel("data_deprivations.xlsx")
```

Preparing data

Data cleaning

```
nrow(baza)

## [1] 1048

baza[baza == -3] <- NA # marking withdrawals as NA
baza <- baza[complete.cases(baza[, 1:30]), ] #excluding NAs
nrow(baza)

## [1] 922

baza$dob <- baza$dob + 17
baza <- subset(baza, dob < 36) # excluding participants older than 35
nrow(baza)

## [1] 899

baza <- baza[longstring(baza) < 10, ] # excluding participants with low
variability - repetitive responses
nrow(baza)

## [1] 887
```

```
baza <- baza[irv(baza) >= 1, ] # excluding participants with low
variability - systematic responses
nrow(baza)

## [1] 887

baza <- subset(baza, spol < 3)
nrow(baza)

## [1] 879

baza[baza == -2] <- NA
baza[baza == -1] <- NA
baza$erdb <- 7-baza$erdb
baza$erdd <- 7-baza$erdd
baza$edu <- baza$edu + 3
```

Imputations

As some participants did not respond only on one or two items, while they continued responding afterwards, missing values in their responses are not considered as withdrawals of their informed consent.

```
mobj <- mice(baza, m = 1, maxit = 50, method = "pmm", seed = 6987) #number
of covid-19 cases as seed
baza <- complete(mobj, 1)
write.xlsx(baza, "data_imp.xlsx")
```

Introducing subgroups

```
baza_s <- subset(baza, Q1 == 2)
baza_n <- subset(baza, Q1 == 1)

baza_sn <- bind_rows(baza_s, baza_n)
baza_sn$Q1 <- ifelse(baza_sn$Q1 == 1, "non-student", "student")
```

Power estimates

```
pwr.r.test(n = nrow(baza_s), power = .80, sig.level = .05)

##
##      approximate correlation power calculation (arctangh transformation)
##
##               n = 735
##               r = 0.1031458
##       sig.level = 0.05
##           power = 0.8
##     alternative = two.sided

pwr.r.test(n = nrow(baza_n), power = .80, sig.level = .05)
```

```
##
##      approximate correlation power calculation (arctangh transformation)
##
##               n = 144
##               r = 0.2309453
##       sig.level = 0.05
##           power = 0.8
##     alternative = two.sided
```

Psychometric properties and scale invariance

Egoistic relative deprivation

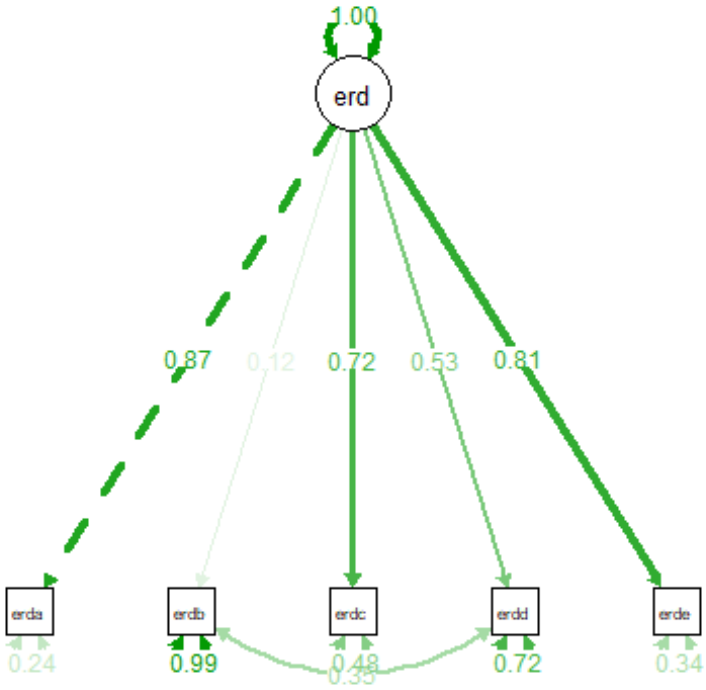
```
model <- 'erd =~ erda + erdb + erdc + erdd + erde'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.911        0.174        0.079
```

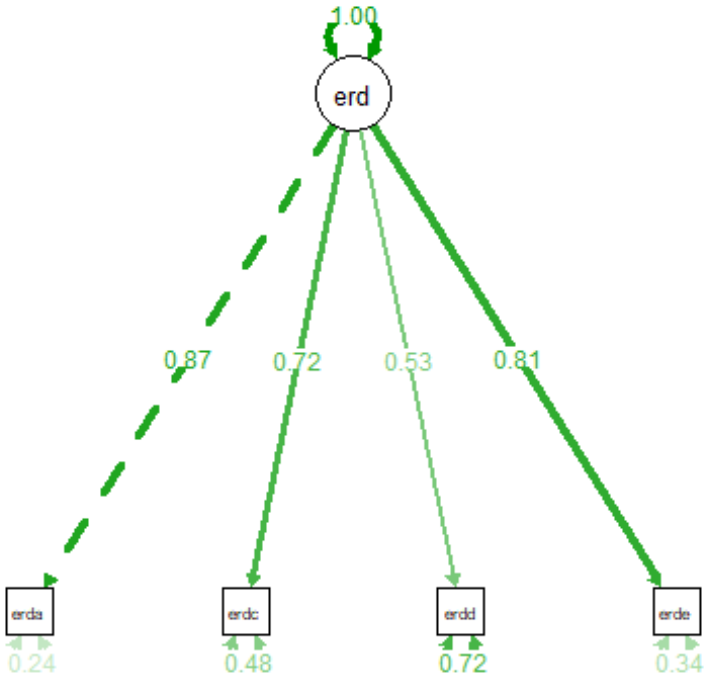
```
model <- 'erd =~ erda + erdb + erdc + erdd + erde
          erdb ~~ erdd'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.983        0.085        0.029
```

```
semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
reliability(modmod)

##              erd
## alpha  0.7432689
## omega  0.7252926
## omega2 0.7252926
## omega3 0.7294089
## avevar 0.4343020

model <- 'erd =~ erda + erdc + erdd + erde'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.983        0.116        0.028

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

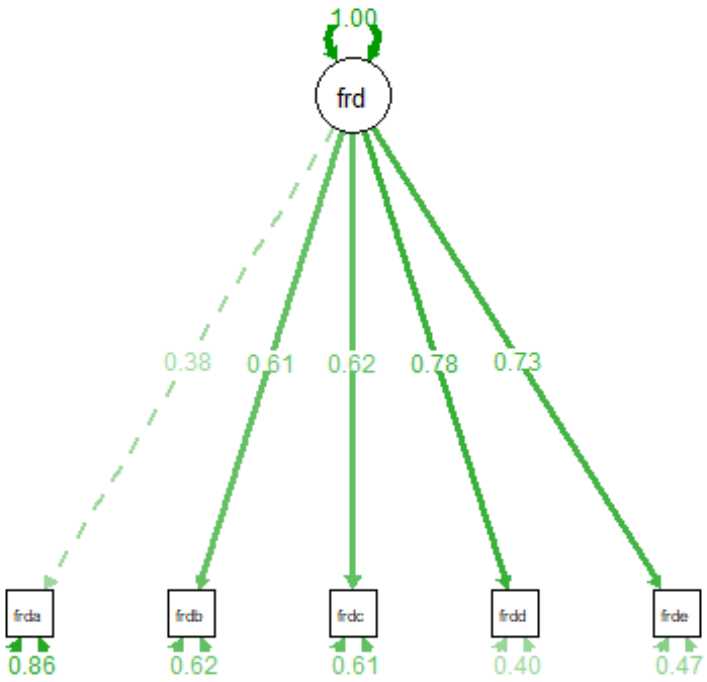



```
reliability(modmod)

##              erd
## alpha  0.8209943
## omega  0.8353662
## omega2 0.8353662
## omega3 0.8374611
## avevar 0.5704753

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
```

```
##         Df    AIC    BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc  4 9820.1 9934.8 32.249
## modmodw  7 9815.5 9915.9 33.666     1.1805       3     0.7577
## modmods 10 9811.3 9897.3 35.405     1.7434       3     0.6273
##
## ######################### Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc      34.651          4          .000        .127       .979
.937
## modmodw      32.181†         7          .000        .093       .981
.967
## modmods      34.320         10          .000        .076†      .982†
.978†
##          srmr       aic       bic
## modmodc .026† 9820.128  9934.819
## modmodw .029  9815.545  9915.899
## modmods .030  9811.284† 9897.302†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         3       -0.035      0.002      0.030 0.004 -
4.583
## modmods - modmodw         3       -0.017      0.001      0.011 0.001 -
4.261
##                        bic
## modmodw - modmodc -18.920
## modmods - modmodw -18.597

reliability(modmodc)

## $student
##              erd
## alpha  0.8164986
## omega  0.8308628
## omega2 0.8308628
## omega3 0.8331461
## avevar 0.5624600
##
## $`non-student`
##              erd
## alpha  0.8379438
## omega  0.8537563
## omega2 0.8537563
## omega3 0.8564363
## avevar 0.6051531
```

Fraternalistic relative deprivation

```
model <- 'frd =~ frda + frdb + frdc + frdd + frde'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.977        0.074        0.031

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
reliability(modmod)

##              frd
## alpha  0.7620680
## omega  0.7794752
## omega2 0.7794752
## omega3 0.7807865
## avevar 0.4341019

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
```

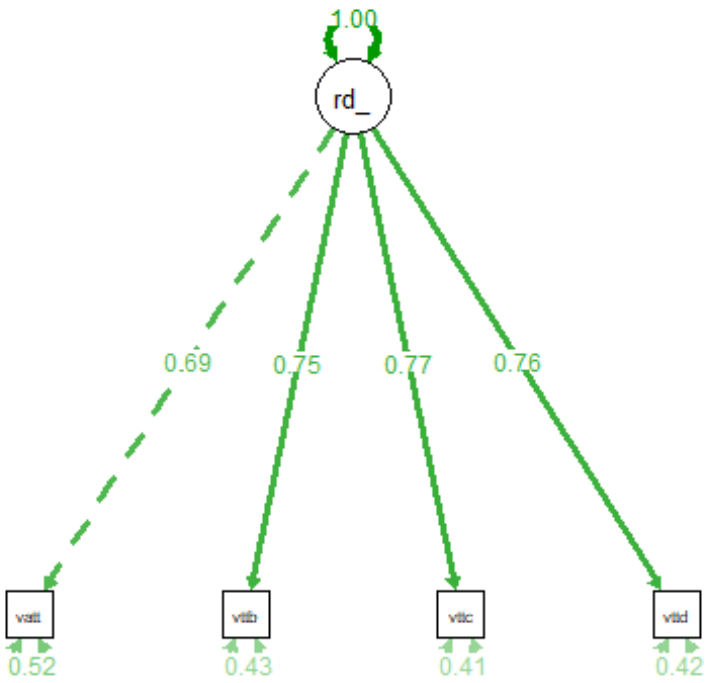
```
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##         Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 10 14408 14552 39.377
## modmodw 14 14408 14533 47.582     7.1700       4     0.1272
## modmods 18 14407 14512 54.480     7.3198       4     0.1199
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc      32.154†        10          .000        .079       .974†
.949
## modmodw      39.595         14          .000        .071       .971
.959
## modmods      47.619         18          .000        .065†      .968
.965†
##          srmr        aic        bic
## modmodc .031† 14408.295  14551.658
## modmodw .038  14408.500  14532.748
## modmods .040  14407.398† 14512.531†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         4       -0.008     -0.003      0.010 0.008
0.205
## modmods - modmodw         4       -0.005     -0.003      0.006 0.002 -
1.102
##                        bic
## modmodw - modmodc -18.910
## modmods - modmodw -20.217

reliability(modmodc)

## $student
##              frd
## alpha  0.7620474
## omega  0.7813305
```

```
## omega2 0.7813305
## omega3 0.7831678
## avevar 0.4385119
##
## $`non-student`
##              frd
## alpha  0.7642381
## omega  0.7781680
## omega2 0.7781680
## omega3 0.7762819
## avevar 0.4305483
```

Support for political violence

Single-factor

```
model <- 'rad_op =~ vatta + vattb + vattc + vattd'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.991        0.080        0.018

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

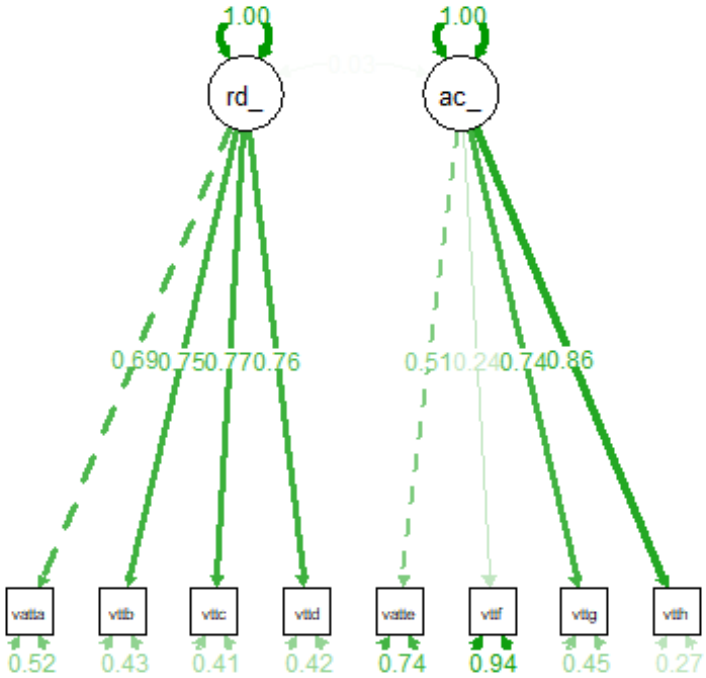


```
reliability(modmod)

##           rad_op
## alpha  0.8324489
## omega  0.8332531
## omega2 0.8332531
## omega3 0.8331168
## avevar 0.5561995

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##         Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc  4 11930 12045 13.775
## modmodw  7 11925 12025 14.906     1.4925       3     0.6840
## modmods 10 11923 12009 18.659     3.9168       3     0.2706
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc      12.155†         4          .016        .073       .993
.978
## modmodw      15.331          7          .032        .051       .994†
.989
## modmods      19.275         10          .037        .045†      .993
.992†
##          srmr        aic        bic
## modmodc .015† 11929.879  12044.570
## modmodw .019  11925.010  12025.364
## modmods .021  11922.762† 12008.780†
##
## ################## Differences in Fit Indices #######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         3       -0.021      0.001      0.011 0.004 -
```

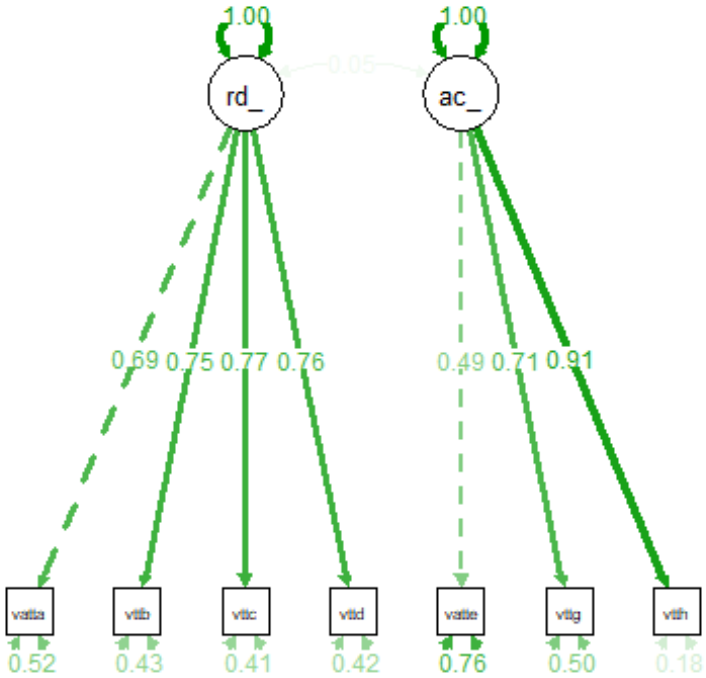
```
4.869
## modmods - modmodw         3       -0.006     -0.001      0.002 0.002 -
2.247
##                         bic
## modmodw - modmodc -19.205
## modmods - modmodw -16.584

reliability(modmodc)

## $student
##           rad_op
## alpha  0.8305141
## omega  0.8312025
## omega2 0.8312025
## omega3 0.8310756
## avevar 0.5524657
##
## $`non-student`
##           rad_op
## alpha  0.8426112
## omega  0.8446378
## omega2 0.8446378
## omega3 0.8444859
## avevar 0.5779438
```

Two factors

```
model <- 'rad_op =~ vatta + vattb + vattc + vattd
          act_op =~ vatte + vattf + vattg + vatth'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.950        0.079        0.076

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
reliability(modmod)

##           rad_op    act_op
## alpha  0.8324489 0.6563350
## omega  0.8332675 0.6648062
## omega2 0.8332675 0.6648062
## omega3 0.8331767 0.6466823
## avevar 0.5562132 0.3578405

model <- 'rad_op =~ vatta + vattb + vattc + vattd
          act_op =~ vatte + vattg + vatth'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.989        0.044        0.032

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



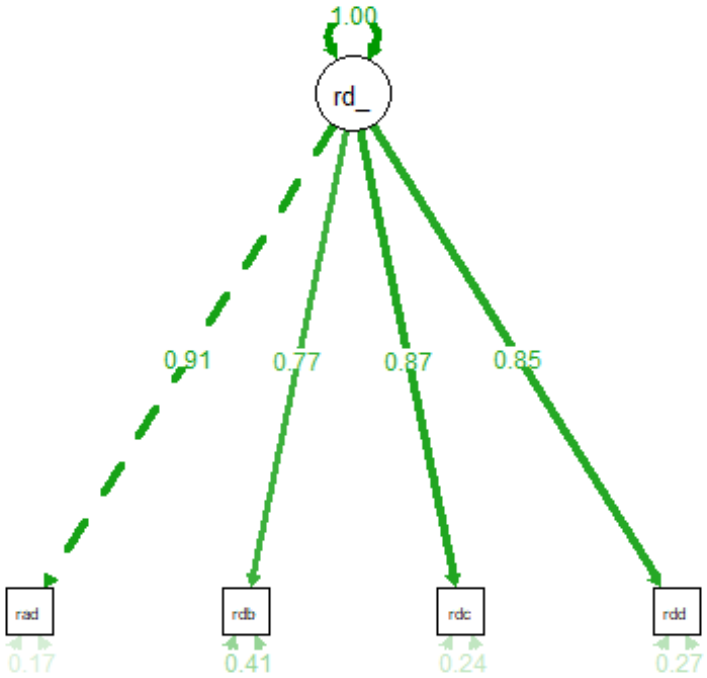

```
reliability(modmod)

##           rad_op    act_op
## alpha  0.8324489 0.7302668
## omega  0.8332829 0.7484178
## omega2 0.8332829 0.7484178
## omega3 0.8332423 0.7473328
## avevar 0.5562279 0.5104458

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
```

```
##         Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 26 19322 19532 59.526
## modmodw 31 19314 19500 61.369     1.7883       5     0.8776
## modmods 36 19308 19471 65.559     4.3552       5     0.4995
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc      56.761†        26          .000        .053       .984
.973
## modmodw      58.684         31          .002        .046       .985
.980
## modmods      63.395         36          .003        .042†      .986†
.983†
##          srmr        aic        bic
## modmodc .033† 19322.114  19532.381
## modmodw .034  19313.957  19500.330
## modmods .035  19308.148† 19470.626†
##
## ################### Differences in Fit Indices ########################
##                    df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         5       -0.007      0.002      0.007 0.001 -
8.157
## modmods - modmodw         5       -0.004      0.000      0.003 0.001 -
5.809
##                         bic
## modmodw - modmodc -32.051
## modmods - modmodw -29.703
```

Willingness to participate in activities of a violent organisation

Single-factor

```
model <- 'rad_in =~ rada + radb + radc + radd'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        1.000        0.000        0.003

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
reliability(modmod)

##           rad_in
## alpha  0.9126479
## omega  0.9142272
## omega2 0.9142272
## omega3 0.9140460
## avevar 0.7282028

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
```

```
##         Df    AIC    BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc  4 7582.4 7697.1  7.6115
## modmodw  7 7595.4 7695.8 26.6008     9.6319       3    0.02197 *
## modmods 10 7594.4 7680.4 31.5383     4.8083       3    0.18639
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc       2.235†         4          .693        .000†     1.000†
1.007†
## modmodw       9.531          7          .217        .048      0.997
0.995
## modmods      13.944         10          .176        .045      0.996
0.996
##          srmr       aic       bic
## modmodc .006† 7582.440† 7697.130
## modmodw .035  7595.429  7695.783
## modmods .036  7594.366  7680.384†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         3        0.048     -0.003     -0.012 0.028
12.989
## modmods - modmodw         3       -0.003     -0.001      0.001 0.001 -
1.063
##                        bic
## modmodw - modmodc  -1.347
## modmods - modmodw -15.399

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings", group.partial = "rad_in =~ radb")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = "rad_in =~
radb")
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
```

```
##         Df    AIC    BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc  4 7582.4 7697.1  7.6115
## modmodw  6 7582.6 7687.7 11.7286     2.2123       2     0.3308
## modmods  9 7581.2 7672.0 16.4123     4.5521       3     0.2077
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc       2.235†         4          .693        .000†     1.000†
1.007†
## modmodw       4.057          6          .669        .000†     1.000†
1.005
## modmods       7.229          9          .613        .000†     1.000†
1.002
##          srmr       aic       bic
## modmodc .006† 7582.440  7697.130
## modmodw .016  7582.557  7687.690
## modmods .017  7581.240† 7672.037†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         2            0          0     -0.003 0.009
0.117
## modmods - modmodw         3            0          0     -0.002 0.002 -
1.316
##                        bic
## modmodw - modmodc  -9.440
## modmods - modmodw -15.653

summary(modmods, standardized = T)

## lavaan 0.6-9 ended normally after 39 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of model parameters                        25
##   Number of equality constraints                     6
##
##   Number of observations per group:
##     student                                       735
##     non-student                                   144
##
## Model Test User Model:
##                                                Standard      Robust
##   Test Statistic                                 16.412       7.229
##   Degrees of freedom                                  9           9
```

```
##   P-value (Chi-square)                              0.059       0.613
##   Scaling correction factor                                     2.270
##        Yuan-Bentler correction (Mplus variant)
##   Test statistic for each group:
##     student                                         4.671       2.057
##     non-student                                    11.742       5.172
##
## Parameter Estimates:
##
##   Standard errors                             Sandwich
##   Information bread                           Observed
##   Observed information based on                Hessian
##
##
## Group 1 [student]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   rad_in =~
##     rada              1.000                               0.950    0.931
##     radb              0.765    0.056   13.649    0.000    0.728    0.738
##     radc    (.p3.)    0.914    0.041   22.310    0.000    0.868    0.865
##     radd    (.p4.)    0.926    0.039   23.685    0.000    0.880    0.862
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .rada    (.10.)    1.564    0.037   42.056    0.000    1.564    1.532
##    .radb    (.11.)    1.521    0.036   42.537    0.000    1.521    1.544
##    .radc    (.12.)    1.533    0.037   41.995    0.000    1.533    1.527
##    .radd    (.13.)    1.548    0.036   42.637    0.000    1.548    1.516
##     rad_in            0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .rada             0.140    0.033    4.194    0.000    0.140    0.134
##    .radb             0.441    0.059    7.533    0.000    0.441    0.455
##    .radc             0.254    0.043    5.925    0.000    0.254    0.252
##    .radd             0.267    0.044    6.022    0.000    0.267    0.256
##     rad_in            0.903    0.089   10.146    0.000    1.000    1.000
##
##
## Group 2 [non-student]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   rad_in =~
```

```
##     rada              1.000                                    0.916    0.850
##     radb              1.016    0.070   14.481    0.000    0.931    0.894
##     radc    (.p3.)    0.914    0.041   22.310    0.000    0.837    0.870
##     radd    (.p4.)    0.926    0.039   23.685    0.000    0.848    0.813
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .rada    (.10.)    1.564    0.037   42.056    0.000    1.564    1.451
##    .radb    (.11.)    1.521    0.036   42.537    0.000    1.521    1.461
##    .radc    (.12.)    1.533    0.037   41.995    0.000    1.533    1.593
##    .radd    (.13.)    1.548    0.036   42.637    0.000    1.548    1.482
##     rad_in           -0.035    0.087   -0.405    0.686   -0.039   -0.039
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .rada              0.323    0.106    3.042    0.002    0.323    0.278
##    .radb              0.217    0.058    3.748    0.000    0.217    0.201
##    .radc              0.225    0.097    2.319    0.020    0.225    0.243
##    .radd              0.370    0.196    1.884    0.060    0.370    0.340
##     rad_in            0.839    0.173    4.863    0.000    1.000    1.000
```

```
reliability(modmodc)
```

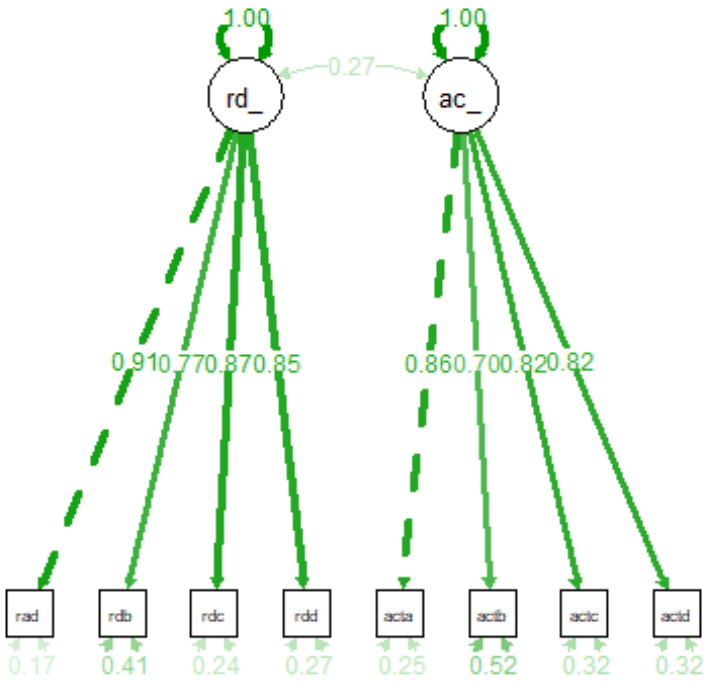
```
## $student
##           rad_in
## alpha  0.9116125
## omega  0.9141213
## omega2 0.9141213
## omega3 0.9135963
## avevar 0.7286378
##
## $`non-student`
##           rad_in
## alpha  0.9182895
## omega  0.9195491
## omega2 0.9195491
## omega3 0.9199533
## avevar 0.7414370
```

Two-factors

```
model <- 'rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.976        0.080        0.028
```

```
semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



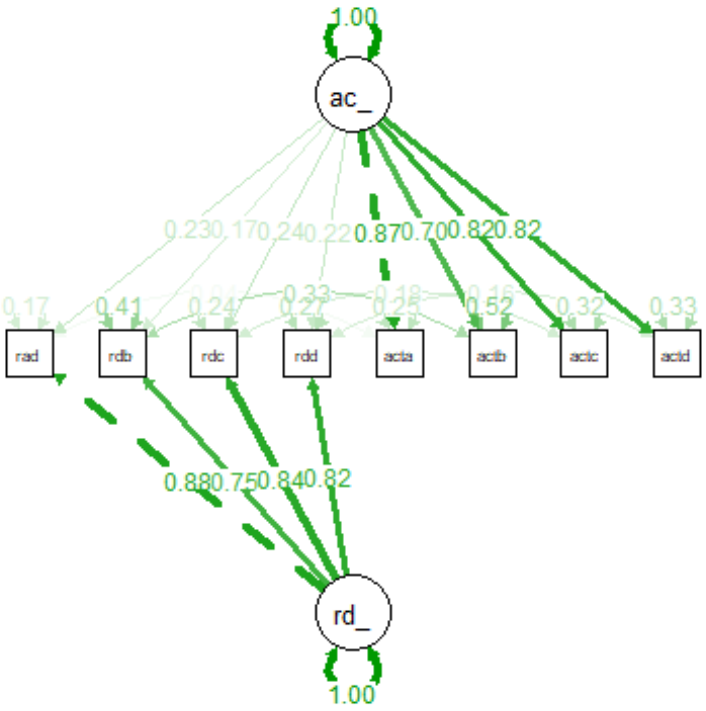

```
reliability(modmod)

##           rad_in    act_in
## alpha  0.9126479 0.8776770
## omega  0.9142471 0.8809896
## omega2 0.9142471 0.8809896
## omega3 0.9141358 0.8807142
## avevar 0.7282452 0.6518627

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
```

```
##     test is a function of two standard (not robust) statistics.
##
##         Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 38 18847 19086 169.64
## modmodw 44 18859 19069 193.54    16.7003       6    0.01045 *
## modmods 50 18855 19037 201.57     7.8088       6    0.25245
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     113.147†        38          .000        .082       .975†
.963
## modmodw     129.894         44          .000        .081       .971
.963
## modmods     140.502         50          .000        .077†      .971
.967†
##          srmr        aic        bic
## modmodc .029† 18847.112† 19086.051
## modmodw .037  18859.011  19069.278
## modmods .038  18855.048  19036.642†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         6       -0.001     -0.003      0.001 0.008
11.899
## modmods - modmodw         6       -0.004      0.000      0.004 0.001 -
3.963
##                        bic
## modmodw - modmodc -16.774
## modmods - modmodw -32.636
```

Bifactor - activism

```
model <- 'rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          rada ~~ acta
          radb ~~ actb
          radc ~~ actc
          radd ~~ actd'
modmod <- cfa(model, estimator = "MLR", data = baza_sn)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        1.000        0.000        0.016

semPaths(modmod, what = "std", edge.label.cex = 1.2, bifactor = "act_in",
layout = "tree2")
```




```
reliability(modmod)

##           rad_in    act_in
## alpha  0.9126479 0.8318193
## omega  0.9093378 0.8671065
## omega2 0.8570404 0.6780432
## omega3 0.8592116 0.6794067
## avevar        NA        NA

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings", group.partial = "rad_in =~ radb")
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = "rad_in =~
radb")
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##         Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 24 18743 19049 37.738
## modmodw 33 18741 19004 53.851    14.2201       9     0.1147
## modmods 39 18737 18971 61.523     7.3852       6     0.2867
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc      22.544†        24          .547        .000†     1.000†
1.001†
## modmodw      35.279         33          .361        .015      0.999
0.999
## modmods      42.388         39          .327        .017      0.999
0.998
##          srmr        aic        bic
## modmodc .017† 18743.214  19049.056
## modmodw .024  18741.327  19004.160
## modmods .025  18736.999† 18971.159†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         9        0.015     -0.001     -0.003 0.008 -
1.887
## modmods - modmodw         6        0.001      0.000      0.000 0.001 -
4.328
##                         bic
## modmodw - modmodc -44.896
## modmods - modmodw -33.001
```

Results

Descriptive data

```
describe(baza_s) #1 = men

##       vars   n  mean   sd median trimmed  mad min max range  skew
kurtosis   se
```

```
## erda     1 735  2.32 1.22      2    2.19 1.48   1   6     5  0.72    -
0.07 0.05
## erdb     2 735  3.75 1.34      4    3.74 1.48   1   6     5  0.09    -
0.71 0.05
## erdc     3 735  2.27 1.21      2    2.15 1.48   1   6     5  0.74    -
0.09 0.04
## erdd     4 735  2.62 1.07      3    2.56 1.48   1   6     5  0.59
0.77 0.04
## erde     5 735  2.18 1.18      2    2.03 1.48   1   6     5  0.86
0.24 0.04
## frda     6 735  5.24 1.03      6    5.40 0.00   1   6     5 -1.53
2.67 0.04
## frdb     7 735  2.83 1.51      3    2.72 1.48   1   6     5  0.37    -
0.88 0.06
## frdc     8 735  4.31 1.56      5    4.48 1.48   1   6     5 -0.65    -
0.59 0.06
## frdd     9 735  3.81 1.39      4    3.85 1.48   1   6     5 -0.18    -
0.64 0.05
## frde    10 735  4.25 1.54      4    4.42 1.48   1   6     5 -0.62    -
0.53 0.06
## odg     11 735  7.35 2.21      8    7.46 1.48   1  11    10 -0.50    -
0.05 0.08
## vatta   12 735  3.21 1.54      3    3.13 1.48   1   6     5  0.19    -
0.88 0.06
## vattb   13 735  2.64 1.61      2    2.44 1.48   1   6     5  0.70    -
0.61 0.06
## vattc   14 735  2.89 1.54      3    2.76 1.48   1   6     5  0.44    -
0.78 0.06
## vattd   15 735  3.05 1.60      3    2.94 1.48   1   6     5  0.30    -
0.96 0.06
## vatte   16 735  4.84 1.08      5    4.96 1.48   1   6     5 -0.80
0.47 0.04
## vattf   17 735  4.50 1.40      5    4.68 1.48   1   6     5 -0.76    -
0.14 0.05
## vattg   18 735  4.75 1.19      5    4.89 1.48   1   6     5 -0.80
0.31 0.04
## vatth   19 735  5.08 1.05      5    5.21 1.48   1   6     5 -1.04
0.84 0.04
## acta    20 735  2.90 1.58      3    2.78 1.48   1   6     5  0.37    -
0.95 0.06
## actb    21 735  2.60 1.45      2    2.45 1.48   1   6     5  0.57    -
0.61 0.05
## actc    22 735  2.82 1.59      3    2.68 1.48   1   6     5  0.48    -
0.91 0.06
## actd    23 735  2.88 1.58      3    2.75 1.48   1   6     5  0.45    -
0.85 0.06
```

```
## rada    24 735  1.56 1.02      1    1.32 0.00   1   6     5  2.04
3.75 0.04
## radb    25 735  1.52 0.99      1    1.29 0.00   1   6     5  2.09
4.07 0.04
## radc    26 735  1.54 1.01      1    1.30 0.00   1   6     5  2.07
3.91 0.04
## radd    27 735  1.54 1.01      1    1.31 0.00   1   6     5  2.10
4.16 0.04
## spol    28 735  1.53 0.50      2    1.54 0.00   1   2     1 -0.13    -
1.99 0.02
## dob     29 735 21.64 2.55     21   21.34 2.97  18  35    17  1.41
3.20 0.09
## edu     30 735 13.87 2.72     14   14.10 1.48   4  19    15 -1.59
4.33 0.10
## Q1      31 735  2.00 0.00      2    2.00 0.00   2   2     0   NaN
NaN 0.00

describe(baza_n)

##       vars   n  mean   sd median trimmed  mad min max range  skew
kurtosis   se
## erda     1 144  2.47 1.24      2    2.37 1.48   1   6     5  0.54    -
0.44 0.10
## erdb     2 144  3.65 1.36      4    3.63 1.48   1   6     5  0.09    -
0.65 0.11
## erdc     3 144  2.37 1.33      2    2.22 1.48   1   6     5  0.69    -
0.46 0.11
## erdd     4 144  2.77 1.10      3    2.72 1.48   1   6     5  0.64
0.74 0.09
## erde     5 144  2.39 1.27      2    2.27 1.48   1   6     5  0.66    -
0.19 0.11
## frda     6 144  5.19 1.08      6    5.37 0.00   1   6     5 -1.44
2.05 0.09
## frdb     7 144  3.04 1.50      3    2.96 1.48   1   6     5  0.19    -
0.81 0.13
## frdc     8 144  4.23 1.70      5    4.41 1.48   1   6     5 -0.57    -
0.99 0.14
## frdd     9 144  4.04 1.41      4    4.12 1.48   1   6     5 -0.31    -
0.60 0.12
## frde    10 144  4.34 1.53      4    4.48 1.48   1   6     5 -0.56    -
0.74 0.13
## odg     11 144  7.76 2.14      8    7.90 2.97   1  11    10 -0.73
0.57 0.18
## vatta   12 144  3.12 1.49      3    3.07 1.48   1   6     5  0.19    -
0.99 0.12
## vattb   13 144  2.46 1.58      2    2.22 1.48   1   6     5  0.93    -
0.17 0.13
```

```
## vattc   14 144  2.72 1.61      2    2.55 1.48   1   6     5  0.58    -
0.79 0.13
## vattd   15 144  3.10 1.66      3    3.01 1.48   1   6     5  0.37    -
0.97 0.14
## vatte   16 144  4.99 1.13      5    5.15 1.48   1   6     5 -1.25
1.73 0.09
## vattf   17 144  4.35 1.36      5    4.48 1.48   1   6     5 -0.57    -
0.47 0.11
## vattg   18 144  4.88 1.32      5    5.11 1.48   1   6     5 -1.38
1.49 0.11
## vatth   19 144  5.28 0.95      6    5.44 0.00   2   6     4 -1.40
1.68 0.08
## acta    20 144  3.41 1.61      3    3.39 1.48   1   6     5  0.04    -
1.07 0.13
## actb    21 144  2.97 1.55      3    2.88 1.48   1   6     5  0.25    -
0.96 0.13
## actc    22 144  3.18 1.61      3    3.10 1.48   1   6     5  0.24    -
1.00 0.13
## actd    23 144  3.22 1.67      3    3.16 1.48   1   6     5  0.20    -
1.15 0.14
## rada    24 144  1.59 1.06      1    1.35 0.00   1   6     5  1.74
2.23 0.09
## radb    25 144  1.48 1.04      1    1.21 0.00   1   6     5  2.25
4.31 0.09
## radc    26 144  1.44 0.94      1    1.22 0.00   1   5     4  2.16
3.92 0.08
## radd    27 144  1.54 1.11      1    1.27 0.00   1   6     5  2.31
5.03 0.09
## spol    28 144  1.68 0.47      2    1.72 0.00   1   2     1 -0.77    -
1.42 0.04
## dob     29 144 26.82 4.54     27   26.97 4.45  18  35    17 -0.24    -
0.96 0.38
## edu     30 144 14.34 4.29     17   15.07 2.22   4  19    15 -1.32
0.75 0.36
## Q1      31 144  1.00 0.00      1    1.00 0.00   1   1     0   NaN
NaN 0.00
```

Correlations

Student sample

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          rad_op =~ vatta + vattb + vattc + vattd
          rad_in =~ rada + radb + radc + radd'
```

```
modmod <- cfa(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.980        0.035        0.033

round(lavInspect(modmod, "cor.lv"), 2)

##        erd  frd  blame rad_op rad_in
## erd    1.00
## frd    0.35 1.00
## blame  0.19 0.61 1.00
## rad_op 0.30 0.40 0.32  1.00
## rad_in 0.10 0.19 0.16  0.59   1.00

forplots1 <-
as.data.frame(seminr::estimate_lavaan_ten_berge(modmod)$scores)

model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          rad_op =~ vatta + vattb + vattc + vattd
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in'
modmod <- cfa(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.970        0.040        0.037

round(lavInspect(modmod, "cor.lv"), 2)

##        erd  frd  blame rad_op rad_in act_in
## erd    1.00
## frd    0.35 1.00
## blame  0.19 0.61 1.00
## rad_op 0.30 0.40 0.32  1.00
## rad_in 0.07 0.15 0.11  0.62   1.00
## act_in 0.11 0.15 0.20  0.00   0.00   1.00

forplots2 <-
as.data.frame(seminr::estimate_lavaan_ten_berge(modmod)$scores)
```

Non-student sample

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          blame =~ odg
          odg ~~ 0*odg
          rad_op =~ vatta + vattb + vattc + vattd
          rad_in =~ rada + radb + radc + radd'
modmod <- cfa(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.961        0.051        0.069

round(lavInspect(modmod, "cor.lv"), 2)

##         erd  frd  blame rad_op rad_in
## erd    1.00
## frd    0.16 1.00
## blame  0.03 0.56 1.00
## rad_op 0.17 0.47 0.36  1.00
## rad_in 0.00 0.30 0.34  0.57   1.00

forplotn1 <-
as.data.frame(seminr::estimate_lavaan_ten_berge(modmod)$scores)

model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          rad_op =~ vatta + vattb + vattc + vattd
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in'
modmod <- cfa(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.936        0.061        0.068

round(lavInspect(modmod, "cor.lv"), 2)

##         erd   frd   blame rad_op rad_in act_in
## erd     1.00
## frd     0.16  1.00
## blame   0.03  0.56  1.00
## rad_op  0.17  0.47  0.36  1.00
## rad_in  0.00  0.29  0.31  0.55   1.00
## act_in -0.01  0.08  0.16  0.13   0.00   1.00

forplotn2 <-
as.data.frame(seminr::estimate_lavaan_ten_berge(modmod)$scores)
```

VIF

Student sample

ERD

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          erd ~ frd + blame'
modmod <- cfa(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.965        0.058        0.042

1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"erd") %>% select(est)) #VIF

##        est
## 1 1.144555
```

FRD

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          frd ~ erd + blame'
modmod <- cfa(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.965        0.058        0.042

1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"frd") %>% select(est)) #VIF

##        est
## 1 1.764334
```

Blame

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
```

```
          odg ~~ 0*odg
          blame ~ frd + erd'
modmod <- cfa(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.965        0.058        0.042

1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"blame") %>% select(est)) #VIF

##        est
## 1 1.600217
```

Non-student sample

ERD

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          erd ~ frd + blame'
modmod <- cfa(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.941        0.077        0.080

1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"erd") %>% select(est)) #VIF

##        est
## 1 1.031573
```

FRD

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          frd ~ erd + blame'
modmod <- cfa(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.941        0.077        0.080
```

```
1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"frd") %>% select(est)) #VIF

##        est
## 1 1.508156
```

Blame

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          blame =~ odg
          odg ~~ 0*odg
          blame ~ frd + erd'
modmod <- cfa(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.941        0.077        0.080

1/(1-parameterestimates(modmod, rsq = T) %>% filter(op == "r2", lhs ==
"blame") %>% select(est)) #VIF

##        est
## 1 1.470947
```

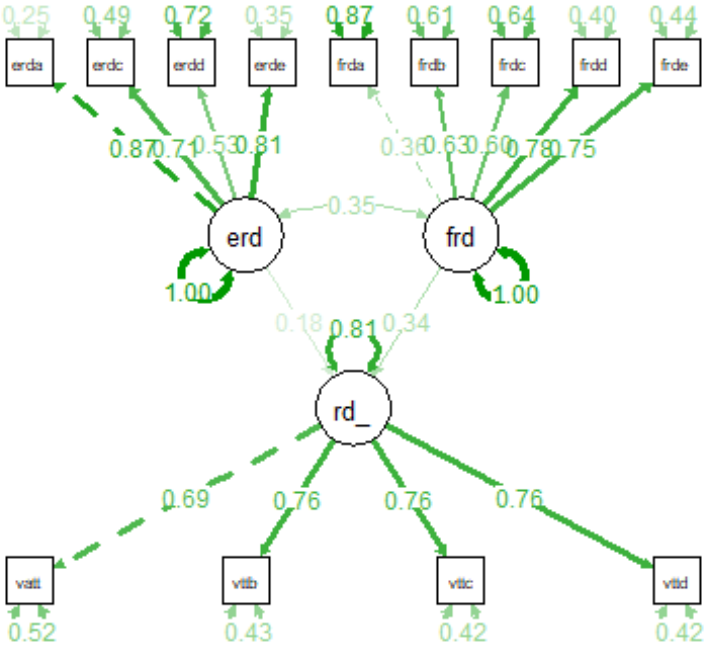
Regressions

Student sample

Attitudes

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          rad_op ~ erd + frd'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.967        0.049        0.038

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

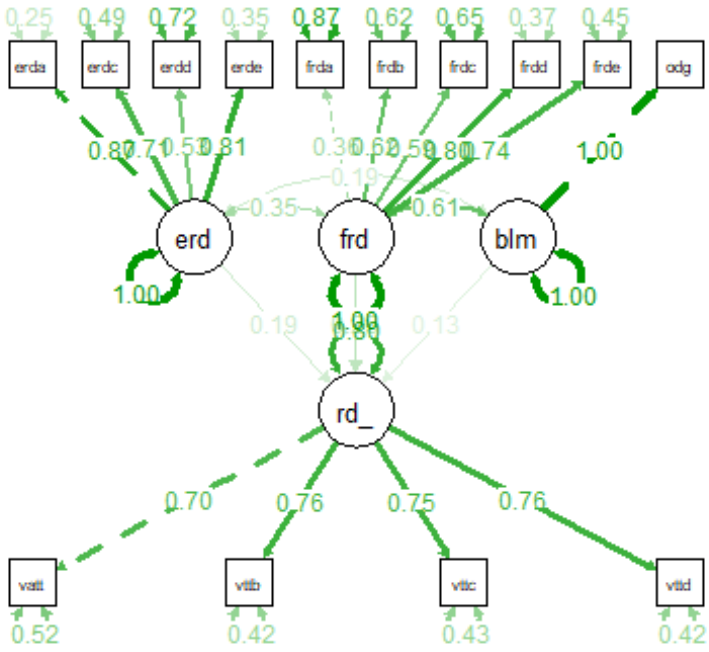



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_op  ~ erd   0.182  0.001
## 2 rad_op  ~ frd   0.335  0.000

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.188
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          rad_op ~ erd + frd + blame'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.965        0.049        0.037

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

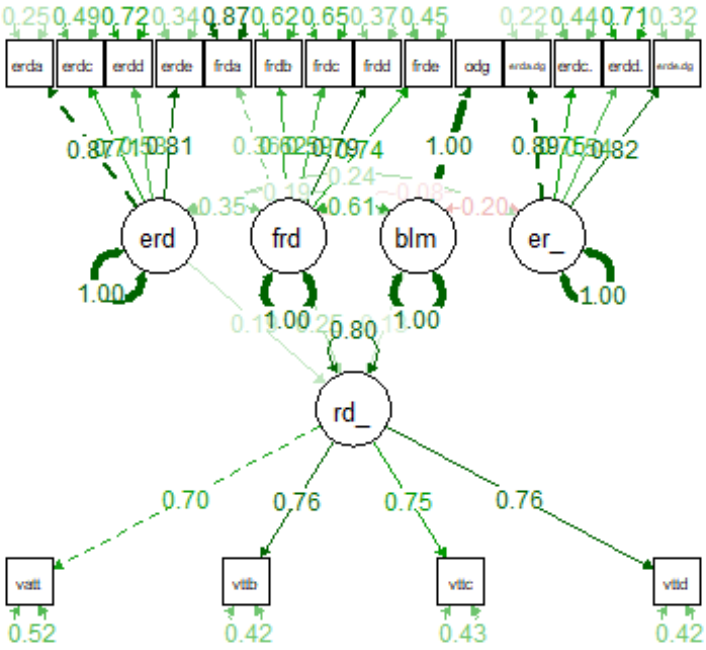



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_op  ~   erd   0.186  0.000
## 2 rad_op  ~   frd   0.253  0.000
## 3 rad_op  ~ blame   0.132  0.011

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs est
## 1 rad_op 0.2
```

Model 3 (ERD x blame)

```
baza_s_erd <- indProd(baza_s, c("erda", "erdc", "erdd", "erde"), c("odg"),
match = F, meanC = T, residualC = F, doubleMC = T)
baza_s_erd_frd <- indProd(baza_s_erd, c("frda", "frdb", "frdc", "frdd",
```

```
"frde"), c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)

model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_op ~ erd + frd + blame + erd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.963        0.044        0.038

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

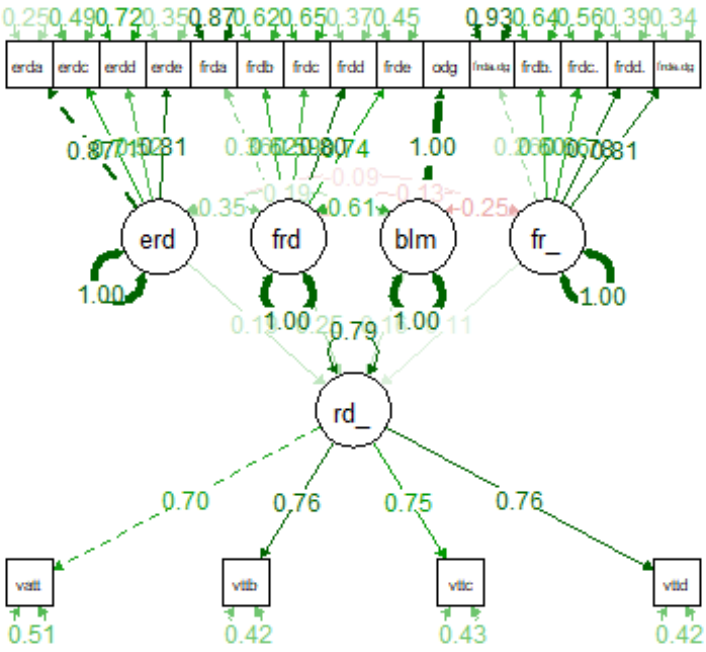



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.187  0.000
## 2 rad_op  ~     frd   0.253  0.000
```

```
## 3 rad_op  ~   blame   0.132  0.014
## 4 rad_op  ~ erd_blm  -0.001  0.987

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs est
## 1 rad_op 0.2
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_op ~ erd + frd + blame + frd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.938        0.053        0.050

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



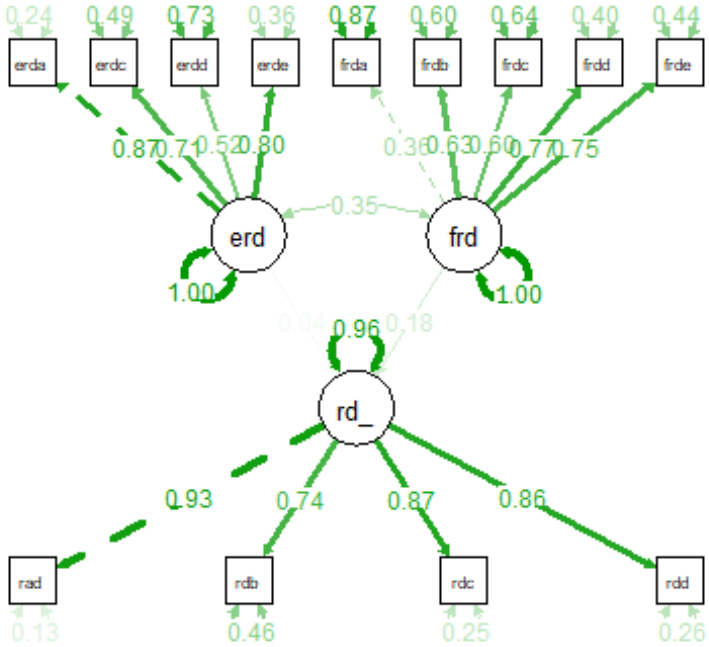

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.192  0.000
## 2 rad_op  ~     frd   0.248  0.000
## 3 rad_op  ~   blame   0.161  0.004
## 4 rad_op  ~ frd_blm   0.108  0.057

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.211
```

Intentions

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          rad_in ~ erd + frd'
```

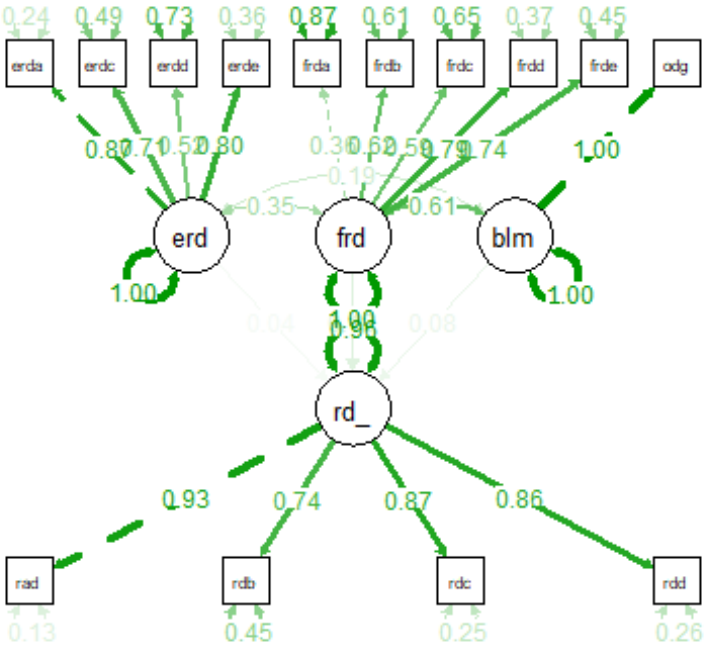
```
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.983        0.039        0.036

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_in  ~ erd   0.035  0.485
## 2 rad_in  ~ frd   0.176  0.002

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.037
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.982        0.039        0.034

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

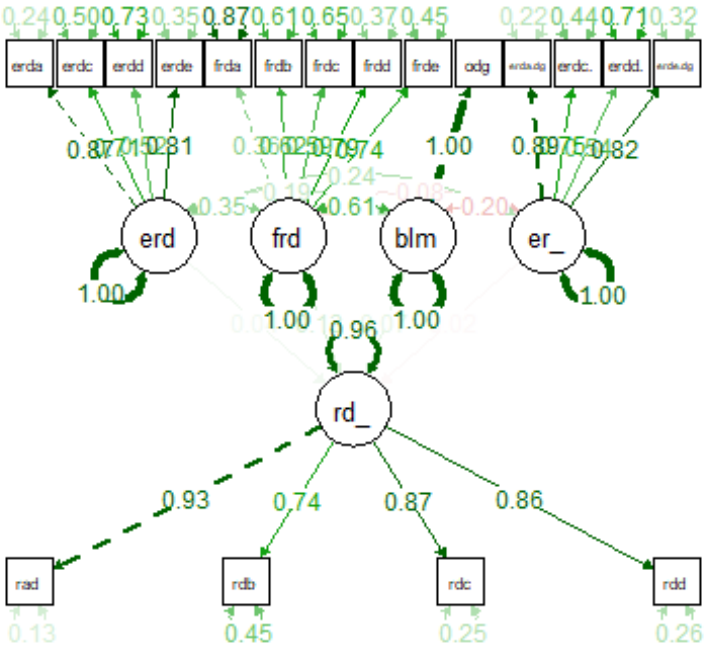



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd   0.038  0.443
## 2 rad_in  ~   frd   0.126  0.044
## 3 rad_in  ~ blame   0.078  0.116

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)
```

```
##      lhs  est
## 1 rad_in 0.04
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.976        0.039        0.034

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

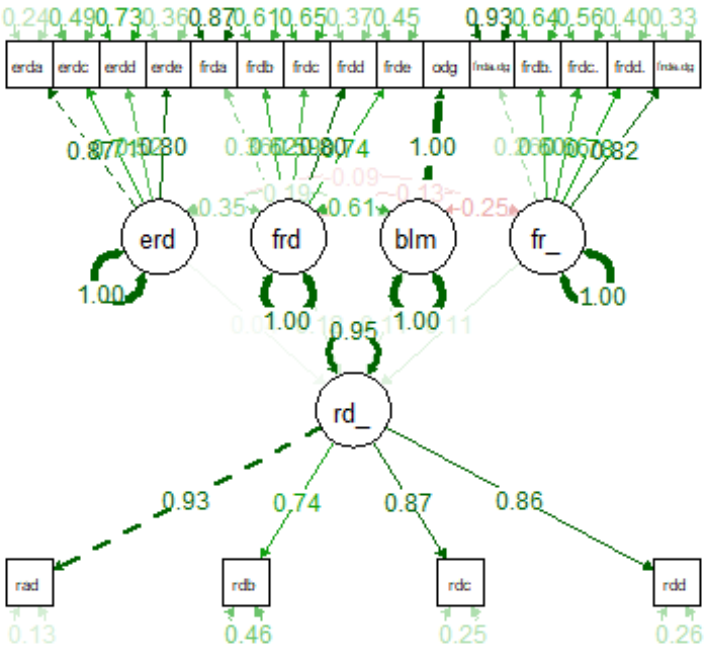



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)
```

```
##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.045  0.352
## 2 rad_in  ~     frd   0.125  0.045
## 3 rad_in  ~   blame   0.074  0.145
## 4 rad_in  ~ erd_blm  -0.019  0.661

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.041
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.955        0.049        0.048

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



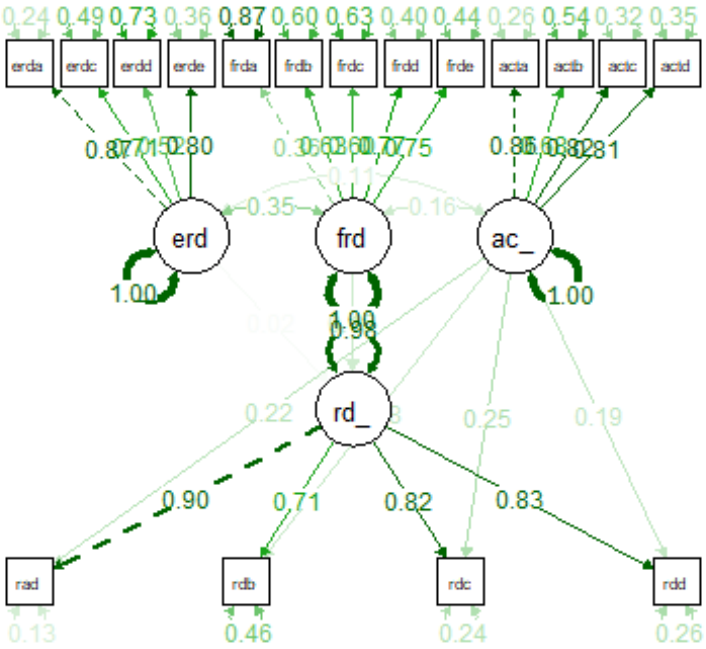

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.045  0.371
## 2 rad_in  ~     frd   0.120  0.052
## 3 rad_in  ~   blame   0.108  0.047
## 4 rad_in  ~ frd_blm   0.109  0.058

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.051
```

Intentions - (S-1) bifactor

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
```

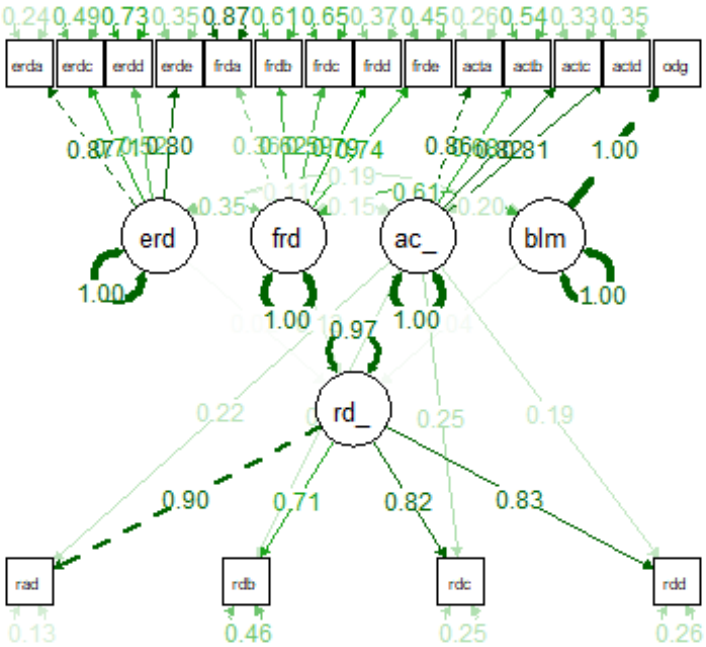
```
          rad_in ~~ 0*act_in
          rad_in ~ erd + frd
          erd ~~ act_in
          frd ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.968        0.048        0.040

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_in  ~ erd   0.021  0.680
## 2 rad_in  ~ frd   0.149  0.008

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.025
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.968        0.046        0.039

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

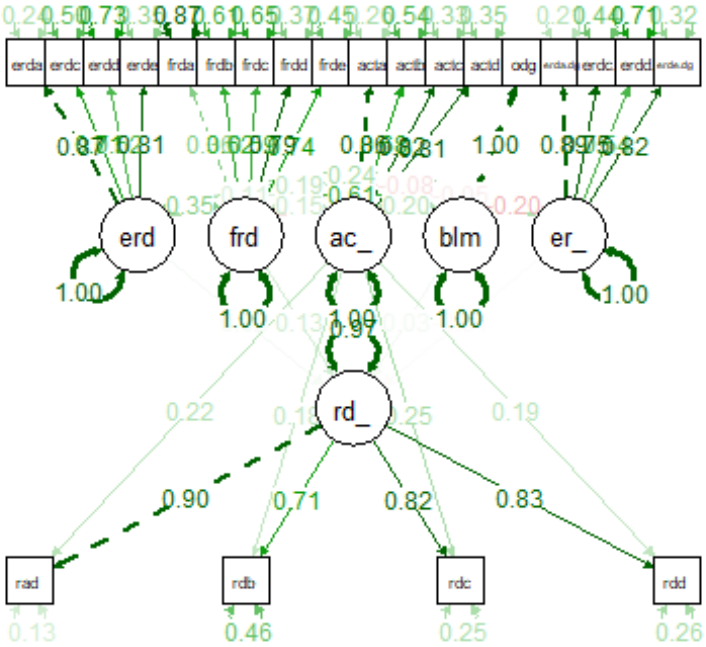



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)
```

```
##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd   0.023  0.653
## 2 rad_in  ~   frd   0.126  0.046
## 3 rad_in  ~ blame   0.036  0.487

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.026
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd_blm ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.966        0.042        0.037

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

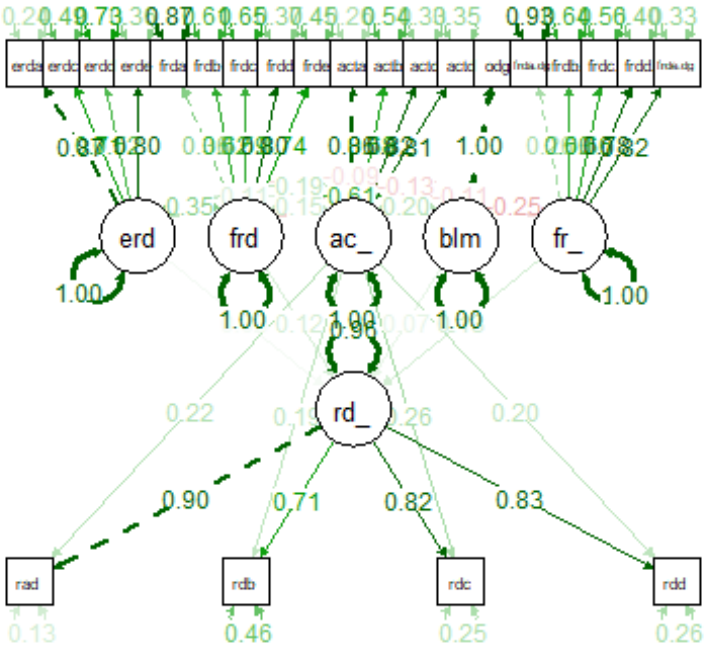



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.027  0.572
## 2 rad_in  ~     frd   0.125  0.047
## 3 rad_in  ~   blame   0.033  0.526
## 4 rad_in  ~ erd_blm  -0.013  0.774

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.026
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
```

```
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          frd_blm ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.950        0.048        0.046

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.029  0.557
## 2 rad_in  ~     frd   0.119  0.055
## 3 rad_in  ~   blame   0.070  0.213
## 4 rad_in  ~ frd_blm   0.129  0.036
```

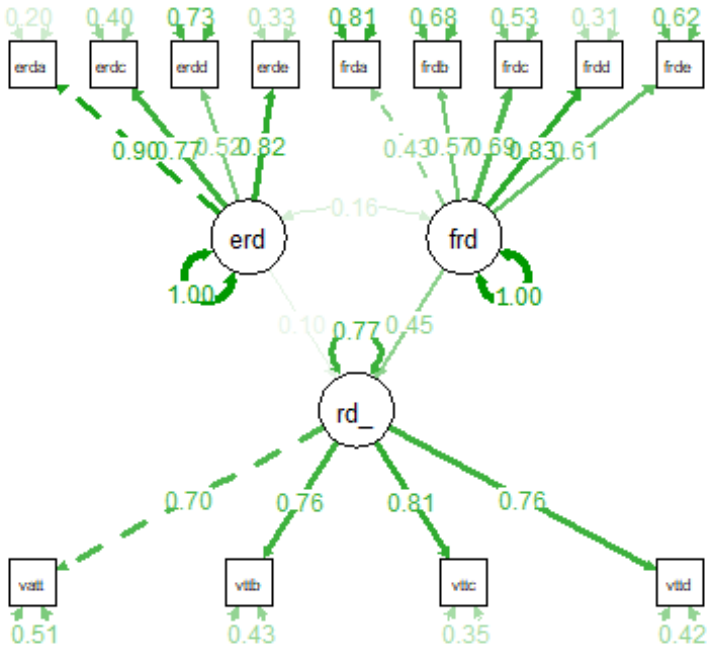
```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.041
```

Non-student sample

Attitudes

Model 1 (RD only)

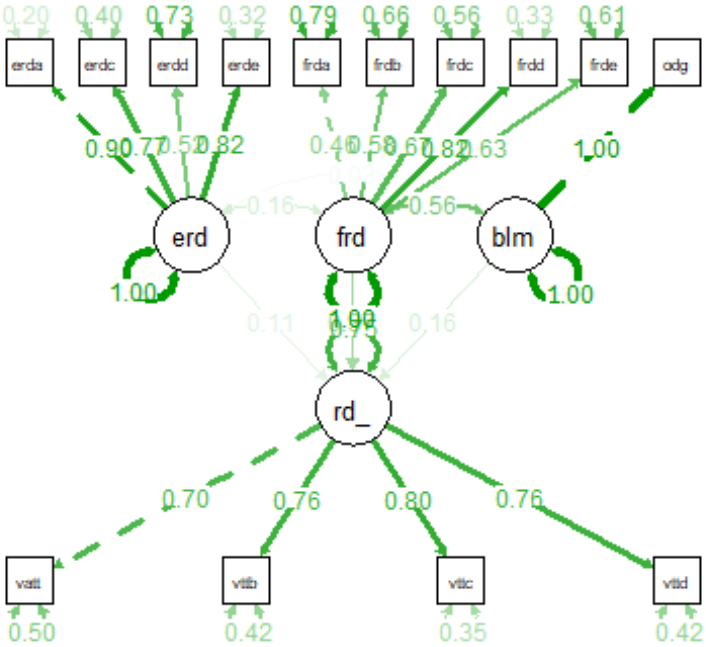
```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          rad_op ~ erd + frd'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.976        0.042        0.075

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_op  ~ erd   0.096  0.342
## 2 rad_op  ~ frd   0.453  0.001

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.229
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          rad_op ~ erd + frd + blame'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.964        0.050        0.072

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

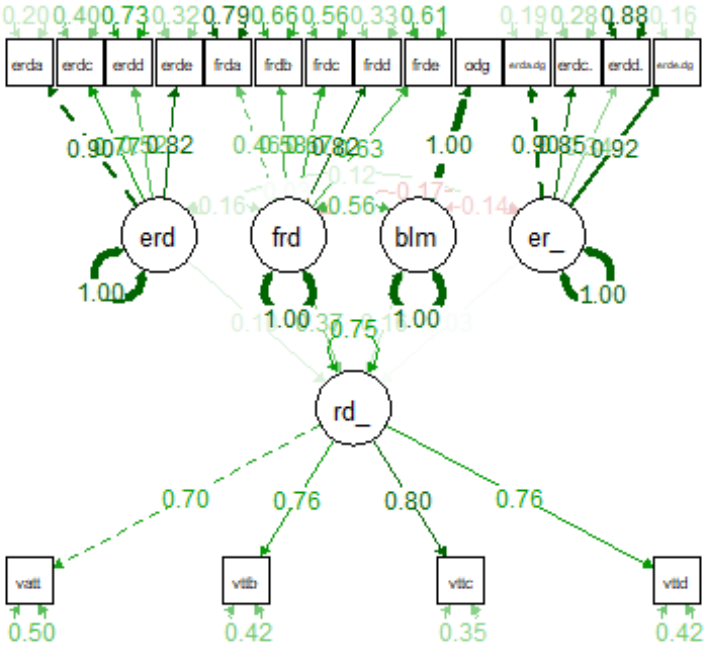



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_op  ~   erd   0.107  0.270
## 2 rad_op  ~   frd   0.366  0.011
## 3 rad_op  ~ blame   0.156  0.174

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.247
```

Model 3 (ERD x blame)

```
baza_n_erd <- indProd(baza_n, c("erda", "erdc", "erdd", "erde"), c("odg"),
match = F, meanC = T, residualC = F, doubleMC = T)
baza_n_erd_frd <- indProd(baza_n_erd, c("frda", "frdb", "frdc", "frdd",
"frde"), c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)

model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_op ~ erd + frd + blame + erd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.953        0.052        0.072

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

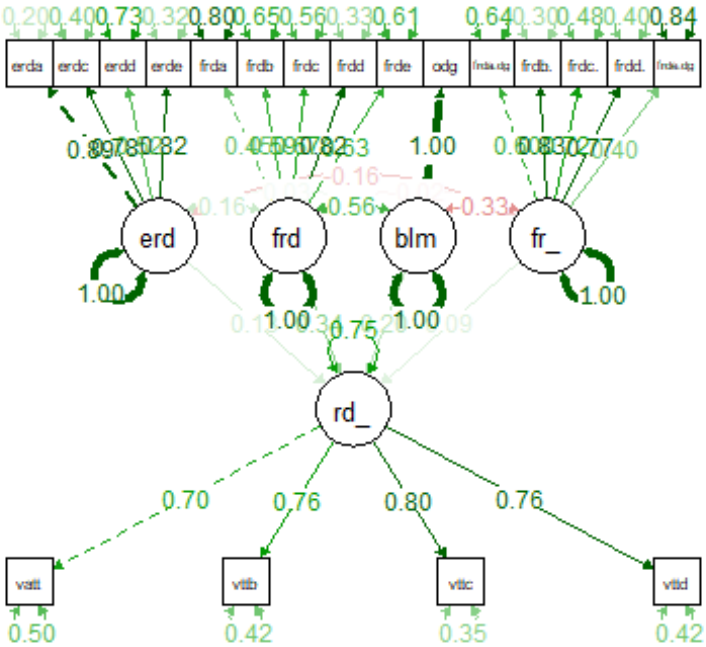



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.103  0.289
## 2 rad_op  ~     frd   0.371  0.013
## 3 rad_op  ~   blame   0.157  0.163
## 4 rad_op  ~ erd_blm   0.025  0.787

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)
```

```
##      lhs   est
## 1 rad_op 0.248
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_op ~ erd + frd + blame + frd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.897        0.072        0.079

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



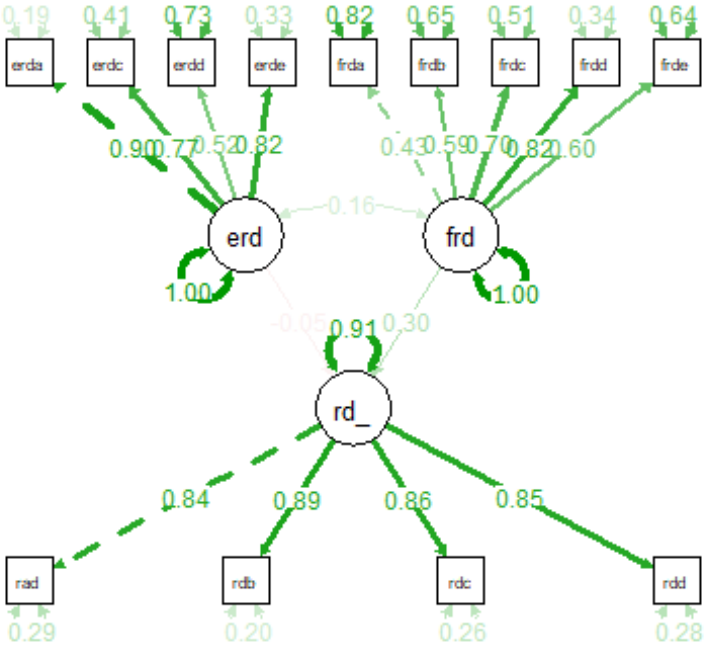

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)
```

```
##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.125  0.212
## 2 rad_op  ~     frd   0.339  0.015
## 3 rad_op  ~   blame   0.202  0.088
## 4 rad_op  ~ frd_blm   0.094  0.334

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.254
```

Intentions

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          rad_in ~ erd + frd'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.971        0.052        0.075

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

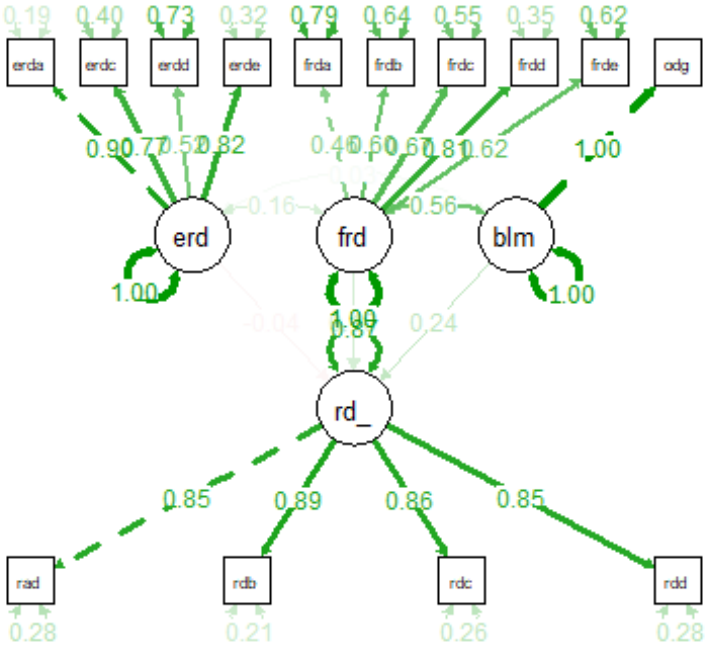



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_in  ~ erd  -0.052  0.524
## 2 rad_in  ~ frd   0.300  0.010

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.087
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.958        0.060        0.072

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

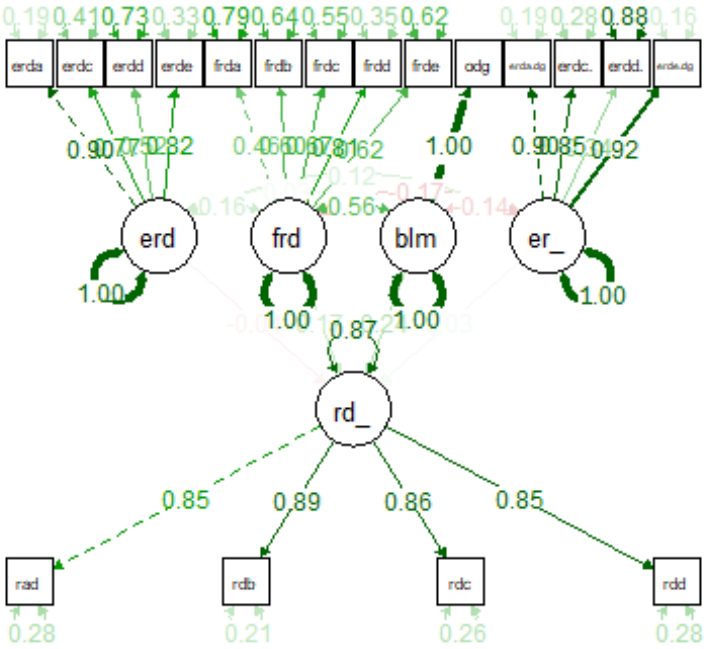



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd  -0.036  0.641
## 2 rad_in  ~   frd   0.164  0.198
## 3 rad_in  ~ blame   0.243  0.007

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs  est
## 1 rad_in 0.13
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
```

```
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.957        0.054        0.072

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

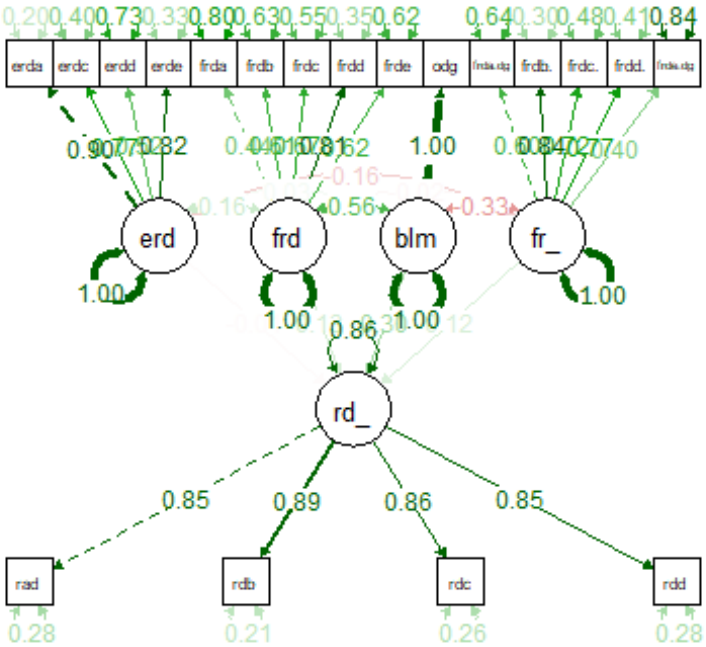



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.041  0.580
## 2 rad_in  ~     frd   0.169  0.192
## 3 rad_in  ~   blame   0.245  0.006
## 4 rad_in  ~ erd_blm   0.032  0.597

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)
```

```
##      lhs   est
## 1 rad_in 0.131
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.891        0.080        0.078

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)
```

```
##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.014  0.861
## 2 rad_in  ~     frd   0.132  0.268
## 3 rad_in  ~   blame   0.300  0.002
## 4 rad_in  ~ frd_blm   0.119  0.198
```

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)
```

```
##      lhs   est
## 1 rad_in 0.142
```

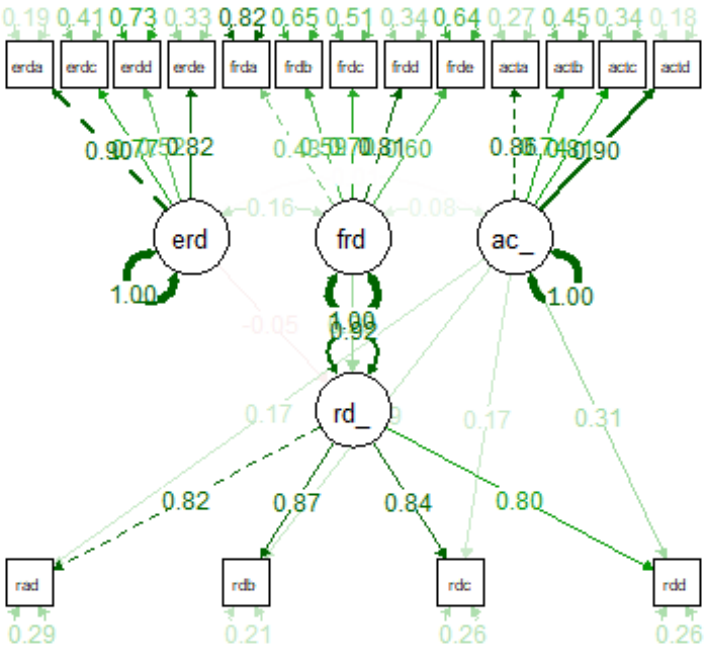
Intentions - (S-1) bifactor

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          rad_in ~ erd + frd
          erd ~~ act_in
          frd ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))
```

```
##   cfi.robust rmsea.robust         srmr
##        0.940        0.069        0.074
```

```
semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

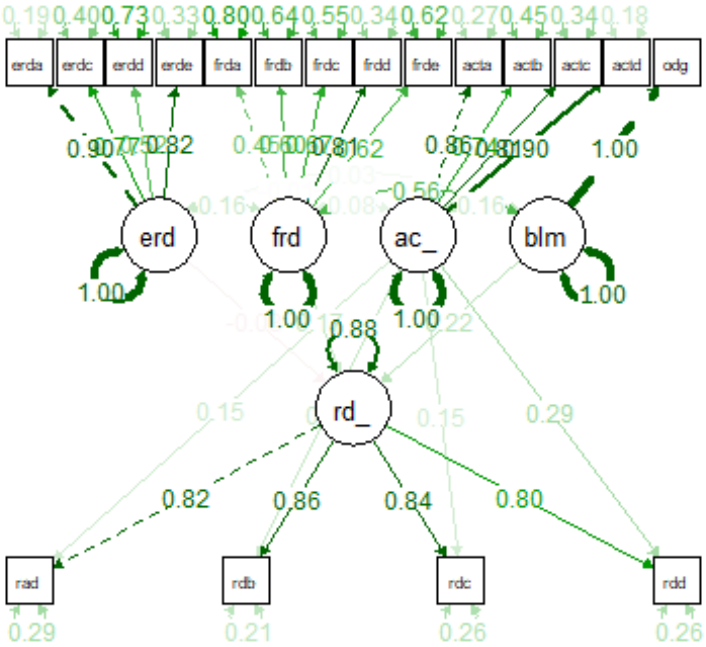



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op rhs std.all pvalue
## 1 rad_in  ~ erd  -0.048  0.555
## 2 rad_in  ~ frd   0.291  0.016

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.082
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame
```

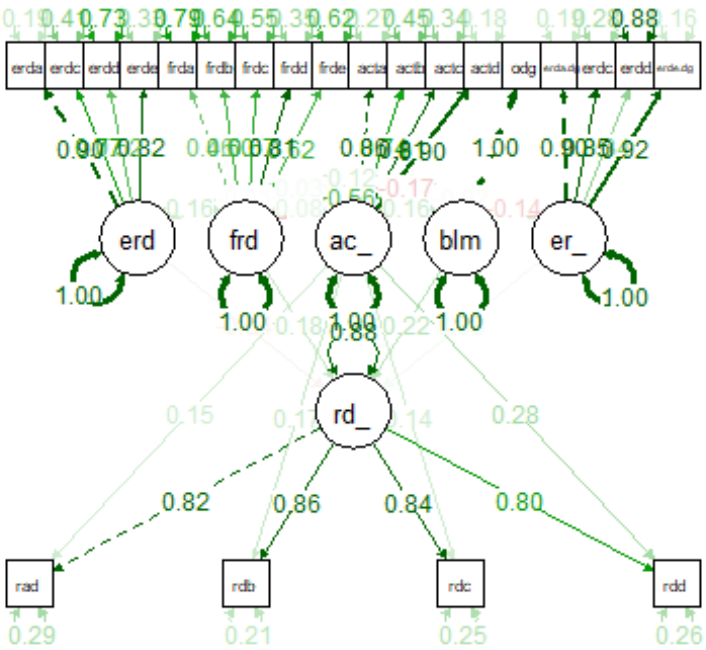
```
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.931        0.072        0.071

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd  -0.035  0.657
## 2 rad_in  ~   frd   0.172  0.181
## 3 rad_in  ~ blame   0.215  0.016

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.116
```

Model 3 (ERD x blame)

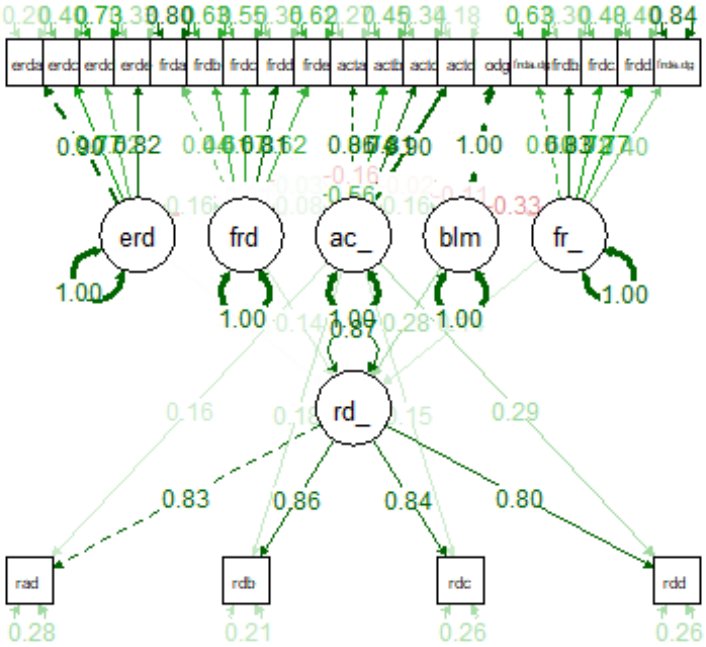
```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd_blm ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.935        0.062        0.070

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.039  0.601
## 2 rad_in  ~     frd   0.177  0.172
## 3 rad_in  ~   blame   0.217  0.014
## 4 rad_in  ~ erd_blm   0.031  0.635

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.117
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          frd_blm ~~ act_in'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.887        0.077        0.075

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.009  0.910
## 2 rad_in  ~     frd   0.135  0.256
## 3 rad_in  ~   blame   0.280  0.003
## 4 rad_in  ~ frd_blm   0.137  0.130

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.132
```

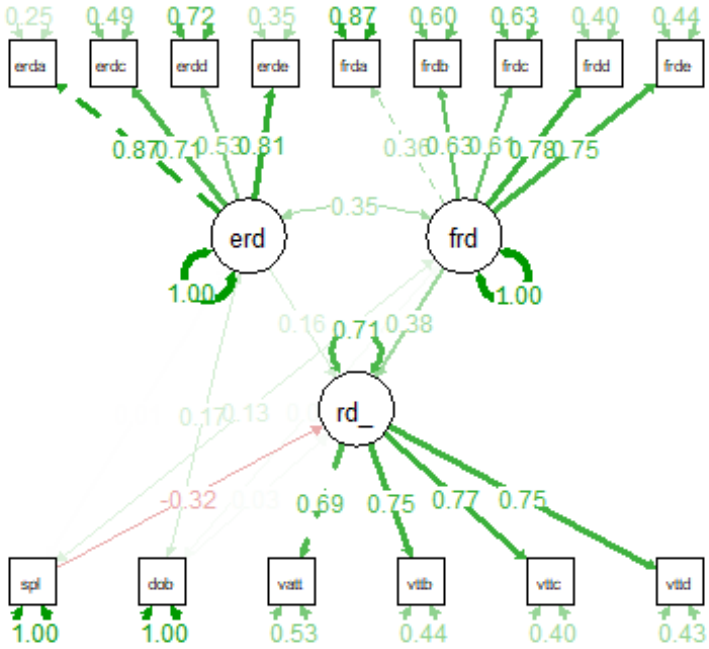
Robustness tests

Student sample

Attitudes

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          rad_op ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.958        0.048        0.038

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

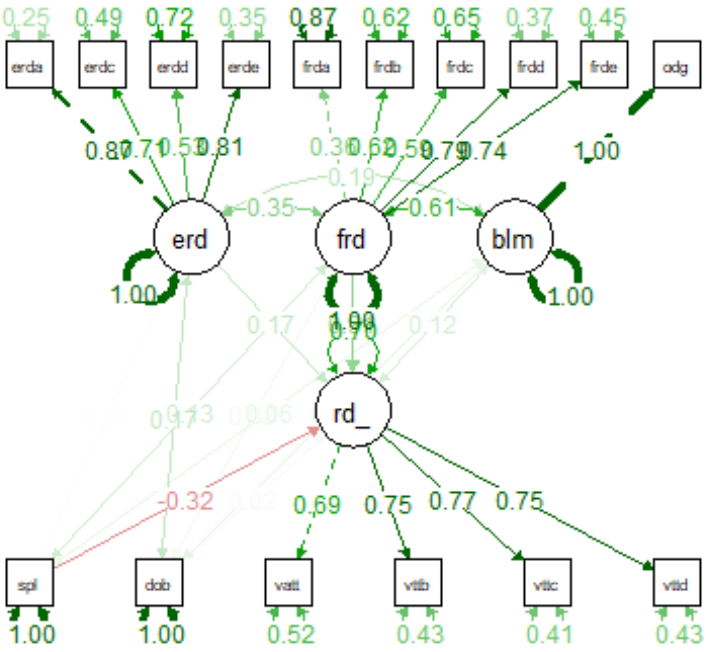



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_op  ~  erd   0.160  0.002
## 2 rad_op  ~  frd   0.383  0.000
## 3 rad_op  ~ spol  -0.324  0.000
## 4 rad_op  ~  dob   0.026  0.493
```

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs  est
## 1 rad_op 0.29
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          rad_op ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.958        0.048        0.037

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

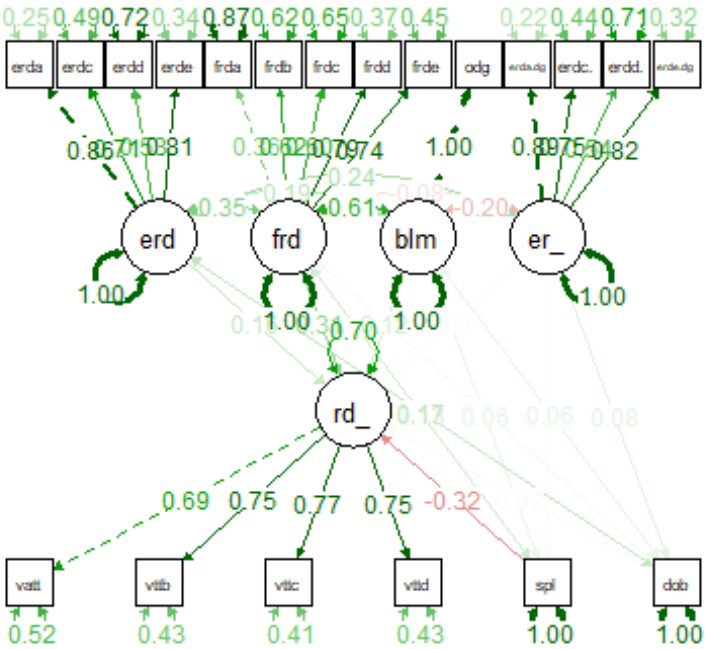



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_op  ~   erd   0.166  0.001
## 2 rad_op  ~   frd   0.310  0.000
## 3 rad_op  ~ blame   0.115  0.020
## 4 rad_op  ~  spol  -0.319  0.000
## 5 rad_op  ~   dob   0.021  0.581

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.298
```

Model 3 (ERD x blame)

```
baza_s_erd <- indProd(baza_s, c("erda", "erdc", "erdd", "erde"), c("odg"),
match = F, meanC = T, residualC = F, doubleMC = T)
baza_s_erd_frd <- indProd(baza_s_erd, c("frda", "frdb", "frdc", "frdd",
"frde"), c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)
```

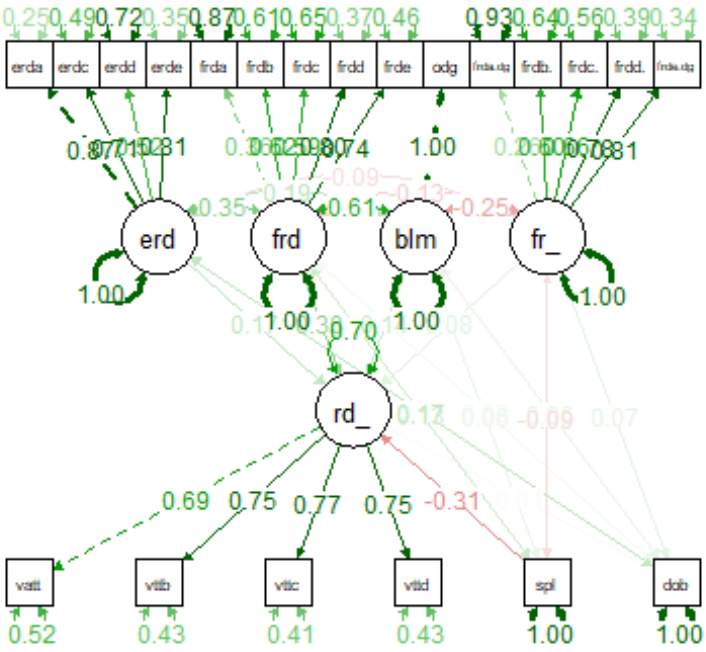
```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_op ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.958        0.044        0.037

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.163  0.001
## 2 rad_op  ~     frd   0.311  0.000
## 3 rad_op  ~   blame   0.118  0.021
## 4 rad_op  ~ erd_blm   0.010  0.851
## 5 rad_op  ~    spol  -0.320  0.000
## 6 rad_op  ~     dob   0.020  0.594

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.298
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_op ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.933        0.051        0.047

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



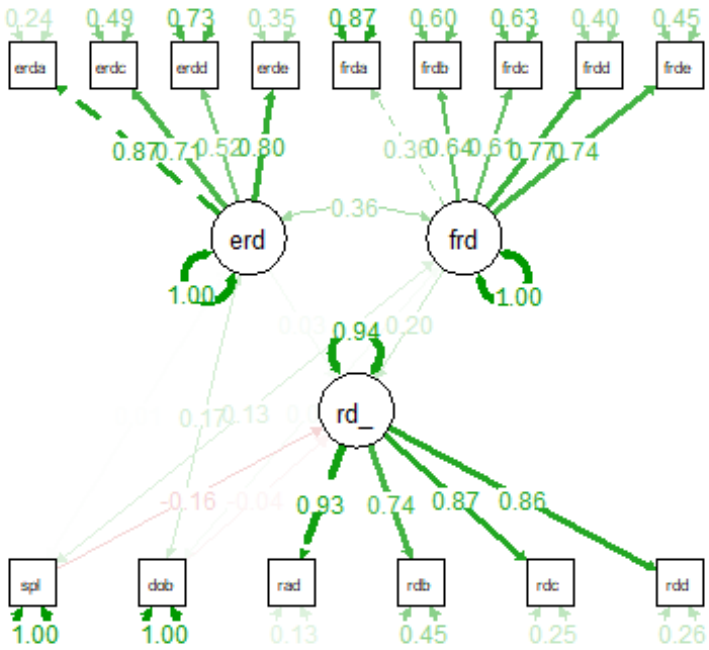

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.171  0.001
## 2 rad_op  ~     frd   0.304  0.000
## 3 rad_op  ~   blame   0.138  0.009
## 4 rad_op  ~ frd_blm   0.078  0.118
## 5 rad_op  ~    spol  -0.313  0.000
## 6 rad_op  ~     dob   0.013  0.727

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.304
```

Intentions

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          rad_in =~ rada + radb + radc + radd
          rad_in ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.976        0.041        0.035

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

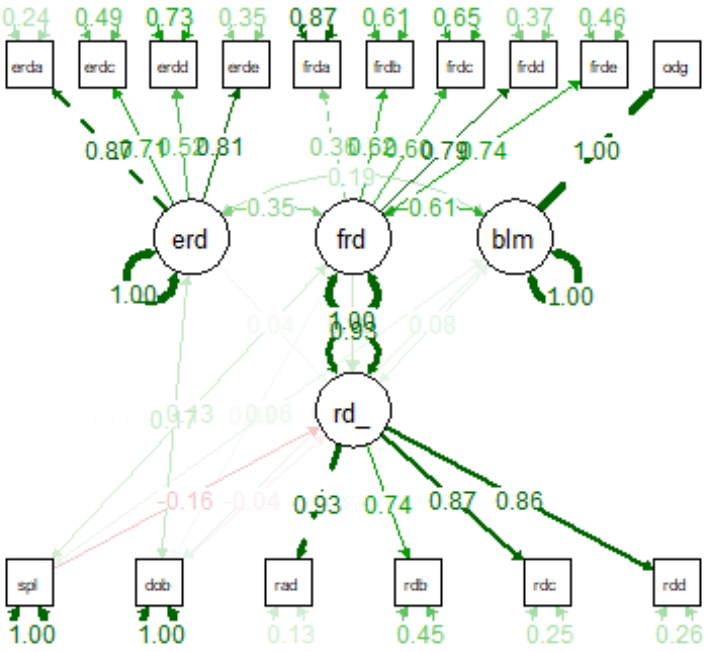



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_in  ~  erd   0.034  0.510
## 2 rad_in  ~  frd   0.198  0.001
## 3 rad_in  ~ spol  -0.160  0.000
## 4 rad_in  ~  dob  -0.037  0.421
```

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.063
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.975        0.041        0.034

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

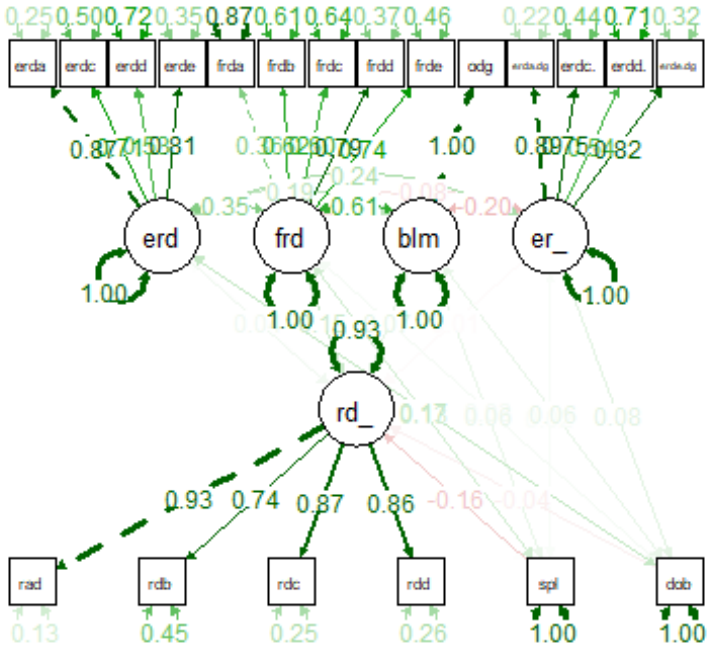



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd   0.038  0.459
## 2 rad_in  ~   frd   0.149  0.018
## 3 rad_in  ~ blame   0.076  0.121
## 4 rad_in  ~  spol  -0.157  0.000
## 5 rad_in  ~   dob  -0.041  0.379

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.066
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
```

```
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.972        0.039        0.033

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

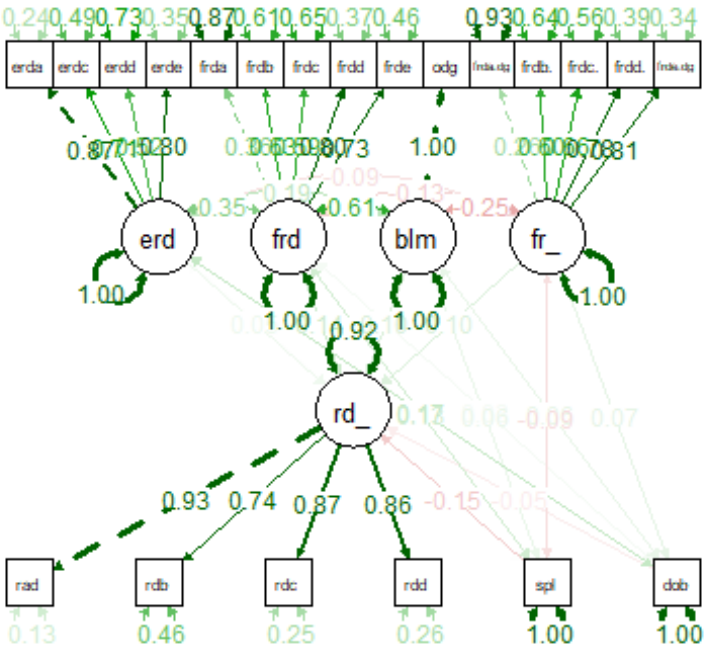



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.042  0.392
## 2 rad_in  ~     frd   0.148  0.018
```

```
## 3 rad_in  ~   blame   0.073  0.144
## 4 rad_in  ~ erd_blm  -0.011  0.799
## 5 rad_in  ~    spol  -0.157  0.000
## 6 rad_in  ~     dob  -0.041  0.385

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.066
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.949        0.048        0.046

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



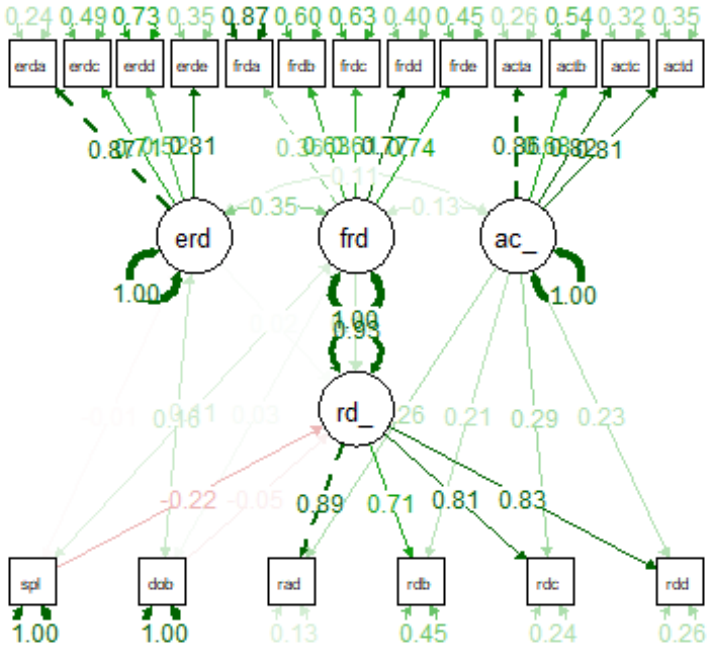

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.046  0.372
## 2 rad_in  ~     frd   0.141  0.024
## 3 rad_in  ~   blame   0.104  0.053
## 4 rad_in  ~ frd_blm   0.100  0.076
## 5 rad_in  ~    spol  -0.149  0.000
## 6 rad_in  ~     dob  -0.051  0.280

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.075
```

Intentions - (S-1) bifactor

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          rad_in ~ erd + frd + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.956        0.051        0.047

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

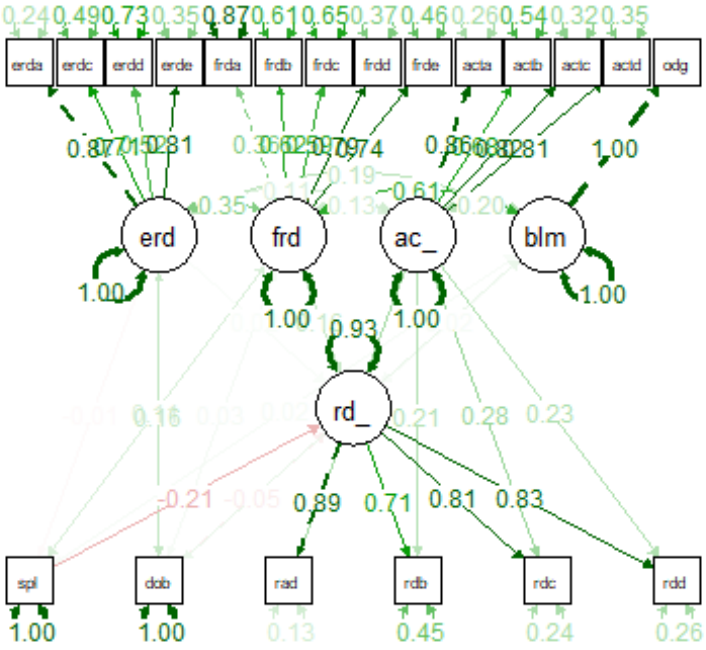



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_in  ~  erd   0.016  0.764
## 2 rad_in  ~  frd   0.174  0.002
```

```
## 3 rad_in  ~ spol  -0.217  0.000
## 4 rad_in  ~  dob  -0.046  0.320

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.073
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.957        0.049        0.046

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

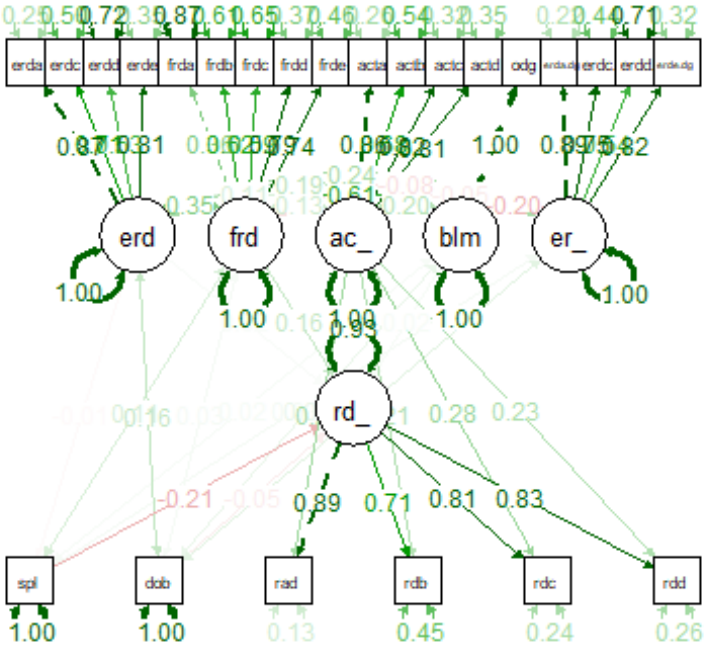



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd   0.017  0.739
## 2 rad_in  ~   frd   0.158  0.013
## 3 rad_in  ~ blame   0.024  0.638
## 4 rad_in  ~  spol  -0.215  0.000
## 5 rad_in  ~   dob  -0.047  0.314

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.073
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
```

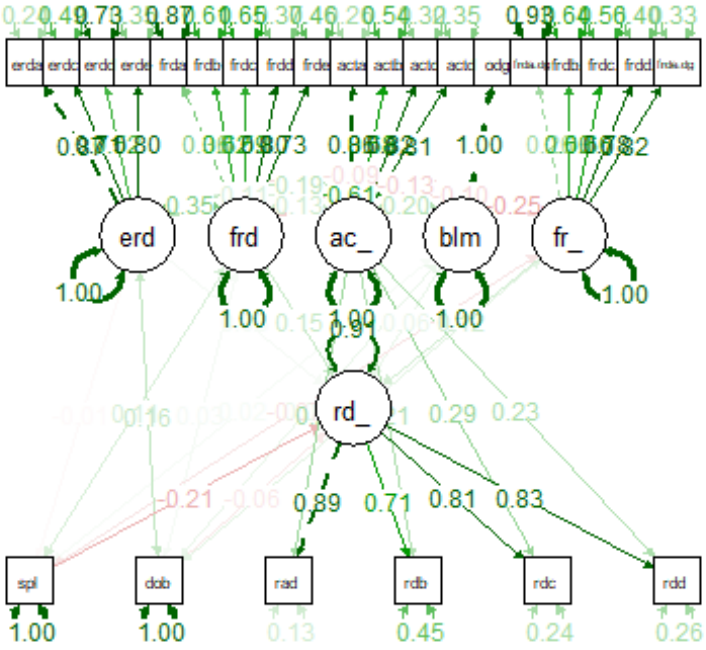
```
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust          srmr
##        0.957        0.044        0.042

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.018  0.713
## 2 rad_in  ~     frd   0.158  0.013
## 3 rad_in  ~   blame   0.024  0.645
## 4 rad_in  ~ erd_blm  -0.001  0.983
## 5 rad_in  ~    spol  -0.215  0.000
## 6 rad_in  ~     dob  -0.047  0.316

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.073
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          frd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_s_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.940        0.049        0.049

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



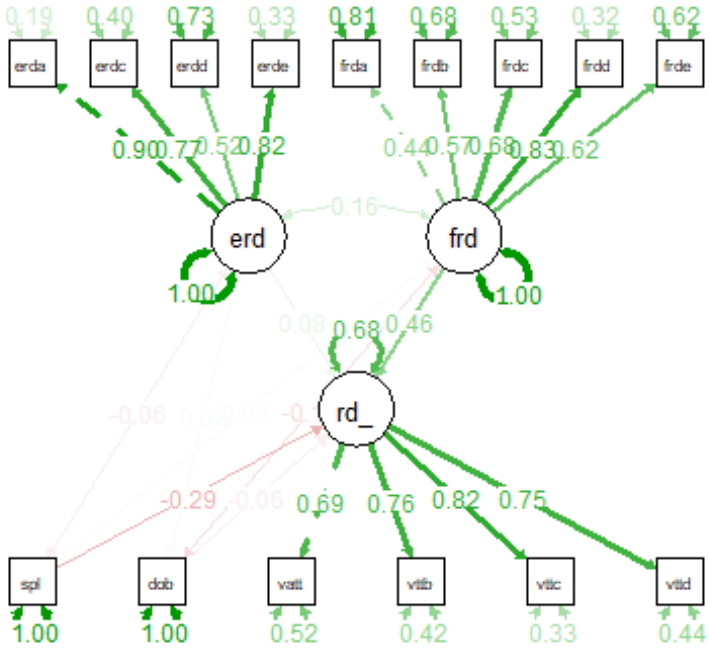

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd   0.026  0.614
## 2 rad_in  ~     frd   0.149  0.017
## 3 rad_in  ~   blame   0.056  0.308
## 4 rad_in  ~ frd_blm   0.118  0.046
## 5 rad_in  ~    spol  -0.206  0.000
## 6 rad_in  ~     dob  -0.058  0.212

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.085
```

Non-student sample

Attitudes

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          rad_op ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.962        0.047        0.072

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

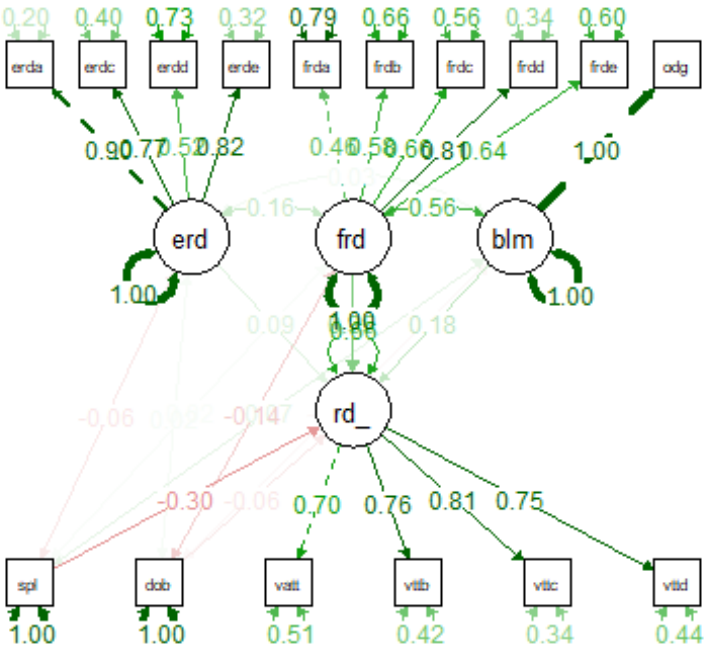



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_op  ~  erd   0.076  0.436
## 2 rad_op  ~  frd   0.456  0.001
## 3 rad_op  ~ spol  -0.290  0.001
## 4 rad_op  ~  dob  -0.057  0.478
```

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.317
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          rad_op ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.947        0.054        0.069

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

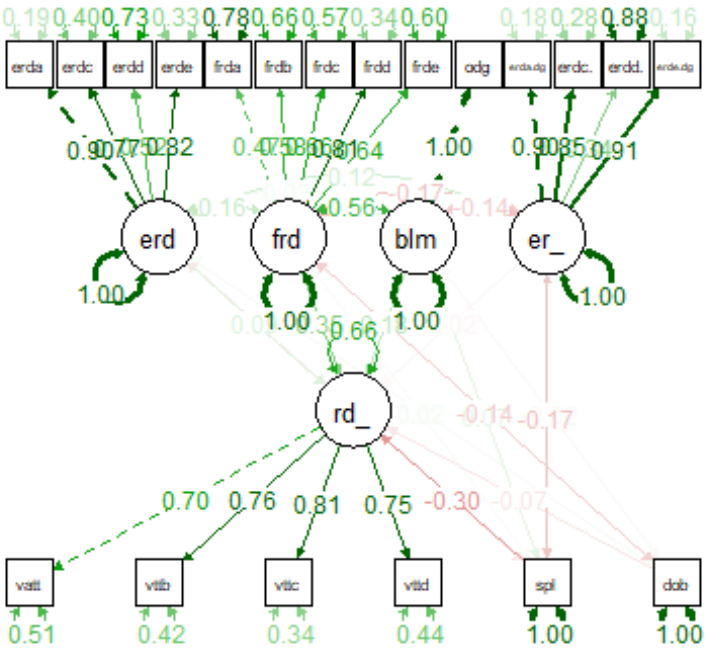



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_op  ~   erd   0.090  0.342
## 2 rad_op  ~   frd   0.354  0.006
## 3 rad_op  ~ blame   0.180  0.083
## 4 rad_op  ~  spol  -0.299  0.001
## 5 rad_op  ~   dob  -0.065  0.417

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.341
```

Model 3 (ERD x blame)

```
baza_n_erd <- indProd(baza_n, c("erda", "erdc", "erdd", "erde"), c("odg"),
match = F, meanC = T, residualC = F, doubleMC = T)
baza_n_erd_frd <- indProd(baza_n_erd, c("frda", "frdb", "frdc", "frdd",
"frde"), c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)
```

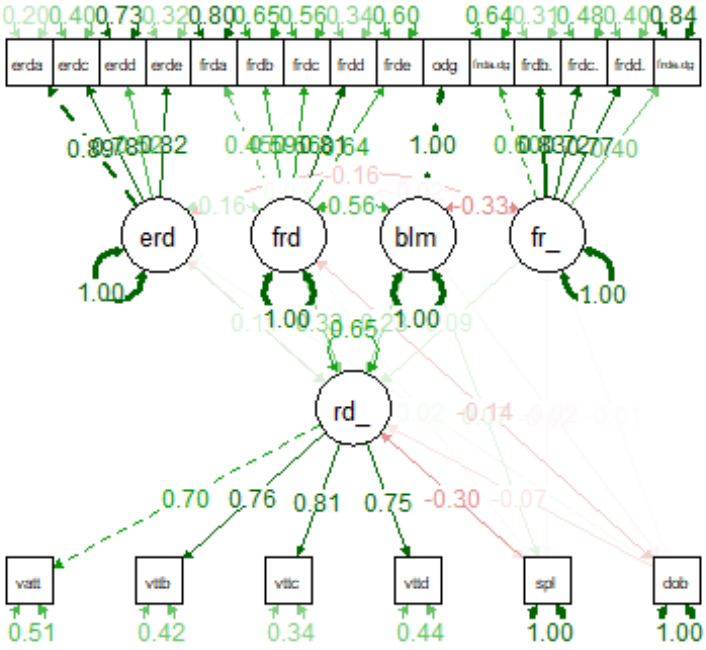
```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_op ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.944        0.052        0.068

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.093  0.331
## 2 rad_op  ~     frd   0.350  0.008
## 3 rad_op  ~   blame   0.179  0.081
## 4 rad_op  ~ erd_blm  -0.024  0.792
## 5 rad_op  ~    spol  -0.303  0.001
## 6 rad_op  ~     dob  -0.065  0.412

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.342
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_op ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.876        0.073        0.077

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



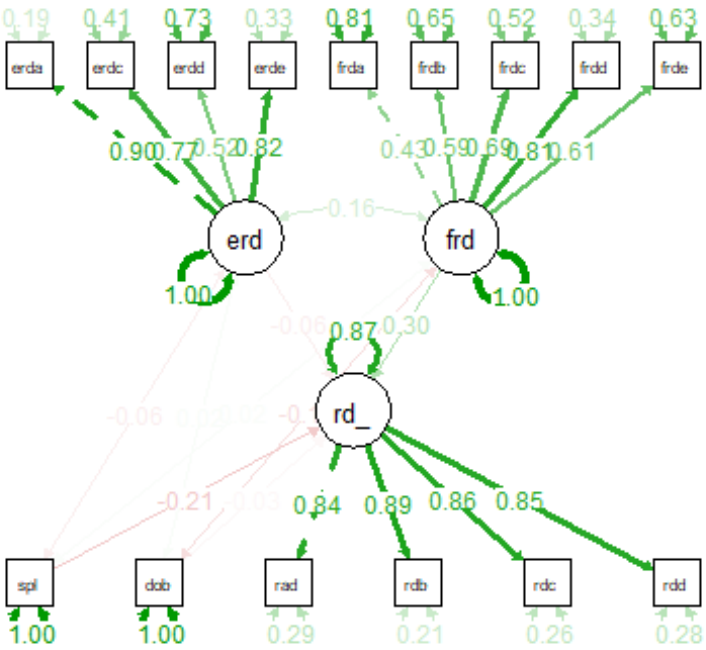

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_op  ~     erd   0.108  0.275
## 2 rad_op  ~     frd   0.326  0.008
## 3 rad_op  ~   blame   0.227  0.037
## 4 rad_op  ~ frd_blm   0.094  0.326
## 5 rad_op  ~    spol  -0.299  0.001
## 6 rad_op  ~     dob  -0.067  0.400

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_op 0.348
```

Intentions

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          rad_in =~ rada + radb + radc + radd
          rad_in ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.964        0.051        0.071

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

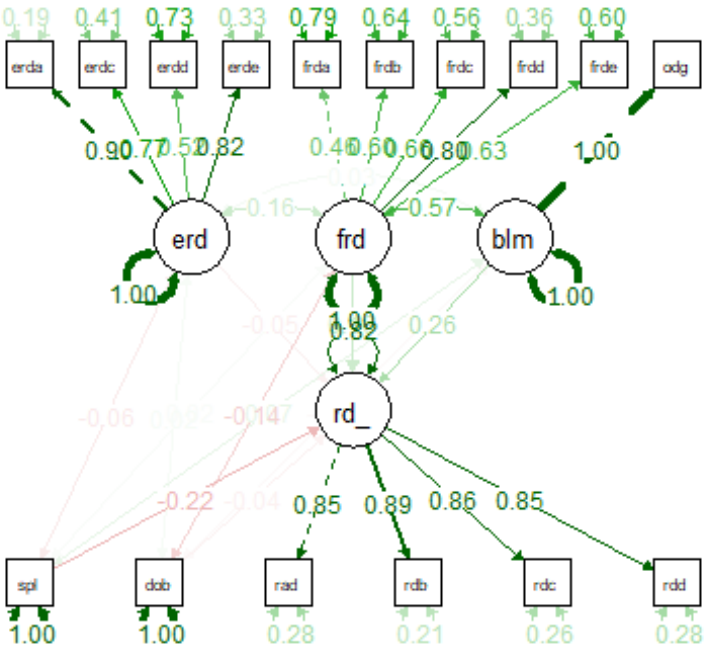



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_in  ~  erd  -0.065  0.414
## 2 rad_in  ~  frd   0.305  0.006
## 3 rad_in  ~ spol  -0.205  0.031
## 4 rad_in  ~  dob  -0.026  0.754
```

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.131
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.948        0.060        0.068

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

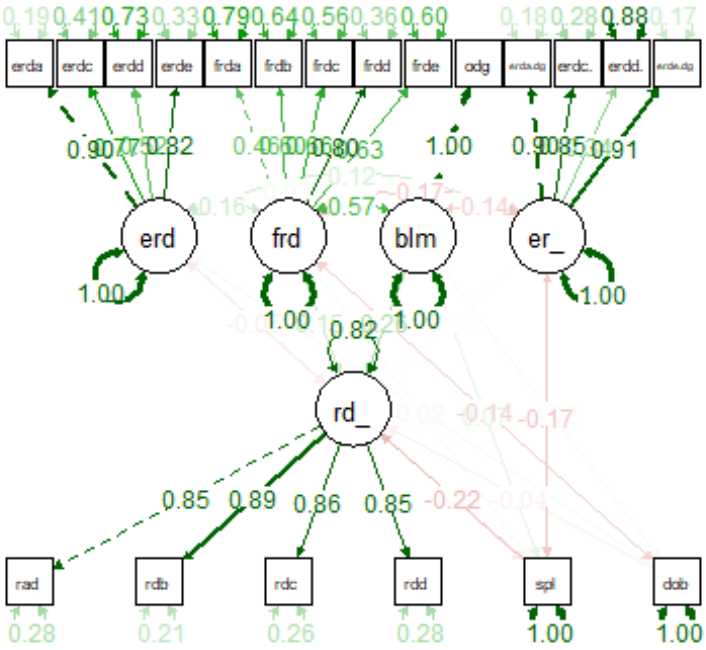



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd  -0.048  0.524
## 2 rad_in  ~   frd   0.156  0.198
## 3 rad_in  ~ blame   0.263  0.002
## 4 rad_in  ~  spol  -0.220  0.016
## 5 rad_in  ~   dob  -0.039  0.623

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs  est
## 1 rad_in 0.18
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
```

```
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.950        0.053        0.069

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

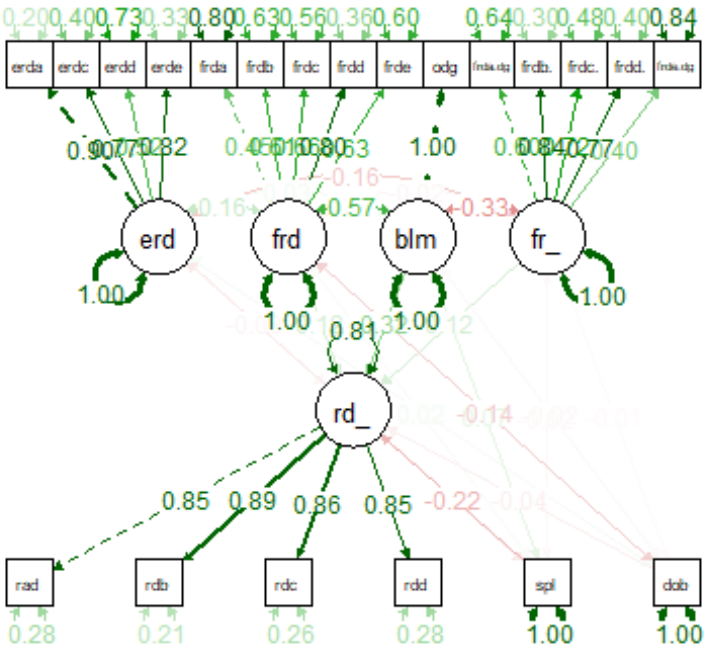



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.047  0.517
## 2 rad_in  ~     frd   0.155  0.206
```

```
## 3 rad_in  ~   blame   0.263  0.002
## 4 rad_in  ~ erd_blm  -0.004  0.954
## 5 rad_in  ~    spol  -0.220  0.020
## 6 rad_in  ~     dob  -0.039  0.624

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs  est
## 1 rad_in 0.18
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.873        0.080        0.076

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



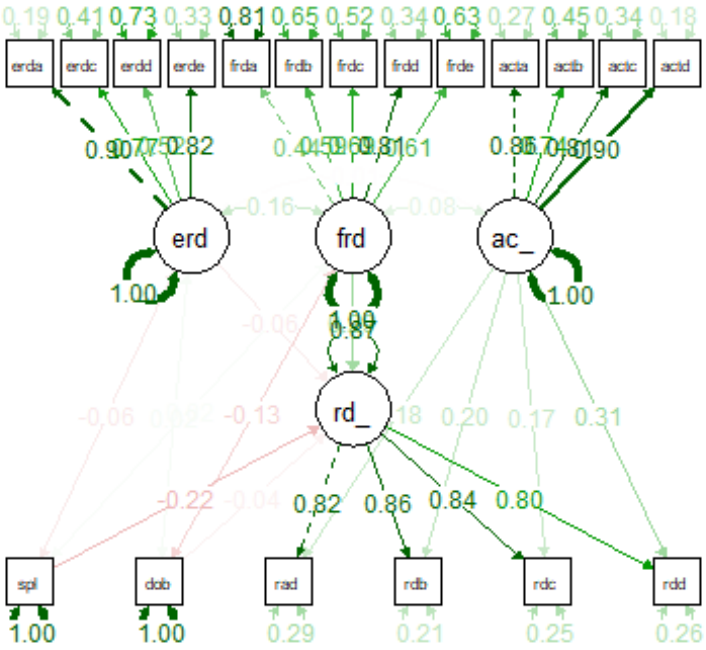

```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.026  0.745
## 2 rad_in  ~     frd   0.123  0.280
## 3 rad_in  ~   blame   0.321  0.001
## 4 rad_in  ~ frd_blm   0.119  0.213
## 5 rad_in  ~    spol  -0.220  0.014
## 6 rad_in  ~     dob  -0.041  0.601

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.192
```

Intentions - (S-1) bifactor

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
```

```
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          rad_in ~ erd + frd + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.934        0.065        0.071

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

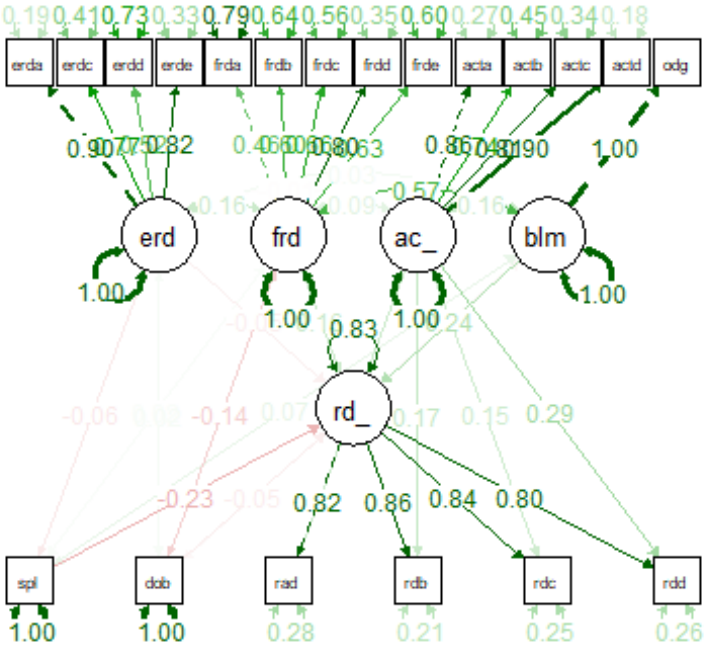



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op  rhs std.all pvalue
## 1 rad_in  ~  erd  -0.061  0.445
## 2 rad_in  ~  frd   0.294  0.010
```

```
## 3 rad_in  ~ spol  -0.217  0.025
## 4 rad_in  ~  dob  -0.040  0.622

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.132
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.923        0.068        0.068

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```

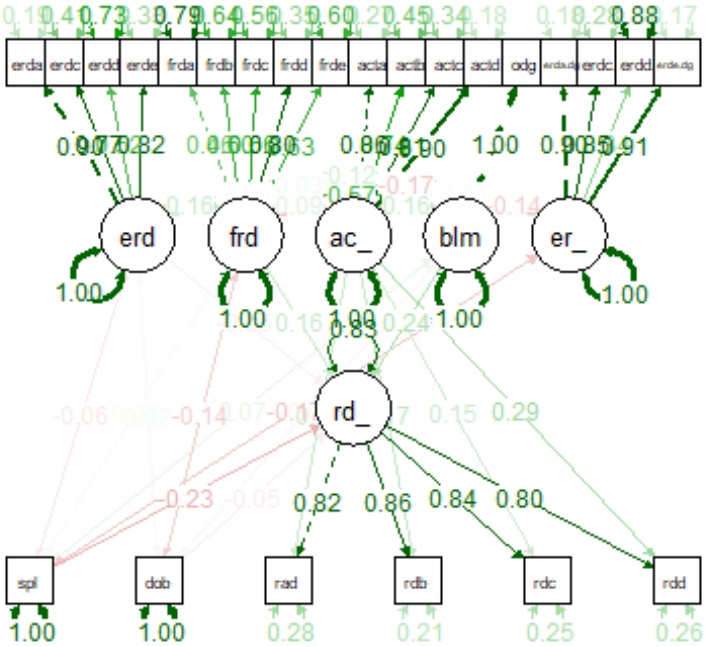



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op   rhs std.all pvalue
## 1 rad_in  ~   erd  -0.046  0.542
## 2 rad_in  ~   frd   0.161  0.189
## 3 rad_in  ~ blame   0.236  0.008
## 4 rad_in  ~  spol  -0.229  0.014
## 5 rad_in  ~   dob  -0.051  0.520

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.172
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
```

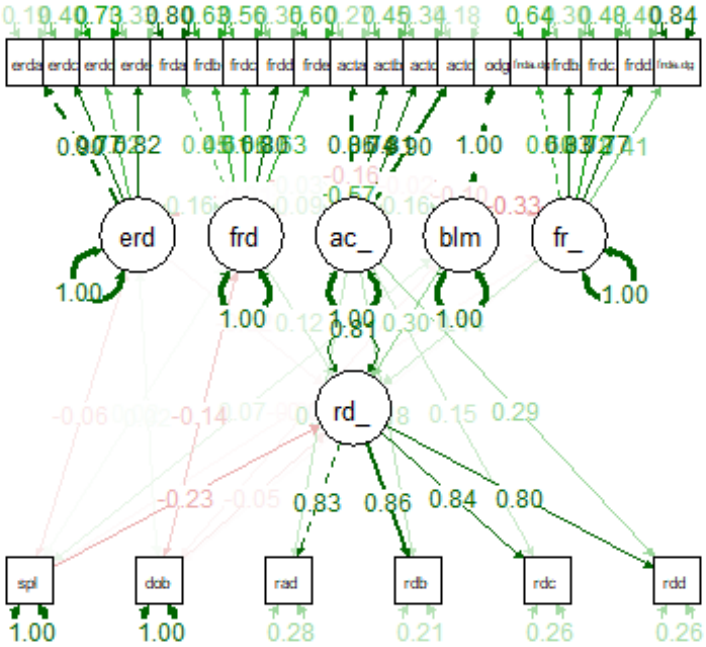
```
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.929        0.060        0.068

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```



```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.045  0.542
## 2 rad_in  ~     frd   0.159  0.196
## 3 rad_in  ~   blame   0.236  0.007
## 4 rad_in  ~ erd_blm  -0.006  0.926
## 5 rad_in  ~    spol  -0.230  0.018
## 6 rad_in  ~     dob  -0.051  0.520

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.172
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          frd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmod <- sem(model, estimator = "MLR", data = baza_n_erd_frd)
fitmeasures(modmod, fit.measures = c("cfi.robust", "rmsea.robust", "srmr"))

##   cfi.robust rmsea.robust         srmr
##        0.874        0.076        0.074

semPaths(modmod, what = "std", edge.label.cex = 1.2)
```




```
parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op == "~")
%>% select(lhs, op, rhs, std.all, pvalue)

##      lhs op     rhs std.all pvalue
## 1 rad_in  ~     erd  -0.020  0.801
## 2 rad_in  ~     frd   0.122  0.280
## 3 rad_in  ~   blame   0.303  0.001
## 4 rad_in  ~ frd_blm   0.139  0.145
## 5 rad_in  ~    spol  -0.229  0.012
## 6 rad_in  ~     dob  -0.054  0.491

parameterestimates(modmod, standardized = T, rsq = T) %>% filter(op ==
"r2", lhs %in% c("rad_op", "rad_in")) %>% select(lhs, est)

##      lhs   est
## 1 rad_in 0.187
```

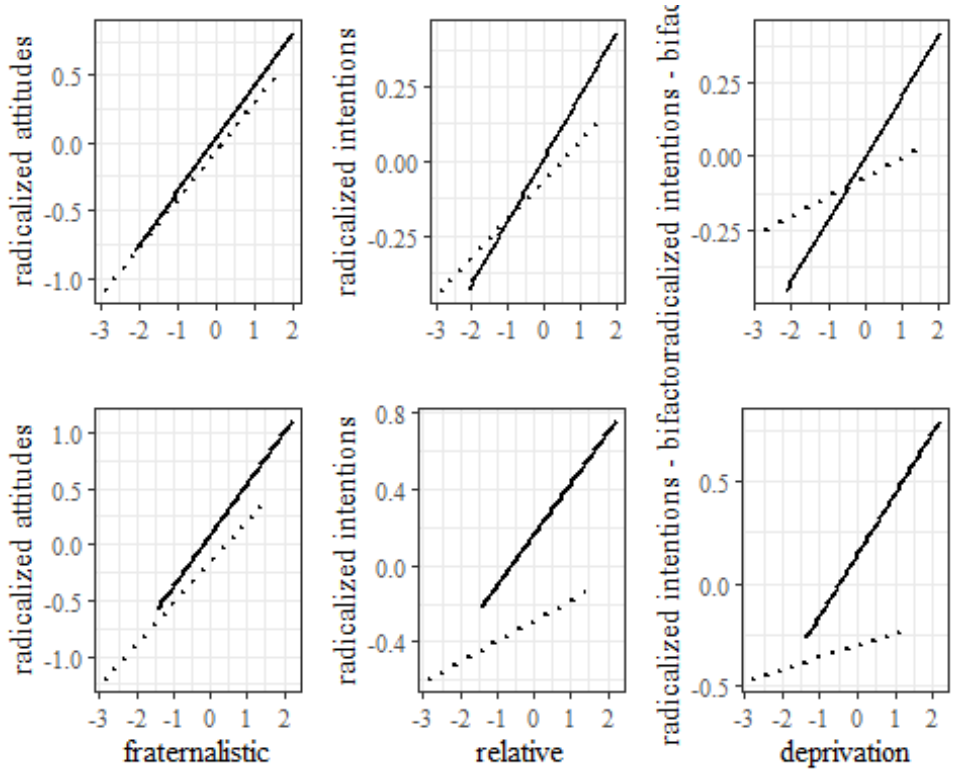
Visualizations

```
forplots1$blgr <- ifelse(forplots1$blame > mean(forplots1$blame), "above",
"below")
forplots2$blgr <- ifelse(forplots2$blame > mean(forplots2$blame), "above",
"below")
forplotn1$blgr <- ifelse(forplotn1$blame > mean(forplotn1$blame), "above",
"below")
```

```
forplotn2$blgr <- ifelse(forplotn2$blame > mean(forplotn2$blame), "above",
"below")

psp1 <- ggplot(forplots1, aes(x = frd, y = rad_op, linetype = blgr)) +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none") +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized attitudes") +
  xlab("") +
  theme(text = element_text(family = "serif"))

psp2 <- ggplot(forplots1, aes(x = frd, y = rad_in, linetype = blgr))  +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none")  +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized intentions") +
  xlab("") +
  theme(text = element_text(family = "serif"))

psp3 <- ggplot(forplots2, aes(x = frd, y = rad_in, linetype = blgr))  +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none")  +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized intentions - bifactor") +
  xlab("") +
  theme(text = element_text(family = "serif"))

psp4 <- ggplot(forplotn1, aes(x = frd, y = rad_op, linetype = blgr))  +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none") +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized attitudes") +
  xlab("fraternalistic") +
  theme(text = element_text(family = "serif"))

psp5 <- ggplot(forplotn1, aes(x = frd, y = rad_in, linetype = blgr))  +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none") +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized intentions") +
  xlab("relative") +
```

```
  theme(text = element_text(family = "serif"))

psp6 <- ggplot(forplotn2, aes(x = frd, y = rad_in, linetype = blgr))  +
  geom_smooth(method = "lm", se = F, color = "black") +
  theme_bw() +
  guides(linetype = "none") +
  scale_linetype_manual(values = c("solid", "dotted")) +
  ylab("radicalized intentions - bifactor") +
  xlab("deprivation") +
  theme(text = element_text(family = "serif"))

plot_grid(psp1, psp2, psp3, psp4, psp5, psp6, nrow = 2)
```

```
## `geom_smooth()` using formula 'y ~ x'
## `geom_smooth()` using formula 'y ~ x'
## `geom_smooth()` using formula 'y ~ x'
## `geom_smooth()` using formula 'y ~ x'
## `geom_smooth()` using formula 'y ~ x'
## `geom_smooth()` using formula 'y ~ x'
```



Multi-group comparisons of models and slopes

Additional robustness test

```
baza_sn_erd <- indProd(baza_sn, c("erda", "erdc", "erdd", "erde"),
c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)
baza_sn_erd_frd <- indProd(baza_sn_erd, c("frda", "frdb", "frdc", "frdd",
"frde"), c("odg"), match = F, meanC = T, residualC = F, doubleMC = T)
```

Attitudes

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          rad_op ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'

modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= -3.957879e-18) is smaller than zero. This may be a symptom that
##     the model is not identified.
```

```
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.476944e-15) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
```

```
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 41449 41946 340.97
## modmodw 176 41439 41889 350.94      9.328      10     0.5013
## modmods 188 41558 41950 493.16    143.508      12     <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     327.522†       166          .000        .048       .959
.948
## modmodw     336.583        176          .000        .047†      .959†
.951†
## modmods     474.477        188          .000        .060       .927
.919
##          srmr        aic        bic
## modmodc .041† 41449.480  41946.473
## modmodw .043  41439.456† 41888.661†
## modmods .059  41557.666  41949.527
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.001      0.000      0.003 0.002 -
10.024
## modmods - modmodw        12        0.014     -0.032     -0.032 0.016
118.211
##                        bic
## modmodw - modmodc -57.812
## modmods - modmodw  60.865
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 9.869726e-14) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 41449 41946 340.97
## modmodw 176 41439 41889 350.94     9.3281      10     0.5013
## modmods 186 41432 41833 363.04    12.5471      10     0.2501
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     327.522†       166          .000        .048       .959
.948
## modmodw     336.583        176          .000        .047       .959†
.951
## modmods     349.600        186          .000        .046†      .959
.953†
##          srmr        aic        bic
## modmodc .041† 41449.480  41946.473
## modmodw .043  41439.456  41888.661
## modmods .043  41431.556† 41832.974†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.001      0.000      0.003 0.002 -
10.024
## modmods - modmodw        10       -0.001     -0.001      0.002 0.000  -
7.900
##                         bic
## modmodw - modmodc -57.812
## modmods - modmodw -55.688

modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
```

```
##     (= 3.146364e-14) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 41449 41946 340.97
## modmodw 176 41439 41889 350.94     9.3281      10     0.5013
## modmods 186 41432 41833 363.04    12.5471      10     0.2501
## modmodr 190 41426 41808 365.52     2.3316       4     0.6750
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     327.522†       166          .000        .048       .959
.948
## modmodw     336.583        176          .000        .047       .959†
.951
## modmods     349.600        186          .000        .046       .959
.953
## modmodr     351.824        190          .000        .045†      .959
.955†
##          srmr        aic        bic
## modmodc .041† 41449.480  41946.473
## modmodw .043  41439.456  41888.661
## modmods .043  41431.556  41832.974
## modmodr .044  41426.028† 41808.331†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.001      0.000      0.003 0.002 -
10.024
## modmods - modmodw        10       -0.001     -0.001      0.002 0.000  -
7.900
## modmodr - modmods         4       -0.001      0.000      0.001 0.001  -
5.528
##                         bic
## modmodw - modmodc -57.812
```

```
## modmods - modmodw -55.688
## modmodr - modmods -24.643
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          rad_op ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= -3.872420e-19) is smaller than zero. This may be a symptom that
##     the model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.867110e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################## Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
```

```
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 45023 45587 390.56
## modmodw 196 45011 45527 399.07      7.768      10     0.6514
## modmods 208 45129 45588 541.07    143.286      12     <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     375.244†       186          .000        .049       .956
.943
## modmodw     382.397        196          .000        .048†      .956†
.947†
## modmods     519.979        208          .000        .060       .927
.916
##          srmr        aic        bic
## modmodc .040† 45022.852  45586.749
## modmodw .041  45011.362† 45527.470†
## modmods .057  45129.365  45588.129
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.002      0.001      0.004 0.002 -
11.490
## modmods - modmodw        12        0.012     -0.029     -0.031 0.015
118.004
##                        bic
## modmodw - modmodc -59.278
## modmods - modmodw  60.658
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.107359e-13) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 45023 45587 390.56
## modmodw 196 45011 45527 399.07     7.7685      10     0.6514
## modmods 206 45003 45472 410.96    12.3309      10     0.2635
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     375.244†       186          .000        .049       .956
.943
## modmodw     382.397        196          .000        .048       .956†
.947
## modmods     395.248        206          .000        .047†      .956
.949†
##          srmr        aic        bic
## modmodc .040† 45022.852  45586.749
## modmodw .041  45011.362  45527.470
## modmods .042  45003.254† 45471.575†
##
## ################### Differences in Fit Indices #######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.002      0.001      0.004 0.002 -
11.490
## modmods - modmodw        10       -0.001     -0.001      0.002 0.000  -
8.107
##                         bic
## modmodw - modmodc -59.278
## modmods - modmodw -55.895

modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
```

```
##     (= 1.266314e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 45023 45587 390.56
## modmodw 196 45011 45527 399.07     7.7685      10     0.6514
## modmods 206 45003 45472 410.96    12.3309      10     0.2635
## modmodr 211 44997 45441 414.23     3.2363       5     0.6636
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     375.244†       186          .000        .049       .956
.943
## modmodw     382.397        196          .000        .048       .956†
.947
## modmods     395.248        206          .000        .047       .956
.949
## modmodr     398.662        211          .000        .046†      .956
.950†
##          srmr        aic        bic
## modmodc .040† 45022.852  45586.749
## modmodw .041  45011.362  45527.470
## modmods .042  45003.254  45471.575
## modmodr .043  44996.523† 45440.950†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10       -0.002      0.001      0.004 0.002 -
11.490
## modmods - modmodw        10       -0.001     -0.001      0.002 0.000  -
8.107
## modmodr - modmods         5       -0.001      0.000      0.002 0.001  -
6.731
##                         bic
## modmodw - modmodc -59.278
```

```
## modmods - modmodw -55.895
## modmodr - modmods -30.625
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_op ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.014419e-17) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.865049e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################## Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
```

```
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 60129 60865 619.90
## modmodw 319 60122 60796 639.32      13.84      13     0.3852
## modmods 334 60240 60842 787.10     155.86      15     <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     540.258†       306          .000        .045       .956†
.946
## modmodw     552.168        319          .000        .044†      .956
.948†
## modmods     685.373        334          .000        .052       .935
.926
##          srmr        aic        bic
## modmodc .040† 60128.898  60864.831
## modmodw .042  60122.317† 60796.126†
## modmods .053  60240.094  60842.221
##
## ################## Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13       -0.001      0.000      0.002 0.002  -
6.581
## modmods - modmodw        15        0.009     -0.022     -0.022 0.011
117.776
##                        bic
## modmodw - modmodc -68.705
## modmods - modmodw  46.095

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("dob ~
1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 6.330971e-14) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 60129 60865 619.90
## modmodw 319 60122 60796 639.32     13.840      13     0.3852
## modmods 332 60114 60726 656.99     19.178      13     0.1177
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     540.258†       306          .000        .045       .956†
.946
## modmodw     552.168        319          .000        .044       .956
.948
## modmods     572.005        332          .000        .043†      .955
.949†
##          srmr        aic        bic
## modmodc .040† 60128.898  60864.831
## modmodw .042  60122.317  60796.126
## modmods .042  60113.983† 60725.667†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13       -0.001      0.000      0.002 0.002 -
6.581
## modmods - modmodw        13        0.000     -0.001      0.001 0.000 -
8.334
##                        bic
## modmodw - modmodc -68.705
## modmods - modmodw -70.459

modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
```

```
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.729970e-14) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 60129 60865 619.90
## modmodw 319 60122 60796 639.32     13.840      13     0.3852
## modmods 332 60114 60726 656.99     19.178      13     0.1177
## modmodr 338 60105 60688 660.35      3.287       6     0.7721
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     540.258†       306          .000        .045       .956†
.946
## modmodw     552.168        319          .000        .044       .956
.948
## modmods     572.005        332          .000        .043       .955
.949
## modmodr     576.048        338          .000        .043†      .956
.950†
##          srmr        aic        bic
## modmodc .040† 60128.898  60864.831
## modmodw .042  60122.317  60796.126
## modmods .042  60113.983  60725.667
## modmodr .043  60105.347† 60688.359†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13       -0.001      0.000      0.002 0.002 -
6.581
## modmods - modmodw        13        0.000     -0.001      0.001 0.000 -
8.334
## modmodr - modmods         6       -0.001      0.000      0.001 0.001 -
8.636
##                       bic
```

```
## modmodw - modmodc -68.705
## modmods - modmodw -70.459
## modmodr - modmods -37.309
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_op =~ vatta + vattb + vattc + vattd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_op ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 3.536270e-17) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")
modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 66797 67562  863.23
```

```
## modmodw 358 66822 67519  916.05      34.58      14   0.001696 **
## modmods 374 66935 67556 1061.35     152.24      16  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     760.470†       344          .000        .056†      .921†
.903†
## modmodw     796.239        358          .000        .057       .915
.901
## modmods     929.316        374          .000        .062       .894
.881
##          srmr        aic        bic
## modmodc .050† 66796.952† 67561.557
## modmodw .054  66821.769  67519.471†
## modmods .063  66935.076  67556.318
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        14        0.001     -0.005     -0.002 0.004
24.817
## modmods - modmodw        16        0.006     -0.022     -0.020 0.009
113.307
##                        bic
## modmodw - modmodc -42.086
## modmods - modmodw  36.847

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings", group.partial = c("frd_blm =~ frde.odg"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 6.745674e-13) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("frd_blm
=~ frde.odg", "dob ~ 1", "spol ~ 1"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison ########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
```

```
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 66797 67562 863.23
## modmodw 357 66794 67497 886.56     15.781      13     0.2612
## modmods 371 66782 67417 902.12     16.634      14     0.2762
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     760.470†       344          .000        .056       .921†
.903
## modmodw     772.518        357          .000        .055       .920
.906
## modmods     791.597        371          .000        .054†      .920
.909†
##          srmr        aic        bic
## modmodc .050† 66796.952  67561.557
## modmodw .052  66794.278  67496.759
## modmods .052  66781.842† 67417.421†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13       -0.001     -0.001      0.003 0.002  -
2.674
## modmods - modmodw        14       -0.001      0.000      0.003 0.000 -
12.436
##                        bic
## modmodw - modmodc -64.798
## modmods - modmodw -79.339

modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("frd_blm =~ frde.odg", "dob ~ 1", "spol ~ 1"))
summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison ########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
```

```
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 66797 67562 863.23
## modmodw 357 66794 67497 886.56    15.7806      13     0.2612
## modmods 371 66782 67417 902.12    16.6344      14     0.2762
## modmodr 377 66772 67379 904.73     2.5329       6     0.8648
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     760.470†       344          .000        .056       .921†
.903
## modmodw     772.518        357          .000        .055       .920
.906
## modmods     791.597        371          .000        .054       .920
.909
## modmodr     795.098        377          .000        .054†      .920
.911†
##          srmr        aic        bic
## modmodc .050† 66796.952  67561.557
## modmodw .052  66794.278  67496.759
## modmods .052  66781.842  67417.421
## modmodr .052  66772.453† 67379.358†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13       -0.001     -0.001      0.003 0.002  -
2.674
## modmods - modmodw        14       -0.001      0.000      0.003 0.000 -
12.436
## modmodr - modmods         6       -0.001      0.001      0.002 0.000  -
9.390
##                        bic
## modmodw - modmodc -64.798
## modmods - modmodw -79.339
## modmodr - modmods -38.062
```

Intentions

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
```

```
          rad_in ~ erd + frd + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= -1.456724e-18) is smaller than zero. This may be a symptom that
##     the model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.243734e-15) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 37264 37761 320.23
## modmodw 176 37271 37720 347.34     18.657      10    0.04485 *
## modmods 188 37390 37782 490.92    142.861      12    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     285.964†       166          .000        .043†      .974†
```

```
.967†
## modmodw     305.015        176          .000        .044       .971
.966
## modmods     434.355        188          .000        .058       .946
.939
##          srmr        aic        bic
## modmodc .039† 37263.657† 37760.651
## modmodw .042  37270.761  37719.966†
## modmods .058  37390.339  37782.200
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10        0.001     -0.002     -0.001 0.003
7.104
## modmods - modmodw        12        0.014     -0.026     -0.027 0.016
119.579
##                         bic
## modmodw - modmodc -40.684
## modmods - modmodw  62.233

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings", group.partial = c("rad_in =~ radb"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 6.017804e-15) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1", "rad_in =~ radb"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.130722e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
```

```
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 37264 37761 320.23
## modmodw 175 37258 37712 333.00     9.3818       9     0.4028
## modmods 185 37255 37661 349.23    16.4601      10     0.0872 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     285.964†       166          .000        .043       .974†
.967
## modmodw     294.110        175          .000        .042       .974
.968
## modmods     310.613        185          .000        .042†      .972
.969†
##          srmr        aic        bic
## modmodc .039† 37263.657  37760.651
## modmodw .041  37258.423  37712.408
## modmods .041  37254.649† 37660.846†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         9       -0.001      0.000      0.002 0.002 -
5.234
## modmods - modmodw        10        0.000     -0.001      0.000 0.001 -
3.774
##                        bic
## modmodw - modmodc -48.243
## modmods - modmodw -51.562
```

```
modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 5.061529e-15) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 166 37264 37761 320.23
## modmodw 175 37258 37712 333.00     9.3818       9    0.40280
## modmods 185 37255 37661 349.23    16.4601      10    0.08720 .
## modmodr 190 37258 37641 362.95    10.7290       5    0.05703 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     285.964†       166          .000        .043       .974†
.967
## modmodw     294.110        175          .000        .042       .974
.968
## modmods     310.613        185          .000        .042†      .972
.969†
## modmodr     321.655        190          .000        .042       .971
.968
##          srmr        aic        bic
## modmodc .039† 37263.657  37760.651
## modmodw .041  37258.423  37712.408
## modmods .041  37254.649† 37660.846
## modmodr .043  37258.379  37640.681†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc         9       -0.001      0.000      0.002 0.002 -
5.234
## modmods - modmodw        10        0.000     -0.001      0.000 0.001 -
3.774
## modmodr - modmods         5        0.001     -0.001     -0.001 0.002
3.729
##                         bic
## modmodw - modmodc -48.243
```

```
## modmods - modmodw -51.562
## modmodr - modmods -20.164
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 7.689098e-18) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 7.842163e-15) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################## Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
```

```
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 40845 41409 365.25
## modmodw 196 40850 41366 390.49     16.979      10    0.07483 .
## modmods 208 40969 41428 533.86    142.606      12    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     330.701†       186          .000        .044†      .971†
.962†
## modmodw     347.422        196          .000        .044       .969
.962
## modmods     477.892        208          .000        .057       .945
.936
##          srmr        aic        bic
## modmodc .038† 40844.862† 41408.759
## modmodw .040  40850.094  41366.202†
## modmods .055  40969.466  41428.230
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10        0.000     -0.002      0.000 0.003
5.231
## modmods - modmodw        12        0.013     -0.024     -0.026 0.015
119.373
##                        bic
## modmodw - modmodc -42.557
## modmods - modmodw  62.027
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.850524e-14) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 40845 41409 365.25
## modmodw 196 40850 41366 390.49     16.979      10    0.07483 .
## modmods 206 40843 41312 403.75     13.510      10    0.19656
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     330.701†       186          .000        .044       .971†
.962
## modmodw     347.422        196          .000        .044       .969
.962
## modmods     361.443        206          .000        .044†      .968
.963†
##          srmr        aic        bic
## modmodc .038† 40844.862  41408.759
## modmodw .040  40850.094  41366.202
## modmods .040  40843.355† 41311.676†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10        0.000     -0.002      0.000 0.003
5.231
## modmods - modmodw        10       -0.001     -0.001      0.001 0.000 -
6.738
##                       bic
## modmodw - modmodc -42.557
## modmods - modmodw -54.526

modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
```

```
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.143980e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 186 40845 41409 365.25
## modmodw 196 40850 41366 390.49     16.979      10    0.07483 .
## modmods 206 40843 41312 403.75     13.510      10    0.19656
## modmodr 211 40840 41284 409.96      6.895       5    0.22856
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     330.701†       186          .000        .044       .971†
.962
## modmodw     347.422        196          .000        .044       .969
.962
## modmods     361.443        206          .000        .044       .968
.963
## modmodr     368.695        211          .000        .043†      .968
.963†
##          srmr        aic        bic
## modmodc .038† 40844.862  41408.759
## modmodw .040  40850.094  41366.202
## modmods .040  40843.355  41311.676
## modmodr .043  40839.563† 41283.990†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        10        0.000     -0.002      0.000 0.003
5.231
## modmods - modmodw        10       -0.001     -0.001      0.001 0.000 -
6.738
## modmodr - modmods         5        0.000      0.000      0.001 0.002 -
```

```
3.792
##                         bic
## modmodw - modmodc -42.557
## modmods - modmodw -54.526
## modmodr - modmods -27.686
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.509290e-17) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.852918e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))
```

```
## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 55951 56687 594.17
## modmodw 319 55961 56635 630.23     21.183      13    0.06938 .
## modmods 334 56080 56683 779.38    155.409      15    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     491.898†       306          .000        .041†      .969†
.961†
## modmodw     513.192        319          .000        .041       .967
.960
## modmods     640.930        334          .000        .050       .948
.941
##          srmr        aic        bic
## modmodc .037† 55951.267† 56687.200
## modmodw .040  55961.327  56635.135†
## modmods .050  56080.473  56682.600
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13        0.000     -0.002     -0.001 0.003
10.059
## modmods - modmodw        15        0.009     -0.019     -0.020 0.011
119.147
##                       bic
## modmodw - modmodc -52.065
## modmods - modmodw  47.465

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("dob ~
1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
```

```
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 6.040524e-14) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 55951 56687 594.17
## modmodw 319 55961 56635 630.23     21.183      13    0.06938 .
## modmods 332 55954 56566 649.27     20.371      13    0.08633 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     491.898†       306          .000        .041†      .969†
.961†
## modmodw     513.192        319          .000        .041       .967
.960
## modmods     533.689        332          .000        .041       .966
.961
##          srmr        aic        bic
## modmodc .037† 55951.267† 56687.200
## modmodw .040  55961.327  56635.135
## modmods .040  55954.362  56566.047†
##
## ################### Differences in Fit Indices #######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13            0     -0.002     -0.001 0.003
10.059
## modmods - modmodw        13            0     -0.001      0.000 0.000 -
6.964
##                        bic
## modmodw - modmodc -52.065
## modmods - modmodw -69.088
```

```
modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 7.014752e-14) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 306 55951 56687 594.17
## modmodw 319 55961 56635 630.23    21.1833      13    0.06938 .
## modmods 332 55954 56566 649.27    20.3711      13    0.08633 .
## modmodr 338 55949 56532 655.53     7.3543       6    0.28932
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     491.898†       306          .000        .041       .969†
.961
## modmodw     513.192        319          .000        .041       .967
.960
## modmods     533.689        332          .000        .041       .966
.961
## modmodr     541.721        338          .000        .041†      .966
.961†
##          srmr        aic        bic
## modmodc .037† 55951.267  56687.200
## modmodw .040  55961.327  56635.135
## modmods .040  55954.362  56566.047
## modmodr .041  55948.628† 56531.640†
##
## ################### Differences in Fit Indices ######################
```

```
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        13            0     -0.002     -0.001 0.003
10.059
## modmods - modmodw        13            0     -0.001      0.000 0.000 -
6.964
## modmodr - modmods         6            0      0.000      0.001 0.001 -
5.734
##                         bic
## modmodw - modmodc -52.065
## modmods - modmodw -69.088
## modmodr - modmods -34.407
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 5.276722e-18) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
```

```
##     (= 5.871793e-13) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 62617 63381  870.34
## modmodw 358 62658 63356  940.05     38.659      14  0.0004117 ***
## modmods 374 62773 63394 1086.74    152.122      16  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     738.967†       344          .000        .055†      .934†
.919†
## modmodw     781.917        358          .000        .057       .927
.915
## modmods     911.652        374          .000        .062       .908
.897
##          srmr        aic        bic
## modmodc .049† 62616.534† 63381.139
## modmodw .053  62658.241  63355.944†
## modmods .062  62772.933  63394.175
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        14        0.001     -0.006     -0.004 0.004
41.708
## modmods - modmodw        16        0.006     -0.019     -0.017 0.009
114.691
##                       bic
## modmodw - modmodc -25.195
## modmods - modmodw  38.231
```

```
modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings", group.partial = c("rad_in =~ radb",
"frd_blm =~ frde.odg"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.379663e-12) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("rad_in
=~ radb", "frd_blm =~ frde.odg", "dob ~ 1", "spol ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.012703e-12) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 62617 63381 870.34
## modmodw 356 62618 63326 896.30     15.005      12    0.24114
## modmods 370 62611 63251 916.57     21.520      14    0.08903 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     738.967†       344          .000        .055       .934†
.919
## modmodw     749.169        356          .000        .055       .933
.921
## modmods     772.326        370          .000        .054†      .932
```

```
.923†
##          srmr        aic        bic
## modmodc .049† 62616.534  63381.139
## modmodw .050  62618.491  63325.751
## modmods .051  62610.765† 63251.122†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        12       -0.001     -0.001      0.002 0.002
1.958
## modmods - modmodw        14       -0.001     -0.001      0.002 0.000 -
7.727
##                        bic
## modmodw - modmodc -55.388
## modmods - modmodw -74.630

modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("rad_in =~ radb", "frd_blm =~ frde.odg", "dob ~ 1", "spol
~ 1"))
summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 344 62617 63381 870.34
## modmodw 356 62618 63326 896.30    15.0054      12    0.24114
## modmods 370 62611 63251 916.57    21.5200      14    0.08903 .
## modmodr 376 62605 63216 922.51     6.1831       6    0.40299
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     738.967†       344          .000        .055       .934†
.919
## modmodw     749.169        356          .000        .055       .933
.921
## modmods     772.326        370          .000        .054       .932
```

```
.923
## modmodr     779.703        376          .000        .054†      .932
.924†
##           srmr        aic        bic
## modmodc .049† 62616.534  63381.139
## modmodw .050  62618.491  63325.751
## modmods .051  62610.765  63251.122
## modmodr .052  62604.703† 63216.388†
##
## ################## Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        12       -0.001     -0.001      0.002 0.002
1.958
## modmods - modmodw        14       -0.001     -0.001      0.002 0.000 -
7.727
## modmodr - modmods         6        0.000      0.000      0.001 0.001 -
6.061
##                       bic
## modmodw - modmodc -55.388
## modmods - modmodw -74.630
## modmodr - modmods -34.734
```

Intentions - (S-1) bifactor

Model 1 (RD only)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          rad_in ~ erd + frd + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
```

```
##     (= 1.206462e-19) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 6.141872e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 278 48516 49185 658.31
## modmodw 295 48524 49112 700.60     33.898      17   0.008655 **
## modmods 310 48642 49158 848.03    145.854      15  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     587.640†       278          .000        .053       .952†
.941
## modmodw     621.321        295          .000        .053†      .949
.941†
## modmods     755.852        310          .000        .061       .931
.923
##          srmr        aic        bic
## modmodc .049† 48516.204† 49185.234
## modmodw .051  48524.497  49112.288†
## modmods .062  48641.922  49158.031
##
## ################## Differences in Fit Indices ########################
```

```
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        17        0.000     -0.003      0.000 0.002
8.293
## modmods - modmodw        15        0.007     -0.018     -0.017 0.011
117.425
##                         bic
## modmodw - modmodc -72.946
## modmods - modmodw  45.743

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings", group.partial = c("rad_in =~ radb"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 3.896181e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1", "rad_in =~ radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.917684e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 278 48516 49185 658.31
## modmodw 294 48513 49105 686.64     23.793      16    0.09412 .
## modmods 306 48504 49039 701.75     15.180      12    0.23173
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     587.640†       278          .000        .053       .952†
.941
## modmodw     610.839        294          .000        .053       .951
.943
## modmods     627.099        306          .000        .052†      .950
.944†
##          srmr        aic        bic
## modmodc .049† 48516.204  49185.234
## modmodw .050  48512.535  49105.105
## modmods .050  48503.641† 49038.865†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        16       -0.001     -0.001      0.002 0.001 -
3.669
## modmods - modmodw        12       -0.001      0.000      0.002 0.000 -
8.894
##                        bic
## modmodw - modmodc -80.129
## modmods - modmodw -66.239

modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1", "rad_in =~ radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.255609e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
```

```
## modmodc 278 48516 49185 658.31
## modmodw 294 48513 49105 686.64    23.7932      16    0.09412 .
## modmods 306 48504 49039 701.75    15.1802      12    0.23173
## modmodr 310 48497 49013 703.43     1.4928       4    0.82791
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     587.640†       278          .000        .053       .952†
.941
## modmodw     610.839        294          .000        .053       .951
.943
## modmods     627.099        306          .000        .052       .950
.944
## modmodr     628.555        310          .000        .051†      .951
.945†
##          srmr        aic        bic
## modmodc .049† 48516.204  49185.234
## modmodw .050  48512.535  49105.105
## modmods .050  48503.641  49038.865
## modmodr .051  48497.321† 49013.430†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        16       -0.001     -0.001      0.002 0.001 -
3.669
## modmods - modmodw        12       -0.001      0.000      0.002 0.000 -
8.894
## modmodr - modmods         4       -0.001      0.000      0.001 0.001 -
6.320
##                        bic
## modmodw - modmodc -80.129
## modmods - modmodw -66.239
## modmodr - modmods -25.435
```

Model 2 (RD + blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
```

```
          odg ~~ 0*odg
          rad_in ~ erd + frd + blame + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 4.333326e-19) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.064131e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 304 52088 52833 708.59
## modmodw 321 52095 52759 749.36     32.174      17    0.01432 *
## modmods 336 52212 52805 896.56    145.627      15    < 2e-16 ***
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     638.881†       304          .000        .053       .951†
.939
## modmodw     670.578        321          .000        .053†      .948
.939†
## modmods     805.735        336          .000        .059       .931
.922
##           srmr         aic         bic
## modmodc .047† 52087.975† 52833.466
## modmodw .049  52094.752  52759.003†
## modmods .060  52211.951  52804.520
##
## ################### Differences in Fit Indices ########################
##                    df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        17        0.000     -0.003      0.000 0.002
6.777
## modmods - modmodw        15        0.007     -0.017     -0.017 0.011
117.199
##                         bic
## modmodw - modmodc -74.462
## modmods - modmodw  45.517
```

```
modmodw <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = "loadings", group.partial = c("rad_in =~ radb"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.902368e-14) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts"), group.partial = c("dob ~ 1",
"spol ~ 1", "rad_in =~ radb", "radc ~ 1"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 4.381643e-13) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 304 52088 52833 708.59
## modmodw 320 52083 52752 735.65     22.394      16     0.1309
## modmods 332 52074 52686 750.45     14.836      12     0.2505
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     638.881†       304          .000        .053       .951†
.939
## modmodw     660.323        320          .000        .052       .950
.940
## modmods     676.164        332          .000        .051†      .949
.942†
##          srmr        aic        bic
## modmodc .047† 52087.975  52833.466
## modmodw .048  52083.040  52752.070
## modmods .048  52073.840† 52685.524†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        16       -0.001     -0.001      0.002 0.001 -
4.936
## modmods - modmodw        12       -0.001      0.000      0.002 0.000 -
9.200
##                        bic
## modmodw - modmodc -81.396
## modmods - modmodw -66.545

modmodr <- sem(model, estimator = "MLR", data = baza_sn, group = "Q1",
group.equal = c("loadings", "intercepts", "regressions"), group.partial =
c("dob ~ 1", "spol ~ 1", "rad_in =~ radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
```

```
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 2.997246e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 304 52088 52833 708.59
## modmodw 320 52083 52752 735.65    22.3943      16     0.1309
## modmods 332 52074 52686 750.45    14.8362      12     0.2505
## modmodr 337 52069 52657 756.02     5.6284       5     0.3441
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     638.881†       304          .000        .053       .951†
.939
## modmodw     660.323        320          .000        .052       .950
.940
## modmods     676.164        332          .000        .051       .949
.942
## modmodr     682.281        337          .000        .051†      .949
.943†
##          srmr        aic        bic
## modmodc .047† 52087.975  52833.466
## modmodw .048  52083.040  52752.070
## modmods .048  52073.840  52685.524
## modmodr .049  52069.407† 52657.197†
##
## ################### Differences in Fit Indices ######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        16       -0.001     -0.001      0.002 0.001 -
4.936
## modmods - modmodw        12       -0.001      0.000      0.002 0.000 -
9.200
## modmodr - modmods         5        0.000      0.000      0.001 0.001 -
4.433
##                       bic
```

```
## modmodw - modmodc -81.396
## modmods - modmodw -66.545
## modmodr - modmods -28.327
```

Model 3 (ERD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          erd_blm =~ erda.odg + erdc.odg + erdd.odg + erde.odg
          rad_in ~ erd + frd + blame + erd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          erd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          erd_blm ~~ spol
          erd_blm ~~ dob'
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 4.523785e-17) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.383923e-14) is close to zero. This may be a symptom that the
##     model is not identified.
```

```
modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 454 67198 68125  964.88
## modmodw 474 67210 68041 1016.55     35.735      20    0.01652 *
## modmods 492 67326 68072 1169.52    157.477      18    < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     828.905†       454          .000        .047†      .953†
.943†
## modmodw     864.461        474          .000        .047       .950
.942
## modmods    1000.912        492          .000        .052       .936
.928
##          srmr        aic        bic
## modmodc .044† 67197.845† 68124.929
## modmodw .046  67209.520  68041.029†
## modmods .055  67326.487  68071.978
##
## ################### Differences in Fit Indices #######################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        20        0.000     -0.002      0.000 0.002
11.676
## modmods - modmodw        18        0.005     -0.015     -0.014 0.008
116.967
##                        bic
## modmodw - modmodc -83.900
## modmods - modmodw  30.949

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings", group.partial = c("rad_in =~ radb"))
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.891425e-14) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("dob ~
1", "spol ~ 1", "rad_in =~ radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.047393e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 454 67198 68125  964.88
## modmodw 473 67198 68034 1002.84     26.963      19     0.1055
## modmods 488 67188 67953 1023.40     21.537      15     0.1205
##
## ####################### Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     828.905†       454          .000        .047       .953†
.943
## modmodw     854.328        473          .000        .046       .952
.944
## modmods     876.876        488          .000        .046†      .951
.945†
##          srmr        aic        bic
## modmodc .044† 67197.845  68124.929
## modmodw .046  67197.805  68034.092
## modmods .046  67188.366† 67952.971†
##
```

```
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        19            0     -0.001      0.001 0.001 -
0.040
## modmods - modmodw        15            0     -0.001      0.001 0.000 -
9.439
##                         bic
## modmodw - modmodc -90.837
## modmods - modmodw -81.121

modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("dob ~ 1", "spol ~ 1", "rad_in =~ radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 5.297991e-13) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 454 67198 68125  964.88
## modmodw 473 67198 68034 1002.84    26.9632      19     0.1055
## modmods 488 67188 67953 1023.40    21.5373      15     0.1205
## modmodr 494 67182 67918 1028.95     5.9216       6     0.4320
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc     828.905†       454          .000        .047       .953†
.943
## modmodw     854.328        473          .000        .046       .952
.944
## modmods     876.876        488          .000        .046       .951
.945
```

```
## modmodr     883.743        494          .000        .046†       .951
.945†
##           srmr        aic        bic
## modmodc .044† 67197.845  68124.929
## modmodw .046  67197.805  68034.092
## modmods .046  67188.366  67952.971
## modmodr .047  67181.919† 67917.852†
##
## ################## Differences in Fit Indices ########################
##                    df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        19            0     -0.001      0.001 0.001 -
0.040
## modmods - modmodw        15            0     -0.001      0.001 0.000 -
9.439
## modmodr - modmods         6            0      0.000      0.001 0.001 -
6.446
##                         bic
## modmodw - modmodc -90.837
## modmods - modmodw -81.121
## modmodr - modmods -35.119
```

Model 4 (FRD x blame)

```
model <- 'erd =~ erda + erdc + erdd + erde
          frd =~ frda + frdb + frdc + frdd + frde
          rad_in =~ rada + radb + radc + radd
          act_in =~ acta + actb + actc + actd + rada + radb + radc + radd
          rad_in ~~ 0*act_in
          blame =~ odg
          odg ~~ 0*odg
          frd_blm =~ frda.odg + frdb.odg + frdc.odg + frdd.odg + frde.odg
          rad_in ~ erd + frd + blame + frd_blm + spol + dob
          erd ~~ act_in
          frd ~~ act_in
          blame ~~ act_in
          frd_blm ~~ act_in
          erd ~~ spol
          erd ~~ dob
          frd ~~ spol
          frd ~~ dob
          blame ~~ spol
          blame ~~ dob
          frd_blm ~~ spol
          frd_blm ~~ dob'
```

```
modmodc <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.767060e-17) is close to zero. This may be a symptom that the
##     model is not identified.

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings")

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.691615e-13) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 500 73860 74815 1243.0
## modmodw 521 73903 74758 1328.0     55.674      21  5.635e-05 ***
## modmods 540 74015 74780 1478.6    154.382      19  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ###########################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc    1078.541†       500          .000        .055†      .927†
.912†
## modmodw    1137.418        521          .000        .056       .921
.909
## modmods    1273.734        540          .000        .060       .906
```

```
.896
##          srmr        aic        bic
## modmodc .051† 73859.514† 74815.271
## modmodw .055  73902.583  74757.985†
## modmods .062  74015.114  74779.719
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        21        0.001     -0.006     -0.003 0.003
43.069
## modmods - modmodw        19        0.004     -0.015     -0.013 0.007
112.531
##                        bic
## modmodw - modmodc -57.285
## modmods - modmodw  21.734

modmodw <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = "loadings", group.partial = c("frd_blm =~ frde.odg",
"rad_in =~ radb"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.056301e-13) is close to zero. This may be a symptom that the
##     model is not identified.

modmods <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts"), group.partial = c("frd_blm
=~ frde.odg", "dob ~ 1", "spol ~ 1", "rad_in =~ radb", "radc ~ 1"))
summary(compareFit(modmodc, modmodw, modmods))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 500 73860 74815 1243.0
## modmodw 519 73863 74728 1284.7     28.632      19    0.07199 .
## modmods 535 73850 74639 1303.6     19.673      16    0.23532
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc    1078.541†       500          .000        .055       .927†
.912
## modmodw    1104.054        519          .000        .055       .925
.913
## modmods    1126.155        535          .000        .054†      .925
.916†
##          srmr        aic        bic
## modmodc .051† 73859.514  74815.271
## modmodw .053  73863.244  74728.204
## modmods .053  73850.167† 74638.667†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        19        0.000     -0.002      0.001 0.001
3.730
## modmods - modmodw        16       -0.001      0.000      0.002 0.000 -
13.076
##                       bic
## modmodw - modmodc -87.067
## modmods - modmodw -89.537

modmodr <- sem(model, estimator = "MLR", data = baza_sn_erd_frd, group =
"Q1", group.equal = c("loadings", "intercepts", "regressions"),
group.partial = c("frd_blm =~ frde.odg", "dob ~ 1", "spol ~ 1", "rad_in =~
radb", "radc ~ 1"))

## Warning in lav_model_vcov(lavmodel = lavmodel, lavsamplestats =
lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= 1.086654e-12) is close to zero. This may be a symptom that the
##     model is not identified.

summary(compareFit(modmodc, modmodw, modmods, modmodr))

## ################### Nested Model Comparison #########################
## Scaled Chi-Squared Difference Test (method = "satorra.bentler.2001")
##
## lavaan NOTE:
##     The "Chisq" column contains standard test statistics, not the
##     robust test that should be reported per model. A robust difference
##     test is a function of two standard (not robust) statistics.
```

```
##
##          Df   AIC   BIC  Chisq Chisq diff Df diff Pr(>Chisq)
## modmodc 500 73860 74815 1243.0
## modmodw 519 73863 74728 1284.7    28.6324      19    0.07199 .
## modmods 535 73850 74639 1303.6    19.6729      16    0.23532
## modmodr 541 73844 74603 1308.9     5.3305       6    0.50217
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## ######################## Model Fit Indices ############################
##         chisq.scaled df.scaled pvalue.scaled rmsea.robust cfi.robust
tli.robust
## modmodc    1078.541†       500          .000        .055       .927†
.912
## modmodw    1104.054        519          .000        .055       .925
.913
## modmods    1126.155        535          .000        .054       .925
.916
## modmodr    1132.463        541          .000        .054†      .925
.917†
##          srmr        aic        bic
## modmodc .051† 73859.514  74815.271
## modmodw .053  73863.244  74728.204
## modmods .053  73850.167  74638.667
## modmodr .053  73843.503† 74603.330†
##
## ################### Differences in Fit Indices ########################
##                   df.scaled rmsea.robust cfi.robust tli.robust  srmr
aic
## modmodw - modmodc        19        0.000     -0.002      0.001 0.001
3.730
## modmods - modmodw        16       -0.001      0.000      0.002 0.000 -
13.076
## modmodr - modmods         6        0.000      0.000      0.001 0.000  -
6.664
##                       bic
## modmodw - modmodc -87.067
## modmods - modmodw -89.537
## modmodr - modmods -35.337
```

JOURNAL FOR DERADICALIZATION

Summer 2022
No. 31
ISSN: 2363-9849

About the JD Journal for Deradicalization

The JD Journal for Deradicalization is the world's only peer reviewed periodical for the theory and practice of deradicalization with a wide international audience. Named an "essential journal of our times" (Cheryl LaGuardia, Harvard University) the JD's editorial board of expert advisors includes some of the most renowned scholars in the field of deradicalization studies, such as Prof. Dr. John G. Horgan (Georgia State University); Prof. Dr. Tore Bjørgo (Norwegian Police University College); Prof. Dr. Mark Dechesne (Leiden University); Prof. Dr. Cynthia Miller-Idriss (American University Washington D.C.); Prof. Dr. Julie Chernov Hwang (Goucher College); Prof. Dr. Marco Lombardi, (Università Cattolica del Sacro Cuore Milano); Dr. Paul Jackson (University of Northampton); Professor Michael Freeden, (University of Nottingham); Professor Hamed El-Sa'id (Manchester Metropolitan University); Prof. Sadeq Rahimi (University of Saskatchewan, Harvard Medical School), Dr. Omar Ashour (University of Exeter), Prof. Neil Ferguson (Liverpool Hope University), Prof. Sarah Marsden (Lancaster University), Prof. Maura Conway (Dublin City University), Dr. Kurt Braddock (American University Washington D.C.), Dr. Michael J. Williams (The Science of P/CVE), Dr. Mary Beth Altier (New York University) and Dr. Aaron Y. Zelin (Washington Institute for Near East Policy), Prof. Dr. Adrian Cherney (University of Queensland).

For more information please see: www.journal-derad.com

Twitter: @JD_JournalDerad
Facebook: www.facebook.com/deradicalisation

The JD Journal for Deradicalization is a proud member of the Directory of Open Access Journals (DOAJ).

ISSN: 2363-9849