

title: "R script OSMASEM for Mike" author: "Laurent B" date: "02/09/2020" output: pdf\_document:  
default html\_document: default

```
#### Package selection ####
```

```
library(OpenMx)  
library(metaSEM)
```

```
## "SLSQP" is set as the default optimizer in OpenMx.  
## mxOption(NULL, "Gradient algorithm") is set at "central".  
## mxOption(NULL, "Optimality tolerance") is set at "6.3e-14".  
## mxOption(NULL, "Gradient iterations") is set at "2".
```

```
library(lavaan)
```

```
## This is lavaan 0.6-7  
## lavaan is BETA software! Please report any bugs.
```

```
##  
## Attaching package: 'lavaan'  
## The following object is masked from 'package:OpenMx':  
##  
## vech
```

```
library(tidyr)  
library(semPlot)
```

```
## Registered S3 methods overwritten by 'huge':  
## method from  
## plot.sim BDgraph  
## print.sim BDgraph
```

```
library(rmarkdown)  
library(tinytex)
```

```
#### DATA: correlation Matrix ####
```

```
rowcor<- matrix(c(1,.19,.29,-.13,NA,-.07,NA,NA,1,-.38,.27,NA,-.02,NA,NA,1,-.04,NA,.03,NA,NA,1,NA,.19,NA,  
1,.50,.61,-.15,NA,.50,NA,NA,1,-.03,.16,NA,.31,NA,NA,1,-.41,NA,.07,NA,NA,1,NA,.10,NA,NA,  
1,.024,-.043,-.188,-.066,-.334,.092,.34,1,-.637,-.212,-.381,.051,-.275,-.479,1,.472,.  
1,.245,.442,-.372,.176,.176,.121,.24,1,.358,-.136,.375,.090,.277,.175,1,-.088,.304,.2  
1,.125,-.085,-.022,.121,-.095,.069,-.036,1,-.464,-.124,-.232,-.066,-.244,-.017,1,.347  
1,.308,.054,-.127,.106,.221,.035,.161,1,.054,-.127,.137,.153,.017,.219,1,.064,.010,.2  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,-.12,NA,NA,-.05,NA,NA,1,NA,NA,-.31,NA,NA,NA,NA,NA,NA,NA,  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,-.32,NA,NA,.39,NA,NA,1,NA,NA,.07,NA,NA,NA,NA,NA,NA,NA,  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,-.01,NA,NA,-.10,NA,NA,1,NA,NA,-.52,NA,NA,NA,NA,NA,NA,NA,  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,-.28,NA,NA,-.29,NA,NA,1,NA,NA,-.26,NA,NA,NA,NA,NA,NA,NA,  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,NA,NA,NA,NA,NA,-.01,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,NA,NA,NA,NA,NA,-.15,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,  
1,.11,.70,-.15,NA,NA,.13,.29,1,-.05,.37,NA,NA,-.08,.02,1,-.24,NA,NA,.19,.35,1,NA,NA,-  
NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,1,.24,NA,.36,.03,.28,NA,1,NA,.29,.08,.25,NA,NA,NA,NA,NA,NA,NA,  
1,NA,NA,NA,NA,-.07,-.34,.25,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,  
1,.41,.52,-.11,NA,.15,NA,NA,1,.19,.27,NA,.32,NA,NA,1,-.07,NA,.24,NA,NA,1,NA,.19,NA,NA,  
1,.12,.63,.02,NA,.00,NA,NA,1,-.05,.22,NA,.21,NA,NA,1,.05,NA,.01,NA,NA,1,NA,.03,NA,NA,  
1,.12,.75,NA,NA,NA,.20,NA,1,-.05,NA,NA,NA,-.17,NA,1,NA,NA,NA,.22,NA,NA,NA,NA,NA,NA,NA,
```

```

1, .33, .74, -.52, NA, NA, NA, -.12, 1, .17, -.36, NA, NA, NA, -.36, 1, -.61, NA, NA, NA, .00, 1, NA, NA, NA,
1, .28, NA, NA, NA, NA, .00, NA, 1, NA, NA, NA, NA, .17, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .14, .42, NA, .06, NA, .12, NA, 1, -.15, NA, -.21, NA, -.16, NA, 1, NA, .23, NA, .19, NA, NA, NA, NA, NA, NA,
1, .26, .42, -.27, NA, .20, NA, .19, 1, .05, .08, NA, .04, NA, .21, 1, -.32, NA, .32, NA, .14, 1, NA, -.12, NA,
1, .441, .556, -.282, NA, .284, NA, .294, 1, .330, .044, NA, .242, NA, .199, 1, -.311, NA, .434, NA, .489,
NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, 1, NA, NA, .52, .35, .38, NA, NA, NA, NA, NA, NA,
1, -.091, .683, -.137, NA, -.138, -.004, NA, 1, -.160, .292, NA, .311, .380, NA, 1, -.143, NA, -.195, -.
1, -.11, .30, NA, NA, NA, .01, NA, 1, -.22, NA, NA, NA, .13, NA, 1, NA, NA, NA, -.002, NA, NA, NA, NA, NA,
1, -.057, .588, -.562, NA, NA, -.004, -.054, 1, -.270, -.421, NA, NA, .001, .014, 1, -.421, NA, NA, .016,
1, .424, .773, -.472, NA, NA, .296, .037, 1, .383, -.079, NA, NA, .266, .277, 1, -.452, NA, NA, .266, -.0
1, NA, NA, NA, .03, -.03, NA, .02, 1, NA, NA, -.27, -.22, NA, -.02, 1, NA, .19, .23, NA, .02, 1, -.17, -.06,
1, NA, NA, NA, .32, .20, NA, .08, 1, NA, NA, .32, .38, NA, .01, 1, NA, .27, .23, NA, .03, 1, -.09, -.11, NA,
1, NA, NA, NA, NA, NA, NA, .189, 1, NA, NA, NA, NA, NA, .1913, 1, NA, NA, NA, NA, .0089, NA, NA, NA, NA, NA,
1, NA, NA, NA, NA, .348, NA, NA, 1, NA, NA, NA, .00, NA, NA, 1, NA, NA, .126, NA, NA, NA, NA, NA, NA, NA,
1, NA, NA, NA, NA, .333, NA, NA, 1, NA, NA, NA, .118, NA, NA, 1, NA, NA, .197, NA, NA, NA, NA, NA, NA, NA,
1, -.21, .45, NA, NA, -.37, .13, NA, 1, -.25, NA, NA, .06, -.37, NA, 1, NA, NA, .33, .22, NA, NA, NA, NA, NA,
1, NA, NA, NA, NA, NA, NA, NA, 1, .27, NA, NA, NA, .10, NA, 1, NA, NA, NA, .61, NA, NA, NA, NA, NA, NA, NA,
1, NA, NA, NA, NA, NA, -.01, NA, 1, NA, NA, NA, NA, -.33, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .65, .70, NA, NA, .32, NA, NA, 1, .54, NA, NA, .41, NA, NA, 1, NA, NA, .43, NA, NA, NA, NA, NA, NA, NA,
NA, NA, NA, NA, NA, NA, NA, NA, 1, NA, NA, NA, NA, NA, -.21, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .04, .38, NA, -.03, NA, NA, NA, 1, .25, NA, -.57, NA, NA, NA, 1, NA, -.25, NA, NA, NA, NA, NA, NA, NA,
1, .27, .77, -.25, .01, NA, NA, NA, 1, .24, .28, .21, NA, NA, NA, 1, -.08, .03, NA, NA, NA, 1, .17, NA, NA,
1, .37, .65, -.54, .06, NA, NA, NA, 1, .31, -.14, .35, NA, NA, NA, 1, -.40, .32, NA, NA, NA, 1, -.02, NA, NA,
1, .28, .82, NA, NA, NA, .17, .23, 1, .13, NA, NA, NA, -.05, .32, 1, NA, NA, NA, .22, .31, NA, NA, NA, NA,
1, NA, NA, NA, .37, .53, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .08, .86, -.60, NA, NA, NA, NA, 1, -.18, -.07, .33, NA, NA, NA, 1, -.45, NA, NA, NA, NA, 1, NA, NA, NA,
1, .09, .75, -.70, NA, NA, NA, NA, 1, -.15, .02, .265, NA, NA, NA, 1, -.52, NA, NA, NA, NA, 1, NA, NA, NA,
1, .02, .22, NA, NA, NA, -.07, NA, 1, -.16, NA, NA, NA, -.05, NA, 1, NA, NA, NA, .25, NA, NA, NA, NA, NA,
1, .36, .53, -.03, NA, NA, .16, NA, 1, .11, -.05, NA, NA, .01, NA, 1, .05, NA, NA, .26, NA, 1, NA, NA, .05, NA
1, NA, NA, NA, NA, .10, .16, .02, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .65, .78, -.45, .03, NA, .06, NA, 1, .58, -.18, .21, NA, .31, NA, 1, -.37, .19, NA, .17, NA, 1, .03, NA,
1, NA, NA, NA, .069, NA, -.087, NA, 1, NA, NA, .071, NA, -.025, NA, 1, NA, .0829, NA, .148, NA, NA, NA, NA,
1, NA, NA, NA, .039, NA, -.028, NA, 1, NA, NA, .160, NA, -.047, NA, 1, NA, .0551, NA, .102, NA, NA, NA, NA,
1, .51, .34, .13, NA, .39, NA, NA, 1, .24, -.06, NA, .43, NA, NA, 1, .19, NA, .13, NA, NA, 1, NA, .07, NA, NA,
1, .37, NA, NA, -.06, .21, -.03, .01, 1, NA, NA, .00, -.14, -.09, -.08, NA, NA, NA, NA, NA, NA, NA, NA, NA,
1, .40, .23, .84, -.14, NA, .32, NA, 1, .32, .04, .23, NA, .15, NA, 1, .34, .12, NA, -.10, NA, 1, -.05, NA,
1, NA, NA, NA, NA, .131, NA, NA, 1, NA, NA, NA, .17, NA, NA, 1, NA, NA, .122, NA, NA, 1, NA, .098, NA, NA, NA,
1, NA, NA, NA, NA, NA, NA, .397, 1, NA, NA, NA, NA, NA, .221, NA, NA, NA, NA, NA, .297, 1, NA, NA, NA, -.274, NA,
1, NA, NA, NA, NA, NA, NA, .154, 1, NA, NA, NA, NA, NA, .290, 1, NA, NA, NA, NA, .262, 1, NA, NA, NA, .058, NA,

```

```
ncol= 36, byrow = TRUE)
```

```
#### Put variables names ####
```

```
nvar<- 8
```

```
varnames<-c("Loc", "stab", "pc", "oc", "expec", "selfp", "mot", "achiev")
```

```
labels<-list(varnames, varnames)
```

```
cormatrices<-list()
```

```
for (i in 1:nrow(rowcor)) {
```

```
  cormatrices[[i]]<-vec2symMat(as.matrix(rowcor[i,1:36]),
                              diag=TRUE)
```

```
  dimnames(cormatrices[[i]])<-labels
```

```
}
```

```
#### Put NA on diagonal if variable is missing ####
```

```
for (i in 1:length(cormatrices)){
```

```
  for (j in 1:nrow(cormatrices[[i]])){
```

```

if (sum(is.na(cormatrices [[i]][j,]))==nvar-1)
{cormatrices[[i]][j,j]<-NA}
}}

#### Put NA on diag for var with least present correlations ####
for(i in 1:length(cormatrices)){
  for (j in 1:nrow(cormatrices[[i]])){
    for (k in 1:nvar){
      if (is.na(cormatrices[[i]][j,k])==TRUE)
        &is.na(cormatrices[[i]][j,j])!=TRUE
        &is.na(cormatrices[[i]][k,k])!=TRUE) {
        if(sum(is.na(cormatrices[[i]][j,])>sum(is.na(cormatrices[[i]][k,]))
        {cormatrices[[i]][k,k]<-NA}
        if (sum(is.na(cormatrices[[i]][j,])<=sum(is.na(cormatrices[[i]][k,]))
        {cormatrices[[i]][j,j]<-NA}
        }}}

#### DATA: sample size vector ####
mydata.n <- c(20,20,58,62,147,161,142,142,46,51,301,301,389,100,162,130,174,479,48,84,125,500,192,297,1

#### Combine everything in an object ####
mydata <- list(data=cormatrices, n=mydata.n)

#### MODERATORS ANALYSES ####
# MODERATOR : EVENT VALENCE
# -1 = failure; 1 = other
evval<-c(-1,1,-1,1,-1,1,-1,1,-1,1,-1,-1,1,1,1,1,-1,-1,1,-1,1,1,1,-1,-1,-1,1,-1,1,1,-1,1,-1,-1,-1,1,-
# Combining all data
mydata <- list(data=cormatrices, n=mydata.n,evval=evval)
mydata

```

```

## $data
## $data[[1]]
##      Loc stab  pc   oc expec selfp mot  achiev
## Loc    1.00  0.19  0.29 -0.13  NA -0.07  NA    NA
## stab   0.19  1.00 -0.38  0.27   NA -0.02  NA    NA
## pc     0.29 -0.38  1.00 -0.04   NA  0.03  NA    NA
## oc    -0.13  0.27 -0.04  1.00   NA  0.19  NA    NA
## expec  NA    NA   NA   NA    NA  NA   NA   NA
## selfp -0.07 -0.02  0.03  0.19   NA  1.00  NA    NA
## mot    NA    NA   NA   NA    NA  NA   NA   NA
## achiev NA    NA   NA   NA    NA  NA   NA   NA
##
## $data[[2]]
##      Loc stab  pc   oc expec selfp mot  achiev
## Loc    1.00  0.50  0.61 -0.15  NA  0.50  NA    NA
## stab   0.50  1.00 -0.03  0.16   NA  0.31  NA    NA
## pc     0.61 -0.03  1.00 -0.41   NA  0.07  NA    NA
## oc    -0.15  0.16 -0.41  1.00   NA  0.10  NA    NA
## expec  NA    NA   NA   NA    NA  NA   NA   NA
## selfp  0.50  0.31  0.07  0.10   NA  1.00  NA    NA
## mot    NA    NA   NA   NA    NA  NA   NA   NA
## achiev NA    NA   NA   NA    NA  NA   NA   NA

```

```

##
## $data[[3]]
##      Loc  stab  pc  oc  expec  selfp  mot  achiev
## Loc    1.000  0.024 -0.043 -0.188 -0.066 -0.334  0.092  0.340
## stab   0.024  1.000 -0.637 -0.212 -0.381  0.051 -0.275 -0.479
## pc     -0.043 -0.637  1.000  0.472  0.416  0.148  0.261  0.498
## oc     -0.188 -0.212  0.472  1.000  0.112  0.125  0.082 -0.052
## expec  -0.066 -0.381  0.416  0.112  1.000  0.021  0.252  0.153
## selfp  -0.334  0.051  0.148  0.125  0.021  1.000 -0.172 -0.233
## mot     0.092 -0.275  0.261  0.082  0.252 -0.172  1.000  0.209
## achiev  0.340 -0.479  0.498 -0.052  0.153 -0.233  0.209  1.000
##
## $data[[4]]
##      Loc  stab  pc  oc  expec  selfp  mot  achiev
## Loc    1.000  0.245  0.442 -0.372  0.176  0.176  0.121  0.240
## stab   0.245  1.000  0.358 -0.136  0.375  0.090  0.277  0.175
## pc     0.442  0.358  1.000 -0.088  0.304  0.264  0.172  0.192
## oc    -0.372 -0.136 -0.088  1.000 -0.048 -0.070  0.092 -0.085
## expec  0.176  0.375  0.304 -0.048  1.000  0.344  0.429  0.301
## selfp  0.176  0.090  0.264 -0.070  0.344  1.000  0.131 -0.012
## mot     0.121  0.277  0.172  0.092  0.429  0.131  1.000 -0.138
## achiev  0.240  0.175  0.192 -0.085  0.301 -0.012 -0.138  1.000
##
## $data[[5]]
##      Loc  stab  pc  oc  expec  selfp  mot  achiev
## Loc    1.000  0.125 -0.085 -0.022  0.121 -0.095  0.069 -0.036
## stab   0.125  1.000 -0.464 -0.124 -0.232 -0.066 -0.244 -0.017
## pc    -0.085 -0.464  1.000  0.347  0.236  0.092  0.174  0.055
## oc    -0.022 -0.124  0.347  1.000  0.034  0.037  0.046 -0.007
## expec  0.121 -0.232  0.236  0.034  1.000 -0.077  0.263  0.321
## selfp -0.095 -0.066  0.092  0.037 -0.077  1.000  0.087 -0.018
## mot     0.069 -0.244  0.174  0.046  0.263  0.087  1.000  0.282
## achiev -0.036 -0.017  0.055 -0.007  0.321 -0.018  0.282  1.000
##
## $data[[6]]
##      Loc  stab  pc  oc  expec  selfp  mot  achiev
## Loc    1.000  0.308  0.054 -0.127  0.106  0.221  0.035  0.161
## stab   0.308  1.000  0.054 -0.127  0.137  0.153  0.017  0.219
## pc     0.054  0.054  1.000  0.064  0.010  0.235  0.043  0.143
## oc    -0.127 -0.127  0.064  1.000 -0.017 -0.032  0.214 -0.264
## expec  0.106  0.137  0.010 -0.017  1.000  0.285  0.184 -0.153
## selfp  0.221  0.153  0.235 -0.032  0.285  1.000  0.051 -0.007
## mot     0.035  0.017  0.043  0.214  0.184  0.051  1.000 -0.339
## achiev  0.161  0.219  0.143 -0.264 -0.153 -0.007 -0.339  1.000
##
## $data[[7]]
##      Loc  stab  pc  oc  expec  selfp  mot  achiev
## Loc    NA    NA    NA NA    NA    NA    NA    NA
## stab   NA    1.00 -0.12 NA    NA -0.05    NA    NA
## pc     NA -0.12  1.00 NA    NA -0.31    NA    NA
## oc     NA    NA    NA NA    NA    NA    NA    NA
## expec  NA    NA    NA NA    NA    NA    NA    NA
## selfp  NA -0.05 -0.31 NA    NA  1.00    NA    NA
## mot     NA    NA    NA NA    NA    NA    NA    NA

```

```

## achiev NA NA NA NA NA NA NA NA
##
## $data[[8]]
##      Loc stab pc oc expec selfp mot achiev
## Loc   NA  NA  NA NA  NA  NA  NA  NA
## stab  NA 1.00 -0.32 NA  NA  0.39 NA  NA
## pc    NA -0.32 1.00 NA  NA  0.07 NA  NA
## oc    NA  NA  NA NA  NA  NA  NA  NA
## expec NA  NA  NA NA  NA  NA  NA  NA
## selfp NA 0.39 0.07 NA  NA  1.00 NA  NA
## mot   NA  NA  NA NA  NA  NA  NA  NA
## achiev NA  NA  NA NA  NA  NA  NA  NA
##
## $data[[9]]
##      Loc stab pc oc expec selfp mot achiev
## Loc   NA  NA  NA NA  NA  NA  NA  NA
## stab  NA 1.00 -0.01 NA  NA -0.10 NA  NA
## pc    NA -0.01 1.00 NA  NA -0.52 NA  NA
## oc    NA  NA  NA NA  NA  NA  NA  NA
## expec NA  NA  NA NA  NA  NA  NA  NA
## selfp NA -0.10 -0.52 NA  NA  1.00 NA  NA
## mot   NA  NA  NA NA  NA  NA  NA  NA
## achiev NA  NA  NA NA  NA  NA  NA  NA
##
## $data[[10]]
##      Loc stab pc oc expec selfp mot achiev
## Loc   NA  NA  NA NA  NA  NA  NA  NA
## stab  NA 1.00 -0.28 NA  NA -0.29 NA  NA
## pc    NA -0.28 1.00 NA  NA -0.26 NA  NA
## oc    NA  NA  NA NA  NA  NA  NA  NA
## expec NA  NA  NA NA  NA  NA  NA  NA
## selfp NA -0.29 -0.26 NA  NA  1.00 NA  NA
## mot   NA  NA  NA NA  NA  NA  NA  NA
## achiev NA  NA  NA NA  NA  NA  NA  NA
##
## $data[[11]]
##      Loc stab pc oc expec selfp mot achiev
## Loc   NA  NA NA NA  NA  NA  NA  NA
## stab  NA 1.00 NA NA  NA  NA  NA -0.01
## pc    NA  NA NA NA  NA  NA  NA  NA
## oc    NA  NA NA NA  NA  NA  NA  NA
## expec NA  NA NA NA  NA  NA  NA  NA
## selfp NA  NA NA NA  NA  NA  NA  NA
## mot   NA  NA NA NA  NA  NA  NA  NA
## achiev NA -0.01 NA NA  NA  NA  NA  1.00
##
## $data[[12]]
##      Loc stab pc oc expec selfp mot achiev
## Loc   NA  NA NA NA  NA  NA  NA  NA
## stab  NA 1.00 NA NA  NA  NA  NA -0.15
## pc    NA  NA NA NA  NA  NA  NA  NA
## oc    NA  NA NA NA  NA  NA  NA  NA
## expec NA  NA NA NA  NA  NA  NA  NA
## selfp NA  NA NA NA  NA  NA  NA  NA

```

```

## mot      NA      NA NA NA      NA      NA NA      NA
## achiev   NA -0.15 NA NA      NA      NA NA      1.00
##
## $data[[13]]
##          Loc stab   pc   oc  expec selfp   mot  achiev
## Loc      1.00  0.11  0.70 -0.15    NA    NA  0.13  0.29
## stab     0.11  1.00 -0.05  0.37    NA    NA -0.08  0.02
## pc       0.70 -0.05  1.00 -0.24    NA    NA  0.19  0.35
## oc      -0.15  0.37 -0.24  1.00    NA    NA -0.27 -0.20
## expec     NA    NA    NA    NA    NA    NA    NA    NA
## selfp     NA    NA    NA    NA    NA    NA    NA    NA
## mot      0.13 -0.08  0.19 -0.27    NA    NA  1.00  0.22
## achiev   0.29  0.02  0.35 -0.20    NA    NA  0.22  1.00
##
## $data[[14]]
##          Loc stab   pc oc  expec selfp   mot  achiev
## Loc      NA    NA    NA NA    NA    NA    NA    NA
## stab     NA  1.00  0.24 NA  0.36  0.03  0.28    NA
## pc       NA  0.24  1.00 NA  0.29  0.08  0.25    NA
## oc       NA    NA    NA NA    NA    NA    NA    NA
## expec     NA  0.36  0.29 NA    NA    NA    NA    NA
## selfp     NA  0.03  0.08 NA    NA    NA    NA    NA
## mot      NA  0.28  0.25 NA    NA    NA    NA    NA
## achiev   NA    NA    NA NA    NA    NA    NA    NA
##
## $data[[15]]
##          Loc stab pc oc  expec selfp   mot  achiev
## Loc      1.00  NA NA NA    NA -0.07 -0.34  0.25
## stab     NA    NA NA NA    NA    NA    NA    NA
## pc       NA    NA NA NA    NA    NA    NA    NA
## oc       NA    NA NA NA    NA    NA    NA    NA
## expec     NA    NA NA NA    NA    NA    NA    NA
## selfp   -0.07  NA NA NA    NA  1.00 -0.13 -0.07
## mot     -0.34  NA NA NA    NA -0.13  1.00 -0.23
## achiev   0.25  NA NA NA    NA -0.07 -0.23  1.00
##
## $data[[16]]
##          Loc stab   pc   oc  expec selfp mot  achiev
## Loc      1.00  0.41  0.52 -0.11    NA  0.15  NA    NA
## stab     0.41  1.00  0.19  0.27    NA  0.32  NA    NA
## pc       0.52  0.19  1.00 -0.07    NA  0.24  NA    NA
## oc      -0.11  0.27 -0.07  1.00    NA  0.19  NA    NA
## expec     NA    NA    NA    NA    NA    NA  NA    NA
## selfp   0.15  0.32  0.24  0.19    NA  1.00  NA    NA
## mot      NA    NA    NA    NA    NA    NA  NA    NA
## achiev   NA    NA    NA    NA    NA    NA  NA    NA
##
## $data[[17]]
##          Loc stab   pc   oc  expec selfp mot  achiev
## Loc      1.00  0.12  0.63  0.02    NA  0.00  NA    NA
## stab     0.12  1.00 -0.05  0.22    NA  0.21  NA    NA
## pc       0.63 -0.05  1.00  0.05    NA  0.01  NA    NA
## oc       0.02  0.22  0.05  1.00    NA  0.03  NA    NA
## expec     NA    NA    NA    NA    NA    NA  NA    NA

```

```

## selfp 0.00 0.21 0.01 0.03 NA 1.00 NA NA
## mot NA NA NA NA NA NA NA NA
## achiev NA NA NA NA NA NA NA NA
##
## $data[[18]]
## Loc stab pc oc expec selfp mot achiev
## Loc 1.00 0.12 0.75 NA NA NA 0.20 NA
## stab 0.12 1.00 -0.05 NA NA NA -0.17 NA
## pc 0.75 -0.05 1.00 NA NA NA 0.22 NA
## oc NA NA NA NA NA NA NA NA
## expec NA NA NA NA NA NA NA NA
## selfp NA NA NA NA NA NA NA NA
## mot 0.20 -0.17 0.22 NA NA NA 1.00 NA
## achiev NA NA NA NA NA NA NA NA
##
## $data[[19]]
## Loc stab pc oc expec selfp mot achiev
## Loc 1.00 0.33 0.74 -0.52 NA NA NA -0.12
## stab 0.33 1.00 0.17 -0.36 NA NA NA -0.36
## pc 0.74 0.17 1.00 -0.61 NA NA NA 0.00
## oc -0.52 -0.36 -0.61 1.00 NA NA NA 0.13
## expec NA NA NA NA NA NA NA NA
## selfp NA NA NA NA NA NA NA NA
## mot NA NA NA NA NA NA NA NA
## achiev -0.12 -0.36 0.00 0.13 NA NA NA 1.00
##
## $data[[20]]
## Loc stab pc oc expec selfp mot achiev
## Loc 1.00 0.28 NA NA NA NA 0.00 NA
## stab 0.28 1.00 NA NA NA NA 0.17 NA
## pc NA NA NA NA NA NA NA NA
## oc NA NA NA NA NA NA NA NA
## expec NA NA NA NA NA NA NA NA
## selfp NA NA NA NA NA NA NA NA
## mot 0.00 0.17 NA NA NA NA 1.00 NA
## achiev NA NA NA NA NA NA NA NA
##
## $data[[21]]
## Loc stab pc oc expec selfp mot achiev
## Loc 1.00 0.14 0.42 NA 0.06 NA 0.12 NA
## stab 0.14 1.00 -0.15 NA -0.21 NA -0.16 NA
## pc 0.42 -0.15 1.00 NA 0.23 NA 0.19 NA
## oc NA NA NA NA NA NA NA NA
## expec 0.06 -0.21 0.23 NA 1.00 NA 0.35 NA
## selfp NA NA NA NA NA NA NA NA
## mot 0.12 -0.16 0.19 NA 0.35 NA 1.00 NA
## achiev NA NA NA NA NA NA NA NA
##
## $data[[22]]
## Loc stab pc oc expec selfp mot achiev
## Loc 1.00 0.26 0.42 -0.27 NA 0.20 NA 0.19
## stab 0.26 1.00 0.05 0.08 NA 0.04 NA 0.21
## pc 0.42 0.05 1.00 -0.32 NA 0.32 NA 0.14
## oc -0.27 0.08 -0.32 1.00 NA -0.12 NA 0.00

```

```

## expec      NA  NA      NA  NA      NA  NA  NA      NA
## selfp      0.20 0.04  0.32 -0.12  NA  1.00  NA  0.55
## mot        NA  NA      NA  NA      NA  NA  NA      NA
## achiev     0.19 0.21  0.14  0.00  NA  0.55  NA  1.00
##
## $data[[23]]
##          Loc  stab      pc      oc expec  selfp  mot  achiev
## Loc      1.000 0.441  0.556 -0.282  NA  0.284  NA  0.294
## stab     0.441 1.000  0.330  0.044  NA  0.242  NA  0.199
## pc       0.556 0.330  1.000 -0.311  NA  0.434  NA  0.489
## oc      -0.282 0.044 -0.311  1.000  NA -0.242  NA -0.184
## expec     NA  NA      NA      NA  NA  NA  NA  NA
## selfp     0.284 0.242  0.434 -0.242  NA  1.000  NA  0.437
## mot       NA  NA      NA      NA  NA  NA  NA  NA
## achiev    0.294 0.199  0.489 -0.184  NA  0.437  NA  1.000
##
## $data[[24]]
##          Loc  stab      pc  oc  expec  selfp  mot  achiev
## Loc      NA  NA      NA  NA  NA  NA  NA  NA
## stab     NA  NA      NA  NA  NA  NA  NA  NA
## pc       NA  NA  1.00  NA  NA  0.52  0.35  0.38
## oc       NA  NA      NA  NA  NA  NA  NA  NA
## expec    NA  NA      NA  NA  NA  NA  NA  NA
## selfp    NA  NA  0.52  NA  NA  1.00  NA  0.41
## mot      NA  NA  0.35  NA  NA  NA  NA  NA
## achiev   NA  NA  0.38  NA  NA  0.41  NA  1.00
##
## $data[[25]]
##          Loc  stab      pc      oc expec  selfp  mot  achiev
## Loc      1.000 -0.091  0.683 -0.137  NA -0.138 -0.004  NA
## stab    -0.091  1.000 -0.160  0.292  NA  0.311  0.380  NA
## pc       0.683 -0.160  1.000 -0.143  NA -0.195 -0.091  NA
## oc      -0.137  0.292 -0.143  1.000  NA  0.154  0.184  NA
## expec     NA  NA      NA      NA  NA  NA  NA  NA
## selfp    -0.138  0.311 -0.195  0.154  NA  1.000  0.534  NA
## mot     -0.004  0.380 -0.091  0.184  NA  0.534  1.000  NA
## achiev   NA  NA      NA      NA  NA  NA  NA  NA
##
## $data[[26]]
##          Loc  stab      pc  oc  expec  selfp  mot  achiev
## Loc      1.00 -0.11  0.300  NA  NA  NA  0.010  NA
## stab    -0.11  1.00 -0.220  NA  NA  NA  0.130  NA
## pc       0.30 -0.22  1.000  NA  NA  NA -0.002  NA
## oc       NA  NA      NA  NA  NA  NA  NA  NA
## expec    NA  NA      NA  NA  NA  NA  NA  NA
## selfp    NA  NA      NA  NA  NA  NA  NA  NA
## mot      0.01  0.13 -0.002  NA  NA  NA  1.000  NA
## achiev   NA  NA      NA  NA  NA  NA  NA  NA
##
## $data[[27]]
##          Loc  stab      pc      oc expec  selfp  mot  achiev
## Loc      1.000 -0.057  0.588 -0.562  NA  NA -0.004 -0.054
## stab    -0.057  1.000 -0.270 -0.421  NA  NA  0.001  0.014
## pc       0.588 -0.270  1.000 -0.421  NA  NA  0.016  0.041

```



```

## oc      -0.562 -0.421 -0.421  1.000   NA   NA  0.074  0.073
## expec   NA     NA     NA     NA     NA   NA   NA     NA
## selfp   NA     NA     NA     NA     NA   NA   NA     NA
## mot     -0.004  0.001  0.016  0.074   NA   NA  1.000  0.277
## achiev -0.054  0.014  0.041  0.073   NA   NA  0.277  1.000
##
## $data[[28]]
##      Loc  stab  pc  oc expec selfp  mot  achiev
## Loc    1.000  0.424  0.773 -0.472  NA   NA  0.296  0.037
## stab   0.424  1.000  0.383 -0.079  NA   NA  0.266  0.277
## pc     0.773  0.383  1.000 -0.452  NA   NA  0.266 -0.039
## oc    -0.472 -0.079 -0.452  1.000   NA   NA -0.068 -0.020
## expec  NA     NA     NA     NA     NA   NA   NA     NA
## selfp  NA     NA     NA     NA     NA   NA   NA     NA
## mot    0.296  0.266  0.266 -0.068  NA   NA  1.000  0.277
## achiev 0.037  0.277 -0.039 -0.020  NA   NA  0.277  1.000
##
## $data[[29]]
##      Loc  stab  pc  oc expec selfp  mot  achiev
## Loc    NA     NA  NA   NA  0.03 -0.03  NA   0.02
## stab   NA     NA  NA   NA -0.27 -0.22  NA  -0.02
## pc     NA     NA  NA   NA  0.19  0.23  NA   0.02
## oc     NA     NA  NA   1.00 -0.17 -0.06  NA   0.06
## expec  0.03 -0.27  0.19 -0.17  1.00  0.53  NA   0.06
## selfp -0.03 -0.22  0.23 -0.06  0.53  1.00  NA   0.40
## mot    NA     NA  NA   NA   NA   NA   NA   NA
## achiev 0.02 -0.02  0.02  0.06  0.06  0.40  NA   1.00
##
## $data[[30]]
##      Loc  stab  pc  oc expec selfp  mot  achiev
## Loc    NA     NA  NA   NA  0.32  0.20  NA   0.08
## stab   NA     NA  NA   NA  0.32  0.38  NA   0.01
## pc     NA     NA  NA   NA  0.27  0.23  NA   0.03
## oc     NA     NA  NA   1.00 -0.09 -0.11  NA  -0.13
## expec  0.32  0.32  0.27 -0.09  1.00  0.45  NA  -0.08
## selfp  0.20  0.38  0.23 -0.11  0.45  1.00  NA   0.40
## mot    NA     NA  NA   NA   NA   NA   NA   NA
## achiev 0.08  0.01  0.03 -0.13 -0.08  0.40  NA   1.00
##
## $data[[31]]
##      Loc  stab  pc  oc expec selfp  mot  achiev
## Loc    NA     NA  NA  NA   NA   NA   NA  0.1890
## stab   NA     NA  NA  NA   NA   NA   NA  0.1913
## pc     NA     NA  1.0000 NA   NA   NA   NA  0.0089
## oc     NA     NA  NA  NA   NA   NA   NA   NA
## expec  NA     NA  NA  NA   NA   NA   NA   NA
## selfp  NA     NA  NA  NA   NA   NA   NA   NA
## mot    NA     NA  NA  NA   NA   NA   NA   NA
## achiev 0.189  0.1913  0.0089 NA   NA   NA   NA  1.0000
##
## $data[[32]]
##      Loc  stab  pc  oc expec selfp  mot  achiev
## Loc    NA     NA  NA  NA   NA  0.348  NA   NA
## stab   NA     NA  NA  NA   NA  0.000  NA   NA

```

```

## pc      NA  NA 1.000 NA  NA 0.126 NA  NA
## oc      NA  NA  NA NA  NA  NA NA NA  NA
## expec   NA  NA  NA NA  NA  NA NA NA  NA
## selfp   0.348  0 0.126 NA  NA 1.000 NA  NA
## mot     NA  NA  NA NA  NA  NA NA NA  NA
## achiev  NA  NA  NA NA  NA  NA NA NA  NA
##
## $data[[33]]
##      Loc  stab  pc oc expec selfp mot achiev
## Loc    NA   NA  NA NA  NA 0.333 NA  NA
## stab   NA   NA  NA NA  NA 0.118 NA  NA
## pc     NA   NA 1.000 NA  NA 0.197 NA  NA
## oc     NA   NA  NA NA  NA  NA NA NA  NA
## expec  NA   NA  NA NA  NA  NA NA NA  NA
## selfp  0.333 0.118 0.197 NA  NA 1.000 NA  NA
## mot    NA   NA  NA NA  NA  NA NA NA  NA
## achiev NA   NA  NA NA  NA  NA NA NA  NA
##
## $data[[34]]
##      Loc  stab  pc oc expec selfp  mot achiev
## Loc    1.00 -0.21 0.45 NA  NA -0.37 0.13  NA
## stab  -0.21 1.00 -0.25 NA  NA 0.06 -0.37  NA
## pc     0.45 -0.25 1.00 NA  NA 0.33 0.22  NA
## oc     NA   NA  NA NA  NA  NA NA NA  NA
## expec  NA   NA  NA NA  NA  NA NA NA  NA
## selfp -0.37 0.06 0.33 NA  NA 1.00 0.15  NA
## mot    0.13 -0.37 0.22 NA  NA 0.15 1.00  NA
## achiev NA   NA  NA NA  NA  NA NA NA  NA
##
## $data[[35]]
##      Loc  stab  pc oc expec selfp  mot achiev
## Loc    NA   NA  NA NA  NA  NA NA NA  NA
## stab   NA 1.00 0.27 NA  NA  NA 0.10  NA
## pc     NA 0.27 1.00 NA  NA  NA 0.61  NA
## oc     NA  NA  NA NA  NA  NA NA NA  NA
## expec  NA  NA  NA NA  NA  NA NA NA  NA
## selfp  NA  NA  NA NA  NA  NA NA NA  NA
## mot    NA 0.10 0.61 NA  NA  NA 1.00  NA
## achiev NA  NA  NA NA  NA  NA NA NA  NA
##
## $data[[36]]
##      Loc  stab pc oc expec selfp  mot achiev
## Loc    NA   NA NA NA  NA  NA -0.01  NA
## stab   NA 1.00 NA NA  NA  NA -0.33  NA
## pc     NA   NA NA NA  NA  NA NA NA  NA
## oc     NA   NA NA NA  NA  NA NA NA  NA
## expec  NA   NA NA NA  NA  NA NA NA  NA
## selfp  NA   NA NA NA  NA  NA NA NA  NA
## mot   -0.01 -0.33 NA NA  NA  NA 1.00  NA
## achiev NA   NA NA NA  NA  NA NA NA  NA
##
## $data[[37]]
##      Loc  stab  pc oc expec selfp mot achiev
## Loc    1.00 0.65 0.70 NA  NA 0.32 NA  NA

```

```

## stab 0.65 1.00 0.54 NA NA 0.41 NA NA
## pc 0.70 0.54 1.00 NA NA 0.43 NA NA
## oc NA NA NA NA NA NA NA NA
## expec NA NA NA NA NA NA NA NA
## selfp 0.32 0.41 0.43 NA NA 1.00 NA NA
## mot NA NA NA NA NA NA NA NA
## achiev NA NA NA NA NA NA NA NA

```

```
## $data[[38]]
```

```

##      Loc stab pc oc expec selfp mot achiev
## Loc   NA   NA NA NA  NA   NA NA   NA
## stab  NA  1.00 NA NA  NA   NA NA  -0.21
## pc    NA   NA NA NA  NA   NA NA   NA
## oc    NA   NA NA NA  NA   NA NA   NA
## expec NA   NA NA NA  NA   NA NA   NA
## selfp NA   NA NA NA  NA   NA NA   NA
## mot   NA   NA NA NA  NA   NA NA   NA
## achiev NA -0.21 NA NA  NA   NA NA   1.00

```

```
## $data[[39]]
```

```

##      Loc stab pc oc expec selfp mot achiev
## Loc   1.00 0.04 0.38 NA -0.03  NA NA   NA
## stab  0.04 1.00 0.25 NA -0.57  NA NA   NA
## pc    0.38 0.25 1.00 NA -0.25  NA NA   NA
## oc    NA   NA  NA NA  NA   NA NA   NA
## expec -0.03 -0.57 -0.25 NA 1.00  NA NA   NA
## selfp NA   NA  NA NA  NA   NA NA   NA
## mot   NA   NA  NA NA  NA   NA NA   NA
## achiev NA   NA  NA NA  NA   NA NA   NA

```

```
## $data[[40]]
```

```

##      Loc stab pc oc expec selfp mot achiev
## Loc   1.00 0.27 0.77 -0.25 0.01  NA NA   NA
## stab  0.27 1.00 0.24 0.28 0.21  NA NA   NA
## pc    0.77 0.24 1.00 -0.08 0.03  NA NA   NA
## oc   -0.25 0.28 -0.08 1.00 0.17  NA NA   NA
## expec 0.01 0.21 0.03 0.17 1.00  NA NA   NA
## selfp NA   NA  NA NA  NA   NA NA   NA
## mot   NA   NA  NA NA  NA   NA NA   NA
## achiev NA   NA  NA NA  NA   NA NA   NA

```

```
## $data[[41]]
```

```

##      Loc stab pc oc expec selfp mot achiev
## Loc   1.00 0.37 0.65 -0.54 0.06  NA NA   NA
## stab  0.37 1.00 0.31 -0.14 0.35  NA NA   NA
## pc    0.65 0.31 1.00 -0.40 0.32  NA NA   NA
## oc   -0.54 -0.14 -0.40 1.00 -0.02  NA NA   NA
## expec 0.06 0.35 0.32 -0.02 1.00  NA NA   NA
## selfp NA   NA  NA NA  NA   NA NA   NA
## mot   NA   NA  NA NA  NA   NA NA   NA
## achiev NA   NA  NA NA  NA   NA NA   NA

```

```
## $data[[42]]
```

```

##      Loc stab pc oc expec selfp mot achiev

```

```

## Loc    1.00  0.28  0.82  NA    NA    NA    0.17  0.23
## stab   0.28  1.00  0.13  NA    NA    NA   -0.05  0.32
## pc     0.82  0.13  1.00  NA    NA    NA    0.22  0.31
## oc     NA    NA    NA  NA    NA    NA    NA    NA
## expec  NA    NA    NA  NA    NA    NA    NA    NA
## selfp  NA    NA    NA  NA    NA    NA    NA    NA
## mot    0.17 -0.05  0.22  NA    NA    NA    1.00  0.23
## achiev 0.23  0.32  0.31  NA    NA    NA    0.23  1.00
##
## $data[[43]]
##      Loc stab pc oc expec selfp mot achiev
## Loc    1.00  NA NA NA  0.37  0.53  NA    NA
## stab   NA    NA NA NA   NA   NA  NA    NA
## pc     NA    NA NA NA   NA   NA  NA    NA
## oc     NA    NA NA NA   NA   NA  NA    NA
## expec  0.37  NA NA NA  1.00  0.74  NA    NA
## selfp  0.53  NA NA NA  0.74  1.00  NA    NA
## mot    NA    NA NA NA   NA   NA  NA    NA
## achiev NA    NA NA NA   NA   NA  NA    NA
##
## $data[[44]]
##      Loc stab  pc  oc expec selfp mot achiev
## Loc    NA  0.08  0.86 -0.60  NA  NA  NA    NA
## stab   0.08  NA -0.18 -0.07  0.33  NA  NA    NA
## pc     0.86 -0.18  NA -0.45  NA  NA  NA    NA
## oc    -0.60 -0.07 -0.45  NA  NA  NA  NA    NA
## expec  NA  0.33  NA  NA  1.00  NA  NA  0.18
## selfp  NA  NA  NA  NA  NA  NA  NA    NA
## mot    NA  NA  NA  NA  NA  NA  NA    NA
## achiev NA  NA  NA  NA  0.18  NA  NA  1.00
##
## $data[[45]]
##      Loc  stab  pc  oc expec selfp mot achiev
## Loc    NA  0.090  0.75 -0.70  NA  NA  NA    NA
## stab   0.09  NA -0.15  0.02  0.265  NA  NA    NA
## pc     0.75 -0.150  NA -0.52  NA  NA  NA    NA
## oc    -0.70  0.020 -0.52  NA  NA  NA  NA    NA
## expec  NA  0.265  NA  NA  1.000  NA  NA  0.18
## selfp  NA  NA  NA  NA  NA  NA  NA    NA
## mot    NA  NA  NA  NA  NA  NA  NA    NA
## achiev NA  NA  NA  NA  0.180  NA  NA  1.00
##
## $data[[46]]
##      Loc  stab  pc oc expec selfp  mot achiev
## Loc    1.00  0.02  0.22 NA  NA  NA -0.07  NA
## stab   0.02  1.00 -0.16 NA  NA  NA -0.05  NA
## pc     0.22 -0.16  1.00 NA  NA  NA  0.25  NA
## oc     NA  NA  NA  NA  NA  NA  NA  NA
## expec  NA  NA  NA  NA  NA  NA  NA  NA
## selfp  NA  NA  NA  NA  NA  NA  NA  NA
## mot   -0.07 -0.05  0.25 NA  NA  NA  1.00  NA
## achiev NA  NA  NA  NA  NA  NA  NA  NA
##
## $data[[47]]

```

```

##          Loc stab pc oc expec selfp mot achiev
## Loc      1.00 0.36 0.53 -0.03 NA NA 0.16 NA
## stab     0.36 1.00 0.11 -0.05 NA NA 0.01 NA
## pc       0.53 0.11 1.00 0.05 NA NA 0.26 NA
## oc      -0.03 -0.05 0.05 1.00 NA NA 0.05 NA
## expec    NA NA NA NA NA NA NA NA
## selfp    NA NA NA NA NA NA NA NA
## mot      0.16 0.01 0.26 0.05 NA NA 1.00 NA
## achiev   NA NA NA NA NA NA NA NA
##
## $data[[48]]
##          Loc stab pc oc expec selfp mot achiev
## Loc      1.00 NA NA NA NA 0.10 0.16 0.02
## stab     NA NA NA NA NA NA NA NA
## pc       NA NA NA NA NA NA NA NA
## oc       NA NA NA NA NA NA NA NA
## expec    NA NA NA NA NA NA NA NA
## selfp    0.10 NA NA NA NA 1.00 0.19 0.07
## mot      0.16 NA NA NA NA 0.19 1.00 0.11
## achiev   0.02 NA NA NA NA 0.07 0.11 1.00
##
## $data[[49]]
##          Loc stab pc oc expec selfp mot achiev
## Loc      1.00 0.65 0.78 -0.45 0.03 NA 0.06 NA
## stab     0.65 1.00 0.58 -0.18 0.21 NA 0.31 NA
## pc       0.78 0.58 1.00 -0.37 0.19 NA 0.17 NA
## oc      -0.45 -0.18 -0.37 1.00 0.03 NA 0.06 NA
## expec    0.03 0.21 0.19 0.03 1.00 NA 0.67 NA
## selfp    NA NA NA NA NA NA NA NA
## mot      0.06 0.31 0.17 0.06 0.67 NA 1.00 NA
## achiev   NA NA NA NA NA NA NA NA
##
## $data[[50]]
##          Loc stab pc oc expec selfp mot achiev
## Loc      NA NA NA NA 0.0690 NA -0.087 NA
## stab     NA NA NA NA 0.0710 NA -0.025 NA
## pc       NA NA 1.0000 NA 0.0829 NA 0.148 NA
## oc       NA NA NA NA NA NA NA NA
## expec    0.069 0.071 0.0829 NA NA NA NA
## selfp    NA NA NA NA NA NA NA NA
## mot     -0.087 -0.025 0.1480 NA NA NA 1.000 NA
## achiev   NA NA NA NA NA NA NA NA
##
## $data[[51]]
##          Loc stab pc oc expec selfp mot achiev
## Loc      NA NA NA NA 0.0390 NA -0.028 NA
## stab     NA NA NA NA 0.1600 NA -0.047 NA
## pc       NA NA 1.0000 NA 0.0551 NA 0.102 NA
## oc       NA NA NA NA NA NA NA NA
## expec    0.039 0.160 0.0551 NA NA NA NA
## selfp    NA NA NA NA NA NA NA NA
## mot     -0.028 -0.047 0.1020 NA NA NA 1.000 NA
## achiev   NA NA NA NA NA NA NA NA
##

```

```

## $data[[52]]
##      Loc stab  pc   oc expec selfp mot  achiev
## Loc   1.00 0.51 0.34 0.13  NA  0.39  NA   NA
## stab  0.51 1.00 0.24 -0.06  NA  0.43  NA   NA
## pc    0.34 0.24 1.00 0.19  NA  0.13  NA   NA
## oc    0.13 -0.06 0.19 1.00  NA  0.07  NA   NA
## expec  NA   NA  NA   NA  NA   NA  NA   NA
## selfp 0.39 0.43 0.13 0.07  NA  1.00  NA   NA
## mot   NA   NA  NA   NA  NA   NA  NA   NA
## achiev NA   NA  NA   NA  NA   NA  NA   NA
##
## $data[[53]]
##      Loc stab pc oc expec selfp  mot  achiev
## Loc   1.00 0.37 NA NA -0.06 0.21 -0.03 0.01
## stab  0.37 1.00 NA NA 0.00 -0.14 -0.09 -0.08
## pc    NA   NA NA NA  NA   NA   NA   NA
## oc    NA   NA NA NA  NA   NA   NA   NA
## expec -0.06 0.00 NA NA 1.00 0.55 -0.09 0.54
## selfp 0.21 -0.14 NA NA 0.55 1.00 0.09 0.40
## mot   -0.03 -0.09 NA NA -0.09 0.09 1.00 0.79
## achiev 0.01 -0.08 NA NA 0.54 0.40 0.79 1.00
##
## $data[[54]]
##      Loc stab  pc   oc expec selfp  mot  achiev
## Loc   1.00 0.40 0.23 0.84 -0.14  NA  0.32  NA
## stab  0.40 1.00 0.32 0.04 0.23  NA  0.15  NA
## pc    0.23 0.32 1.00 0.34 0.12  NA -0.10  NA
## oc    0.84 0.04 0.34 1.00 -0.05  NA -0.03  NA
## expec -0.14 0.23 0.12 -0.05  NA  NA   NA   NA
## selfp  NA   NA  NA   NA  NA  NA   NA   NA
## mot   0.32 0.15 -0.10 -0.03  NA  NA  1.00  NA
## achiev NA   NA  NA   NA  NA  NA  NA   NA
##
## $data[[55]]
##      Loc stab  pc   oc expec selfp mot  achiev
## Loc   NA  NA  NA  NA  NA  NA 0.131  NA  NA
## stab  NA  NA  NA  NA  NA  NA 0.170  NA  NA
## pc    NA  NA  NA  NA  NA  NA 0.122  NA  NA
## oc    NA  NA  NA 1.000  NA 0.098  NA  NA
## expec  NA  NA  NA  NA  NA  NA  NA  NA  NA
## selfp 0.131 0.17 0.122 0.098  NA 1.000  NA  NA
## mot   NA  NA  NA  NA  NA  NA  NA  NA  NA
## achiev NA  NA  NA  NA  NA  NA  NA  NA  NA
##
## $data[[56]]
##      Loc stab  pc   oc expec selfp mot  achiev
## Loc   NA  NA  NA  NA  NA  NA  NA  NA 0.397
## stab  NA  NA  NA  NA  NA  NA  NA  NA 0.221
## pc    NA  NA  NA  NA  NA  NA  NA  NA 0.297
## oc    NA  NA  NA 1.000  NA  NA  NA  NA -0.274
## expec  NA  NA  NA  NA  NA  NA  NA  NA  NA
## selfp  NA  NA  NA  NA  NA  NA  NA  NA  NA
## mot   NA  NA  NA  NA  NA  NA  NA  NA  NA
## achiev 0.397 0.221 0.297 -0.274  NA  NA  NA 1.000

```

```
##
## $data[[57]]
##      Loc stab   pc   oc expec selfp mot achiev
## Loc      NA  NA   NA   NA   NA   NA  NA  0.154
## stab     NA  NA   NA   NA   NA   NA  NA  0.290
## pc       NA  NA   NA   NA   NA   NA  NA  0.262
## oc       NA  NA   NA 1.000   NA   NA  NA  0.058
## expec    NA  NA   NA   NA   NA   NA  NA   NA
## selfp    NA  NA   NA   NA   NA   NA  NA   NA
## mot      NA  NA   NA   NA   NA   NA  NA   NA
## achiev 0.154 0.29 0.262 0.058   NA   NA  NA  1.000
##
##
## $n
## [1] 20 20 58 62 147 161 142 142 46 51 301 301 389 100 162
## [16] 130 174 479 48 84 125 500 192 297 153 110 123 123 149 175
## [31] 1601 28 28 189 80 90 85 3348 196 162 162 176 198 585 621
## [46] 304 793 549 105 102 102 81 140 148 71 96 209
##
## $evval
## [1] -1 1 -1 1 -1 1 -1 1 -1 1 -1 -1 -1 1 1 1 1 -1 -1 1 -1 1 1 1 -1
## [26] -1 -1 1 -1 1 1 -1 1 -1 -1 -1 1 -1 -1 -1 1 1 1 1 1 1 1 1 -1
## [51] 1 1 1 1 1 1 1 1
```

```
##### Check correlation matrices for positive definiteness #####
```

```
pd_check <- is.pd(mydata$data)
sum(!is.na(pd_check))
```

```
## [1] 57
```

```
pd_check
```

```
## [1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [13] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [25] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [37] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
## [49] TRUE TRUE TRUE TRUE FALSE TRUE TRUE TRUE TRUE
```

```
##### Exclude non positive matrix (53) #####
```

```
mydata2 <- mydata$data[-c(53)]
mydata2.n <- mydata$n[-c(53)]
mydata2.evval <- mydata$evval[-c(53)]
mydata2 <- list(data=mydata2, n=mydata2.n, evval=mydata2.evval)
```

```
##### Missing data pattern #####
```

```
pattern.n(mydata2$data, mydata2.n)
```

```
##      Loc stab   pc   oc expec selfp mot achiev
## Loc  6408 6705 6621 4957 2052 3332 4734 4920
## stab 6705 10100 7182 4957 3160 2904 4203 8159
## pc   6621 7182 8134 4957 1954 3201 4326 4506
## oc   4957 4957 4957 4451 1329 2093 2262 2432
## expec 2052 3160 1954 1329 2906 950 658 1958
## selfp 3332 2904 3201 2093 950 4010 1481 2452
## mot  4734 4203 4326 2262 658 1481 4814 1950
## achiev 4920 8159 4506 2432 1958 2452 1950 10373
```

```
pattern.na(mydata2$data, show.na = T)
```

```
##      Loc stab pc oc expec selfp mot achiev
## Loc   23  24 25 33  41   34  33   38
## stab  24  16 19 33  39   32  33   37
## pc    25  19 15 33  41   31  34   39
## oc    33  33 33 30  46   41  45   42
## expec 41  39 41 46  42   49  50   48
## selfp 34  32 31 41  49   29  48   45
## mot   33  33 34 45  50   48  32   46
## achiev 38  37 39 42  48   45  46   32
```

```
pattern.na(mydata2$data, show.na = F)
```

```
##      Loc stab pc oc expec selfp mot achiev
## Loc   33  32 31 23  15   22  23   18
## stab  32  40 37 23  17   24  23   19
## pc    31  37 41 23  15   25  22   17
## oc    23  23 23 26  10   15  11   14
## expec 15  17 15 10  14    7  6    8
## selfp 22  24 25 15   7   27  8   11
## mot   23  23 22 11   6    8  24   10
## achiev 18  19 17 14   8   11  10   24
```

```
##### OMASEM TEST DATA PREPARATION #####
```

```
#Convert correlation matrices into a dataframe
```

```
my.df<-Cor2DataFrame(mydata2$data,mydata2$n,acov="weighted")
```

```
#Add the unstandardized moderator to the data
```

```
my.df$data<-data.frame(my.df$data,eval=mydata2$eval,check.names = F)
```

```
##head(my.df)##
```

```
## Display the pairwise no. of studies
```

```
pattern.na(my.df, show.na=FALSE, type="osmasem")
```

```
##      stab_Loc pc_Loc oc_Loc expec_Loc selfp_Loc mot_Loc achiev_Loc
## stab_Loc      30   30   30   31   33   32   32
## pc_Loc         30   29   29   30   32   32   31
## oc_Loc         30   29   21   24   26   30   24
## expec_Loc      31   30   24   10   22   24   19
## selfp_Loc      33   32   26   22   17   29   22
## mot_Loc        32   32   30   24   29   20   23
## achiev_Loc     32   31   24   19   22   23   13
## pc_stab        36   35   35   36   38   38   37
## oc_stab        30   29   21   24   26   30   24
## expec_stab     30   29   23   10   22   23   18
## selfp_stab     34   33   27   24   21   32   25
## mot_stab       32   32   30   24   31   22   25
## achiev_stab    33   32   25   20   25   26   16
## oc_pc          30   29   21   24   26   30   24
## expec_pc       30   29   23   10   22   23   18
## selfp_pc       37   36   30   27   24   35   28
## mot_pc         33   32   30   24   31   23   25
## achiev_pc      32   31   24   19   24   25   15
## expec_oc       32   31   23   12   22   24   18
```



## selfp_oc	33	32	24	21	20	30	22
## mot_oc	30	29	21	16	23	20	17
## achiev_oc	34	33	25	20	25	27	17
## selfp_expec	33	32	24	12	19	23	16
## mot_expec	30	29	22	10	19	20	15
## achiev_expec	34	33	25	14	21	24	17
## mot_selfp	32	31	24	14	17	20	15
## achiev_selfp	35	34	26	17	20	25	16
## achiev_mot	32	31	24	16	21	20	13
##	pc_stab	oc_stab	expec_stab	selfp_stab	mot_stab	achiev_stab	oc_pc
## stab_Loc	36	30	30	34	32	33	30
## pc_Loc	35	29	29	33	32	32	29
## oc_Loc	35	21	23	27	30	25	21
## expec_Loc	36	24	10	24	24	20	24
## selfp_Loc	38	26	22	21	31	25	26
## mot_Loc	38	30	23	32	22	26	30
## achiev_Loc	37	24	18	25	25	16	24
## pc_stab	35	35	35	35	37	38	35
## oc_stab	35	21	23	27	30	25	21
## expec_stab	35	23	9	23	23	19	23
## selfp_stab	35	27	23	18	32	26	27
## mot_stab	37	30	23	32	20	26	30
## achiev_stab	38	25	19	26	26	14	25
## oc_pc	35	21	23	27	30	25	21
## expec_pc	35	23	9	23	23	19	23
## selfp_pc	38	30	26	21	35	29	30
## mot_pc	37	30	23	32	22	26	30
## achiev_pc	37	24	18	25	25	16	24
## expec_oc	37	23	11	23	24	19	23
## selfp_oc	38	24	20	21	30	23	24
## mot_oc	35	21	15	24	20	18	21
## achiev_oc	39	25	19	26	27	18	25
## selfp_expec	38	24	12	21	23	17	24
## mot_expec	35	22	9	20	20	16	22
## achiev_expec	39	25	13	22	24	18	25
## mot_selfp	37	24	13	20	22	18	24
## achiev_selfp	40	26	16	23	27	19	26
## achiev_mot	37	24	15	24	22	16	24
##	expec_pc	selfp_pc	mot_pc	achiev_pc	expec_oc	selfp_oc	mot_oc
## stab_Loc	30	37	33	32	32	33	30
## pc_Loc	29	36	32	31	31	32	29
## oc_Loc	23	30	30	24	23	24	21
## expec_Loc	10	27	24	19	12	21	16
## selfp_Loc	22	24	31	24	22	20	23
## mot_Loc	23	35	23	25	24	30	20
## achiev_Loc	18	28	25	15	18	22	17
## pc_stab	35	38	37	37	37	38	35
## oc_stab	23	30	30	24	23	24	21
## expec_stab	9	26	23	18	11	20	15
## selfp_stab	23	21	32	25	23	21	24
## mot_stab	23	35	22	25	24	30	20
## achiev_stab	19	29	26	16	19	23	18
## oc_pc	23	30	30	24	23	24	21
## expec_pc	9	26	23	18	11	20	15

## selfp_pc	26	21	35	27	26	24	27
## mot_pc	23	35	20	25	24	30	20
## achiev_pc	18	27	25	13	18	22	17
## expec_oc	11	26	24	18	9	18	15
## selfp_oc	20	24	30	22	18	15	21
## mot_oc	15	27	20	17	15	21	11
## achiev_oc	19	29	27	17	17	21	18
## selfp_expec	12	24	23	16	10	16	14
## mot_expec	9	23	20	15	10	17	12
## achiev_expec	13	25	24	17	11	17	15
## mot_selfp	13	23	22	17	13	18	14
## achiev_selfp	16	25	27	17	14	18	18
## achiev_mot	15	27	22	15	15	21	14
##	achiev_oc	selfp_expec	mot_expec	achiev_expec	mot_selfp		
## stab_Loc	34	33	30	34	32		
## pc_Loc	33	32	29	33	31		
## oc_Loc	25	24	22	25	24		
## expec_Loc	20	12	10	14	14		
## selfp_Loc	25	19	19	21	17		
## mot_Loc	27	23	20	24	20		
## achiev_Loc	17	16	15	17	15		
## pc_stab	39	38	35	39	37		
## oc_stab	25	24	22	25	24		
## expec_stab	19	12	9	13	13		
## selfp_stab	26	21	20	22	20		
## mot_stab	27	23	20	24	22		
## achiev_stab	18	17	16	18	18		
## oc_pc	25	24	22	25	24		
## expec_pc	19	12	9	13	13		
## selfp_pc	29	24	23	25	23		
## mot_pc	27	23	20	24	22		
## achiev_pc	17	16	15	17	17		
## expec_oc	17	10	10	11	13		
## selfp_oc	21	16	17	17	18		
## mot_oc	18	14	12	15	14		
## achiev_oc	14	15	16	16	18		
## selfp_expec	15	7	9	9	11		
## mot_expec	16	9	6	10	10		
## achiev_expec	16	9	10	8	12		
## mot_selfp	18	11	10	12	8		
## achiev_selfp	17	12	13	13	13		
## achiev_mot	17	13	12	14	12		
##	achiev_selfp	achiev_mot					
## stab_Loc	35	32					
## pc_Loc	34	31					
## oc_Loc	26	24					
## expec_Loc	17	16					
## selfp_Loc	20	21					
## mot_Loc	25	20					
## achiev_Loc	16	13					
## pc_stab	40	37					
## oc_stab	26	24					
## expec_stab	16	15					
## selfp_stab	23	24					

```

## mot_stab          27          22
## achiev_stab      19          16
## oc_pc            26          24
## expec_pc         16          15
## selfp_pc         25          27
## mot_pc           27          22
## achiev_pc        17          15
## expec_oc         14          15
## selfp_oc         18          21
## mot_oc           18          14
## achiev_oc        17          17
## selfp_expec      12          13
## mot_expec        13          12
## achiev_expec     13          14
## mot_selfp        13          12
## achiev_selfp     11          15
## achiev_mot       15          10

```

```
pattern.na(my.df, show.na=TRUE, type=c("osmasem"))
```

```

##          stab_Loc pc_Loc oc_Loc expec_Loc selfp_Loc mot_Loc achiev_Loc
## stab_Loc          26    26    26    25    23    24    24
## pc_Loc             26    27    27    26    24    24    25
## oc_Loc             26    27    35    32    30    26    32
## expec_Loc          25    26    32    46    34    32    37
## selfp_Loc          23    24    30    34    39    27    34
## mot_Loc            24    24    26    32    27    36    33
## achiev_Loc         24    25    32    37    34    33    43
## pc_stab            20    21    21    20    18    18    19
## oc_stab            26    27    35    32    30    26    32
## expec_stab         26    27    33    46    34    33    38
## selfp_stab         22    23    29    32    35    24    31
## mot_stab           24    24    26    32    25    34    31
## achiev_stab        23    24    31    36    31    30    40
## oc_pc              26    27    35    32    30    26    32
## expec_pc           26    27    33    46    34    33    38
## selfp_pc           19    20    26    29    32    21    28
## mot_pc             23    24    26    32    25    33    31
## achiev_pc          24    25    32    37    32    31    41
## expec_oc           24    25    33    44    34    32    38
## selfp_oc           23    24    32    35    36    26    34
## mot_oc             26    27    35    40    33    36    39
## achiev_oc          22    23    31    36    31    29    39
## selfp_expec        23    24    32    44    37    33    40
## mot_expec          26    27    34    46    37    36    41
## achiev_expec       22    23    31    42    35    32    39
## mot_selfp          24    25    32    42    39    36    41
## achiev_selfp       21    22    30    39    36    31    40
## achiev_mot         24    25    32    40    35    36    43
##          pc_stab oc_stab expec_stab selfp_stab mot_stab achiev_stab oc_pc
## stab_Loc          20    26    26    22    24    23    26
## pc_Loc             21    27    27    23    24    24    27
## oc_Loc             21    35    33    29    26    31    35
## expec_Loc          20    32    46    32    32    36    32
## selfp_Loc          18    30    34    35    25    31    30

```

## mot_Loc	18	26	33	24	34	30	26
## achiev_Loc	19	32	38	31	31	40	32
## pc_stab	21	21	21	21	19	18	21
## oc_stab	21	35	33	29	26	31	35
## expec_stab	21	33	47	33	33	37	33
## selfp_stab	21	29	33	38	24	30	29
## mot_stab	19	26	33	24	36	30	26
## achiev_stab	18	31	37	30	30	42	31
## oc_pc	21	35	33	29	26	31	35
## expec_pc	21	33	47	33	33	37	33
## selfp_pc	18	26	30	35	21	27	26
## mot_pc	19	26	33	24	34	30	26
## achiev_pc	19	32	38	31	31	40	32
## expec_oc	19	33	45	33	32	37	33
## selfp_oc	18	32	36	35	26	33	32
## mot_oc	21	35	41	32	36	38	35
## achiev_oc	17	31	37	30	29	38	31
## selfp_expec	18	32	44	35	33	39	32
## mot_expec	21	34	47	36	36	40	34
## achiev_expec	17	31	43	34	32	38	31
## mot_selfp	19	32	43	36	34	38	32
## achiev_selfp	16	30	40	33	29	37	30
## achiev_mot	19	32	41	32	34	40	32
##	expec_pc	selfp_pc	mot_pc	achiev_pc	expec_oc	selfp_oc	mot_oc
## stab_Loc	26	19	23	24	24	23	26
## pc_Loc	27	20	24	25	25	24	27
## oc_Loc	33	26	26	32	33	32	35
## expec_Loc	46	29	32	37	44	35	40
## selfp_Loc	34	32	25	32	34	36	33
## mot_Loc	33	21	33	31	32	26	36
## achiev_Loc	38	28	31	41	38	34	39
## pc_stab	21	18	19	19	19	18	21
## oc_stab	33	26	26	32	33	32	35
## expec_stab	47	30	33	38	45	36	41
## selfp_stab	33	35	24	31	33	35	32
## mot_stab	33	21	34	31	32	26	36
## achiev_stab	37	27	30	40	37	33	38
## oc_pc	33	26	26	32	33	32	35
## expec_pc	47	30	33	38	45	36	41
## selfp_pc	30	35	21	29	30	32	29
## mot_pc	33	21	36	31	32	26	36
## achiev_pc	38	29	31	43	38	34	39
## expec_oc	45	30	32	38	47	38	41
## selfp_oc	36	32	26	34	38	41	35
## mot_oc	41	29	36	39	41	35	45
## achiev_oc	37	27	29	39	39	35	38
## selfp_expec	44	32	33	40	46	40	42
## mot_expec	47	33	36	41	46	39	44
## achiev_expec	43	31	32	39	45	39	41
## mot_selfp	43	33	34	39	43	38	42
## achiev_selfp	40	31	29	39	42	38	38
## achiev_mot	41	29	34	41	41	35	42
##	achiev_oc	selfp_expec	mot_expec	achiev_expec	mot_selfp		
## stab_Loc	22		23	26	22	24	

## pc_Loc	23	24	27	23	25
## oc_Loc	31	32	34	31	32
## expec_Loc	36	44	46	42	42
## selfp_Loc	31	37	37	35	39
## mot_Loc	29	33	36	32	36
## achiev_Loc	39	40	41	39	41
## pc_stab	17	18	21	17	19
## oc_stab	31	32	34	31	32
## expec_stab	37	44	47	43	43
## selfp_stab	30	35	36	34	36
## mot_stab	29	33	36	32	34
## achiev_stab	38	39	40	38	38
## oc_pc	31	32	34	31	32
## expec_pc	37	44	47	43	43
## selfp_pc	27	32	33	31	33
## mot_pc	29	33	36	32	34
## achiev_pc	39	40	41	39	39
## expec_oc	39	46	46	45	43
## selfp_oc	35	40	39	39	38
## mot_oc	38	42	44	41	42
## achiev_oc	42	41	40	40	38
## selfp_expec	41	49	47	47	45
## mot_expec	40	47	50	46	46
## achiev_expec	40	47	46	48	44
## mot_selfp	38	45	46	44	48
## achiev_selfp	39	44	43	43	43
## achiev_mot	39	43	44	42	44
##	achiev_selfp	achiev_mot			
## stab_Loc	21	24			
## pc_Loc	22	25			
## oc_Loc	30	32			
## expec_Loc	39	40			
## selfp_Loc	36	35			
## mot_Loc	31	36			
## achiev_Loc	40	43			
## pc_stab	16	19			
## oc_stab	30	32			
## expec_stab	40	41			
## selfp_stab	33	32			
## mot_stab	29	34			
## achiev_stab	37	40			
## oc_pc	30	32			
## expec_pc	40	41			
## selfp_pc	31	29			
## mot_pc	29	34			
## achiev_pc	39	41			
## expec_oc	42	41			
## selfp_oc	38	35			
## mot_oc	38	42			
## achiev_oc	39	39			
## selfp_expec	44	43			
## mot_expec	43	44			
## achiev_expec	43	42			
## mot_selfp	43	44			

```

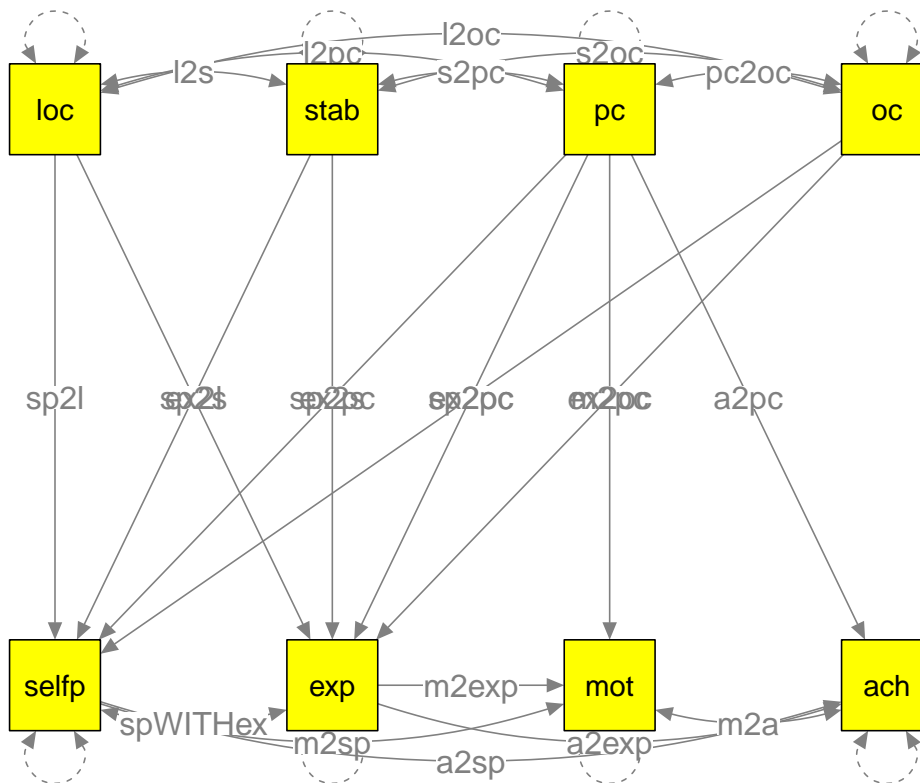
## achiev_selfp          45          41
## achiev_mot           41          46
##### SATURATED model with 4 dimensions & 2 outcomes #####
model1<-'
loc~~l2s*stab
loc~~l2pc*pc
loc~~l2oc*oc
stab~~s2pc*pc
stab~~s2oc*oc
pc~~pc2oc*oc
selfp~~spWITHex*exp
mot~~m2a*ach

selfp ~ sp2l*loc + sp2s*stab + sp2pc*pc + sp2oc*oc
exp ~ ex2l*loc + ex2s*stab + ex2pc*pc + ex2oc*oc
mot ~ m2pc*pc + m2sp*selfp + m2exp*exp
ach ~ a2pc*pc + a2sp*selfp + a2exp*exp

loc~~ 1*loc
stab~~ 1*stab
pc~~ 1*pc
oc~~ 1*oc'

plot(model1, color="yellow")

```



```

# Convert the Lavaan syntax into the RAM specification
RAM1 <- lavaan2RAM(model1, obs.variables = c("loc","stab","pc","oc","exp","selfp","mot","ach"))
#RAM1#

#Fitting a model
#Create mean structure
MO<-create.vechsR(AO=RAM1$A, SO=RAM1$S)
#MO#

#Create heterogeneity variances
TO<-create.Tau2(RAM = RAM1,RE.type = "Diag",Transform = "expLog",RE.startvalues = 0.05)
#TO#
fit0<-osmasem(model.name = "No moderator", Mmatrix = M0, Tmatrix = T0, data=my.df,intervals.type = "z")
summary(fit0, Saturated=TRUE, fitIndices=T)

```

```
## Summary of No moderator
```

```
##
```

```
## free parameters:
```

##	name	matrix	row	col	Estimate	Std.Error	A	z value
## 1	ex2l	A0	exp	loc	0.027417539	0.06416977		0.42726565
## 2	sp2l	A0	selfp	loc	0.031924232	0.08748032		0.36493043
## 3	ex2s	A0	exp	stab	-0.017328716	0.08707370		-0.19901206
## 4	sp2s	A0	selfp	stab	0.138181968	0.04746937		2.91097124
## 5	ex2pc	A0	exp	pc	0.157711583	0.08447420		1.86697927
## 6	sp2pc	A0	selfp	pc	0.096932267	0.08320832		1.16493478
## 7	m2pc	A0	mot	pc	0.104850454	0.03643382		2.87783336
## 8	a2pc	A0	ach	pc	0.200553414	0.04333277		4.62821586
## 9	ex2oc	A0	exp	oc	0.021087931	0.03328868		0.63348654
## 10	sp2oc	A0	selfp	oc	0.009628886	0.03383433		0.28458924
## 11	m2exp	A0	mot	exp	0.341526088	0.07597069		4.49549799
## 12	a2exp	A0	ach	exp	0.036946288	0.07341770		0.50323407
## 13	m2sp	A0	mot	selfp	0.003354755	0.08545282		0.03925856
## 14	a2sp	A0	ach	selfp	0.153609992	0.08671066		1.77152364
## 15	l2s	S0	stab	loc	0.229192135	0.03593281		6.37835203
## 16	l2pc	S0	pc	loc	0.505136214	0.04290654		11.77294148
## 17	l2oc	S0	oc	loc	-0.180811906	0.06319687		-2.86108941
## 18	s2pc	S0	pc	stab	0.036059581	0.04163872		0.86601071
## 19	s2oc	S0	oc	stab	0.008296907	0.04653199		0.17830545
## 20	pc2oc	S0	oc	pc	-0.134138833	0.05582307		-2.40292842
## 21	spWITHex	S0	selfp	exp	0.317001748	0.09778911		3.24168746
## 22	m2a	S0	ach	mot	0.031033539	0.07004297		0.44306431
## 23	Tau1_1	vecTau1	1	1	-1.741025547	0.16083186		-10.82512813
## 24	Tau1_2	vecTau1	2	1	-1.473306009	0.14163044		-10.40246697
## 25	Tau1_3	vecTau1	3	1	-1.295833230	0.16849982		-7.69041303
## 26	Tau1_4	vecTau1	4	1	-2.577681661	0.44412231		-5.80399049
## 27	Tau1_5	vecTau1	5	1	-1.587438596	0.20830026		-7.62091505
## 28	Tau1_6	vecTau1	6	1	-2.194818271	0.22762407		-9.64229427
## 29	Tau1_7	vecTau1	7	1	-2.409866333	0.33109844		-7.27839832
## 30	Tau1_8	vecTau1	8	1	-1.471370062	0.14234081		-10.33695125
## 31	Tau1_9	vecTau1	9	1	-1.665375748	0.19134372		-8.70358174
## 32	Tau1_10	vecTau1	10	1	-1.248070818	0.25663159		-4.86327824
## 33	Tau1_11	vecTau1	11	1	-1.936940720	0.25600017		-7.56616979
## 34	Tau1_12	vecTau1	12	1	-1.750351584	0.19900183		-8.79565581
## 35	Tau1_13	vecTau1	13	1	-1.658295046	0.23497014		-7.05747151

```

## 36 Tau1_14 vecTau1 14 1 -1.391725452 0.18001643 -7.73110228
## 37 Tau1_15 vecTau1 15 1 -1.755604129 0.28376335 -6.18686008
## 38 Tau1_16 vecTau1 16 1 -1.480603990 0.18579683 -7.96894120
## 39 Tau1_17 vecTau1 17 1 -2.204583358 0.25002693 -8.81738349
## 40 Tau1_18 vecTau1 18 1 -2.000047599 0.25550236 -7.82790262
## 41 Tau1_19 vecTau1 19 1 -3.401674404 1.58979111 -2.13969897
## 42 Tau1_20 vecTau1 20 1 -2.642259294 0.40411492 -6.53838587
## 43 Tau1_21 vecTau1 21 1 -2.191637768 0.29052810 -7.54363444
## 44 Tau1_22 vecTau1 22 1 -2.397681024 0.33076213 -7.24895871
## 45 Tau1_23 vecTau1 23 1 -1.404470330 0.29148206 -4.81837651
## 46 Tau1_24 vecTau1 24 1 -2.058028394 0.41113596 -5.00571243
## 47 Tau1_25 vecTau1 25 1 -1.979192835 0.33936667 -5.83201884
## 48 Tau1_26 vecTau1 26 1 -1.746049416 0.31150959 -5.60512245
## 49 Tau1_27 vecTau1 27 1 -1.449439099 0.23749271 -6.10308878
## 50 Tau1_28 vecTau1 28 1 -1.636962689 0.26571310 -6.16063975
## Pr(>|z|)
## 1 6.691858e-01
## 2 7.151633e-01
## 3 8.422533e-01
## 4 3.603072e-03
## 5 6.190448e-02
## 6 2.440454e-01
## 7 4.004166e-03
## 8 3.688295e-06
## 9 5.264160e-01
## 10 7.759589e-01
## 11 6.940732e-06
## 12 6.147997e-01
## 13 9.686842e-01
## 14 7.647367e-02
## 15 1.790037e-10
## 16 0.000000e+00
## 17 4.221880e-03
## 18 3.864843e-01
## 19 8.584831e-01
## 20 1.626437e-02
## 21 1.188243e-03
## 22 6.577192e-01
## 23 0.000000e+00
## 24 0.000000e+00
## 25 1.465494e-14
## 26 6.475495e-09
## 27 2.509104e-14
## 28 0.000000e+00
## 29 3.377298e-13
## 30 0.000000e+00
## 31 0.000000e+00
## 32 1.154574e-06
## 33 3.841372e-14
## 34 0.000000e+00
## 35 1.695533e-12
## 36 1.065814e-14
## 37 6.137439e-10
## 38 1.554312e-15

```



```

## 39 0.000000e+00
## 40 4.884981e-15
## 41 3.237910e-02
## 42 6.218626e-11
## 43 4.574119e-14
## 44 4.198863e-13
## 45 1.447311e-06
## 46 5.565580e-07
## 47 5.476073e-09
## 48 2.081078e-08
## 49 1.040380e-09
## 50 7.245164e-10
##
## Model Statistics:
##           | Parameters | Degrees of Freedom | Fit (-2lnL units)
## Model:      50           390           -178.326519
## Saturated:  56           384           -182.232896
## Independence: 28           412           3.184963
## Number of observations/statistics: 15073/440
##
## chi-square: <U+03C7>^2 ( df=6 ) = 3.906377, p = 0.6893446
## Information Criteria:
##           | df Penalty | Parameters Penalty | Sample-Size Adjusted
## AIC:      -958.3265           -78.32652           -77.98702
## BIC:      -3930.3841          302.70650           143.81044
## CFI: 1.0133
## TLI: 1.062066 (also known as NNFI)
## RMSEA: 0 *(Non-centrality parameter is negative) [95% CI (0, 0.0095112)]
## Prob(RMSEA <= 0.05): 1
## timestamp: 2020-09-08 10:01:40
## Wall clock time: 43.70648 secs
## optimizer: SLSQP
## OpenMx version number: 2.18.1
## Need help? See help(mxSummary)

```

```
osmasemSRMR(fit0)
```

```
## [1] 0.01354376
```

```
coef(fit0)
```

```

##           ex2l           sp2l           ex2s           sp2s           ex2pc           sp2pc
## 0.027417539 0.031924232 -0.017328716 0.138181968 0.157711583 0.096932267
##           m2pc           a2pc           ex2oc           sp2oc           m2exp           a2exp
## 0.104850454 0.200553414 0.021087931 0.009628886 0.341526088 0.036946288
##           m2sp           a2sp           l2s           l2pc           l2oc           s2pc
## 0.003354755 0.153609992 0.229192135 0.505136214 -0.180811906 0.036059581
##           s2oc           pc2oc           spWITHex           m2a
## 0.008296907 -0.134138833 0.317001748 0.031033539

```

```
VarCorr(fit0)
```

```

##           Tau2_1           Tau2_2           Tau2_3           Tau2_4           Tau2_5           Tau2_6
## Tau2_1 0.03074429 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_2 0.00000000 0.05251733 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_3 0.00000000 0.00000000 0.07489513 0.00000000 0.00000000 0.00000000

```





```

## Tau2_25 0.000000000 0.000000000 0.00000000 0.000000000 0.00000000 0.00000000
## Tau2_26 0.000000000 0.000000000 0.00000000 0.000000000 0.00000000 0.00000000
## Tau2_27 0.000000000 0.000000000 0.00000000 0.000000000 0.00000000 0.00000000
## Tau2_28 0.000000000 0.000000000 0.00000000 0.000000000 0.00000000 0.00000000
##          Tau2_25    Tau2_26    Tau2_27    Tau2_28
## Tau2_1  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_2  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_3  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_4  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_5  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_6  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_7  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_8  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_9  0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_10 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_11 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_12 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_13 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_14 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_15 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_16 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_17 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_18 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_19 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_20 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_21 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_22 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_23 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_24 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_25 0.01909391 0.00000000 0.00000000 0.00000000
## Tau2_26 0.00000000 0.03043692 0.00000000 0.00000000
## Tau2_27 0.00000000 0.00000000 0.05508498 0.00000000
## Tau2_28 0.00000000 0.00000000 0.00000000 0.03785753

```

```

# Residual variances
Sres <- fit0$mx.fit$algebras$Smatrix$result
Sres <- as.matrix(diag(Sres))
dimnames(Sres) <- list(varnames,'(residual) variance')
round(Sres,4)

```

```

##          (residual) variance
## Loc          1.0000
## stab         1.0000
## pc           1.0000
## oc           1.0000
## expec        0.9708
## selfp        0.9646
## mot          0.8595
## achiev       0.9213

```

```

##### OSMASEM With MODERatoR #####
#### Moderator on the A matrix: event valence ####
Ax<-matrix(c(0,0,0,0,0,0,0,0,
             0,0,0,0,0,0,0,0,
             0,0,0,0,0,0,0,0,

```

```

0,0,0,0,0,0,0,0,
"0*data.evval", "0*data.evval", "0*data.evval", "0*data.evval", 0,0,0,0,
"0*data.evval", "0*data.evval", "0*data.evval", "0*data.evval", 0,0,0,0,
0,0, "0*data.evval", 0, "0*data.evval", "0*data.evval", 0,0,
0,0, "0*data.evval", 0, "0*data.evval", "0*data.evval", 0,0),
nrow=8, ncol=8, byrow=TRUE)
#Ax#
M1<-create.vechsR(AO=RAM1$A, SO=RAM1$S, Ax=Ax)
#M1#
fit1<-osmasem(model.name = "evval", Mmatrix = M1, Tmatrix = T0,
              data=my.df)
summary(fit1)

```

```

## Summary of evval
##
## free parameters:
##      name  matrix  row  col      Estimate  Std.Error  A      z value
## 1    ex2l    A0    exp  loc  0.0302421736  0.05519882      0.54787722
## 2    sp2l    A0  selfp  loc -0.0951858081  0.06812393     -1.39724486
## 3    ex2s    A0    exp  stab -0.0163006029  0.06563724     -0.24834383
## 4    sp2s    A0  selfp  stab  0.1623927885  0.04507668      3.60259000
## 5    ex2pc   A0    exp   pc  0.1549144475  0.08124365      1.90678826
## 6    sp2pc   A0  selfp   pc  0.1258427615  0.07349069      1.71236340
## 7    m2pc    A0    mot   pc  0.1109038863  0.04020055      2.75876524
## 8    a2pc    A0    ach   pc  0.1734619674  0.04784872      3.62521610
## 9    ex2oc   A0    exp   oc  0.0276876928  0.03177316      0.87141757
## 10   sp2oc   A0  selfp   oc  0.0080091763  0.03398570      0.23566311
## 11   m2exp   A0    mot   exp  0.3851291246  0.07503652      5.13255590
## 12   a2exp   A0    ach   exp  0.0981102728  0.07565993      1.29672694
## 13   m2sp    A0    mot  selfp -0.0386556025  0.08869533     -0.43582454
## 14   a2sp    A0    ach  selfp  0.1260008161  0.08869519      1.42060486
## 15    l2s    S0  stab   loc  0.2294547455  0.03656369      6.27548061
## 16    l2pc   S0    pc   loc  0.5028054074  0.04346342     11.56847268
## 17    l2oc   S0    oc   loc -0.1810800831  0.06319620     -2.86536336
## 18    s2pc   S0    pc   stab  0.0410600500  0.04303266      0.95416017
## 19    s2oc   S0    oc   stab  0.0078572959  0.04645629      0.16913308
## 20    pc2oc  S0    oc    pc -0.1328928534  0.05685075     -2.33757432
## 21  spWITHex S0  selfp   exp  0.3077692202  0.09452384      3.25599578
## 22    m2a    S0    ach   mot  0.0425339423  0.06831622      0.62260385
## 23   ex2l_1  A1    exp   loc -0.0479880415  0.05683992     -0.84426649
## 24   sp2l_1  A1  selfp   loc  0.1892953512  0.06617411      2.86056509
## 25   ex2s_1  A1    exp   stab  0.2718948629  0.06463995      4.20629723
## 26   sp2s_1  A1  selfp   stab  0.0383381196  0.04502451      0.85149445
## 27  ex2pc_1  A1    exp    pc  0.0700195943  0.08277886      0.84586320
## 28  sp2pc_1  A1  selfp    pc  0.0156115845  0.07249450      0.21534853
## 29   m2pc_1  A1    mot    pc -0.0358885416  0.04056465     -0.88472454
## 30   a2pc_1  A1    ach    pc  0.0005341957  0.04775906      0.01118522
## 31  ex2oc_1  A1    exp    oc -0.0283879328  0.03353858     -0.84642610
## 32  sp2oc_1  A1  selfp    oc -0.0212431787  0.03408152     -0.62330484
## 33  m2exp_1  A1    mot   exp  0.0832900676  0.07349587      1.13326186
## 34  a2exp_1  A1    ach   exp -0.1525240354  0.07450843     -2.04707077
## 35   m2sp_1  A1    mot  selfp -0.1034609542  0.07776955     -1.33035306
## 36   a2sp_1  A1    ach  selfp  0.1621693330  0.10080519      1.60873997
## 37   Tau1_1  vecTau1  1      1 -1.7205336440  0.15967809    -10.77501374

```

```

## 38  Tau1_2 vecTau1      2      1 -1.4661020945 0.14152930 -10.35900025
## 39  Tau1_3 vecTau1      3      1 -1.2962383742 0.16849170  -7.69318822
## 40  Tau1_4 vecTau1      4      1 -2.9881659730 0.74480821  -4.01199385
## 41  Tau1_5 vecTau1      5      1 -2.1175387761 0.25955063  -8.15848061
## 42  Tau1_6 vecTau1      6      1 -2.1916555899 0.22762177  -9.62849729
## 43  Tau1_7 vecTau1      7      1 -2.4033804681 0.32200143  -7.46388143
## 44  Tau1_8 vecTau1      8      1 -1.4478293150 0.14146889 -10.23425918
## 45  Tau1_9 vecTau1      9      1 -1.6681395656 0.19141306  -8.71486814
## 46  Tau1_10 vecTau1     10      1 -1.6628248681 0.28155559  -5.90584930
## 47  Tau1_11 vecTau1     11      1 -2.0502463720 0.27550605  -7.44174721
## 48  Tau1_12 vecTau1     12      1 -1.8706137061 0.20674437  -9.04795461
## 49  Tau1_13 vecTau1     13      1 -1.9169034199 0.28499087  -6.72619238
## 50  Tau1_14 vecTau1     14      1 -1.3871378259 0.17982771  -7.71370469
## 51  Tau1_15 vecTau1     15      1 -1.7843124956 0.28912260  -6.17147353
## 52  Tau1_16 vecTau1     16      1 -1.6168441814 0.19686008  -8.21316436
## 53  Tau1_17 vecTau1     17      1 -2.1910941856 0.24836387  -8.82211326
## 54  Tau1_18 vecTau1     18      1 -2.0118241060 0.25377392  -7.92762351
## 55  Tau1_19 vecTau1     19      1 -4.0695753019 5.54976474  -0.73328789
## 56  Tau1_20 vecTau1     20      1 -2.8669631933 0.56135552  -5.10721472
## 57  Tau1_21 vecTau1     21      1 -2.1885142440 0.28941726  -7.56179585
## 58  Tau1_22 vecTau1     22      1 -2.3836345435 0.32241513  -7.39306042
## 59  Tau1_23 vecTau1     23      1 -1.5285682982 0.29966849  -5.10086422
## 60  Tau1_24 vecTau1     24      1 -2.1155285693 0.42214967  -5.01132347
## 61  Tau1_25 vecTau1     25      1 -2.0002072680 0.37054264  -5.39804880
## 62  Tau1_26 vecTau1     26      1 -1.7855547409 0.32974291  -5.41499052
## 63  Tau1_27 vecTau1     27      1 -1.4575711071 0.25689089  -5.67389180
## 64  Tau1_28 vecTau1     28      1 -1.7572786715 0.28374970  -6.19305903
##      Pr(>|z|)
## 1  5.837762e-01
## 2  1.623400e-01
## 3  8.038684e-01
## 4  3.150623e-04
## 5  5.654801e-02
## 6  8.682972e-02
## 7  5.802020e-03
## 8  2.887199e-04
## 9  3.835262e-01
## 10 8.136941e-01
## 11 2.858338e-07
## 12 1.947252e-01
## 13 6.629640e-01
## 14 1.554317e-01
## 15 3.485559e-10
## 16 0.000000e+00
## 17 4.165310e-03
## 18 3.400026e-01
## 19 8.656920e-01
## 20 1.940934e-02
## 21 1.129954e-03
## 22 5.335449e-01
## 23 3.985205e-01
## 24 4.228867e-03
## 25 2.595888e-05
## 26 3.944947e-01

```

```

## 27 3.976291e-01
## 28 8.294956e-01
## 29 3.763052e-01
## 30 9.910757e-01
## 31 3.973151e-01
## 32 5.330842e-01
## 33 2.571043e-01
## 34 4.065114e-02
## 35 1.834020e-01
## 36 1.076732e-01
## 37 0.000000e+00
## 38 0.000000e+00
## 39 1.443290e-14
## 40 6.020807e-05
## 41 4.440892e-16
## 42 0.000000e+00
## 43 8.393286e-14
## 44 0.000000e+00
## 45 0.000000e+00
## 46 3.508346e-09
## 47 9.925394e-14
## 48 0.000000e+00
## 49 1.741607e-11
## 50 1.221245e-14
## 51 6.765646e-10
## 52 2.220446e-16
## 53 0.000000e+00
## 54 2.220446e-15
## 55 4.633829e-01
## 56 3.269422e-07
## 57 3.974598e-14
## 58 1.434408e-13
## 59 3.381061e-07
## 60 5.405696e-07
## 61 6.736954e-08
## 62 6.129195e-08
## 63 1.395893e-08
## 64 5.900762e-10
##
## Model Statistics:
##           | Parameters | Degrees of Freedom | Fit (-2lnL units)
## Model:           64                376                -228.5524
## Saturated:       434                6                  NA
## Independence:    56                384                NA
## Number of observations/statistics: 15073/440
##
## Information Criteria:
##           | df Penalty | Parameters Penalty | Sample-Size Adjusted
## AIC:       -980.5524                -100.5524                -99.99806
## BIC:       -3845.9207                387.1698                183.78288
## To get additional fit indices, see help(mxRefModels)
## timestamp: 2020-09-08 10:04:00
## Wall clock time: 75.71973 secs
## optimizer: SLSQP

```

```
## OpenMx version number: 2.18.1
## Need help? See help(mxSummary)
```

```
anova(fit1,fit0)
```

```
##      base   comparison ep  minus2LL  df      AIC   diffLL  diffdf      p
## 1 evval      <NA> 64 -228.5524 376 -980.5524      NA      NA      NA      NA
## 2 evval No moderator 50 -178.3265 390 -958.3265 50.22591      14 5.596576e-06
```

```
## Moderator on the S matrix : event valence #####
```

```
Sx<-matrix(c(0,"0*data.evval","0*data.evval","0*data.evval",0,0,0,0,
             "0*data.evval",0,"0*data.evval","0*data.evval",0,0,0,0,
             "0*data.evval","0*data.evval",0,"0*data.evval",0,0,0,0,
             "0*data.evval","0*data.evval","0*data.evval",0,0,0,0,0,
             0,0,0,0,0,"0*data.evval",0,0,
             0,0,0,0,"0*data.evval",0,0,0,
             0,0,0,0,0,0,0,"0*data.evval",
             0,0,0,0,0,0,"0*data.evval",0),
           nrow=8,ncol=8,byrow=TRUE)
```

```
#Sx#
```

```
M2<-create.vechsR(A0=RAM1$A, S0=RAM1$S, Sx=Sx)
```

```
fit2 <- osmasem(model.name="evval as moderator", Mmatrix=M2, Tmatrix=T0, data=my.df)
summary(fit2)
```

```
## Summary of evval as moderator
```

```
##
```

```
## free parameters:
```

##	name	matrix	row	col	Estimate	Std.Error	A	z value
## 1	ex2l	A0	exp	loc	0.00326349	0.06166481		0.05292305
## 2	sp2l	A0	selfp	loc	-0.02631498	0.08566455		-0.30718634
## 3	ex2s	A0	exp	stab	0.02047437	0.07853542		0.26070238
## 4	sp2s	A0	selfp	stab	0.16995619	0.04707215		3.61054660
## 5	ex2pc	A0	exp	pc	0.19444363	0.08548107		2.27469805
## 6	sp2pc	A0	selfp	pc	0.15494399	0.08202040		1.88909091
## 7	m2pc	A0	mot	pc	0.10249973	0.03698110		2.77167876
## 8	a2pc	A0	ach	pc	0.21977202	0.04627689		4.74906584
## 9	ex2oc	A0	exp	oc	0.02229528	0.03376279		0.66035054
## 10	sp2oc	A0	selfp	oc	0.01194222	0.03495607		0.34163512
## 11	m2exp	A0	mot	exp	0.33099551	0.07632186		4.33683765
## 12	a2exp	A0	ach	exp	0.04288734	0.07623467		0.56256998
## 13	m2sp	A0	mot	selfp	0.01194501	0.08682192		0.13758059
## 14	a2sp	A0	ach	selfp	0.12542023	0.08832612		1.41996761
## 15	l2s	S0	stab	loc	0.20348837	0.02729289		7.45572730
## 16	l2pc	S0	pc	loc	0.50135976	0.04371299		11.46935298
## 17	l2oc	S0	oc	loc	-0.19668482	0.06428185		-3.05972585
## 18	s2pc	S0	pc	stab	0.01171900	0.03886392		0.30153945
## 19	s2oc	S0	oc	stab	0.01225311	0.04824390		0.25398259
## 20	pc2oc	S0	oc	pc	-0.12859058	0.05796990		-2.21823030
## 21	spWITHex	S0	selfp	exp	0.29146409	0.08643771		3.37195506
## 22	m2a	S0	ach	mot	0.05619417	0.05960253		0.94281521
## 23	l2s_1	S1	stab	loc	0.14637610	0.02734691		5.35256451
## 24	l2pc_1	S1	pc	loc	0.04539883	0.04212033		1.07783651
## 25	l2oc_1	S1	oc	loc	0.06275755	0.06543201		0.95912622
## 26	s2pc_1	S1	pc	stab	0.17551784	0.04110465		4.27002366



```

## 27      s2oc_1      S1      oc      stab -0.01447010 0.04728954      -0.30598940
## 28      pc2oc_1      S1      oc      pc      -0.04467359 0.05332775      -0.83771748
## 29      spWITHex_1      S1      selfp      exp      0.08725007 0.09025919      0.96666139
## 30      m2a_1      S1      ach      mot      -0.12769134 0.05612429      -2.27515274
## 31      Tau1_1      vecTau1      1      1      -2.12371455 0.18987130      -11.18502154
## 32      Tau1_2      vecTau1      2      1      -1.46740803 0.14263971      -10.28751439
## 33      Tau1_3      vecTau1      3      1      -1.31402812 0.16888420      -7.78064549
## 34      Tau1_4      vecTau1      4      1      -2.67501556 0.50591650      -5.28746450
## 35      Tau1_5      vecTau1      5      1      -1.68140672 0.21814245      -7.70783833
## 36      Tau1_6      vecTau1      6      1      -2.18370767 0.22625102      -9.65170321
## 37      Tau1_7      vecTau1      7      1      -2.41370068 0.32281257      -7.47709638
## 38      Tau1_8      vecTau1      8      1      -1.57212848 0.15410815      -10.20146226
## 39      Tau1_9      vecTau1      9      1      -1.67589099 0.19201201      -8.72805280
## 40      Tau1_10      vecTau1      10      1      -1.31876242 0.26283834      -5.01738981
## 41      Tau1_11      vecTau1      11      1      -1.98376269 0.26793837      -7.40380216
## 42      Tau1_12      vecTau1      12      1      -1.81136278 0.20429817      -8.86627032
## 43      Tau1_13      vecTau1      13      1      -1.83850170 0.26439010      -6.95374648
## 44      Tau1_14      vecTau1      14      1      -1.38158178 0.18209914      -7.58697589
## 45      Tau1_15      vecTau1      15      1      -1.74324478 0.28520213      -6.11231331
## 46      Tau1_16      vecTau1      16      1      -1.52676829 0.19118295      -7.98590204
## 47      Tau1_17      vecTau1      17      1      -2.20367700 0.25112051      -8.77537641
## 48      Tau1_18      vecTau1      18      1      -1.94973044 0.26191514      -7.44413045
## 49      Tau1_19      vecTau1      19      1      -3.57189190 2.15979129      -1.65381346
## 50      Tau1_20      vecTau1      20      1      -2.67878784 0.42801859      -6.25857831
## 51      Tau1_21      vecTau1      21      1      -2.17341594 0.28692011      -7.57498638
## 52      Tau1_22      vecTau1      22      1      -2.41594560 0.32792341      -7.36740821
## 53      Tau1_23      vecTau1      23      1      -1.57011059 0.31474932      -4.98844792
## 54      Tau1_24      vecTau1      24      1      -2.06197947 0.41437162      -4.97616001
## 55      Tau1_25      vecTau1      25      1      -1.94168433 0.33598568      -5.77906870
## 56      Tau1_26      vecTau1      26      1      -1.67774264 0.31125857      -5.39018940
## 57      Tau1_27      vecTau1      27      1      -1.46123779 0.23805031      -6.13835698
## 58      Tau1_28      vecTau1      28      1      -1.88268300 0.28744815      -6.54964389
##      Pr(>|z|)
## 1      9.577932e-01
## 2      7.587015e-01
## 3      7.943220e-01
## 4      3.055524e-04
## 5      2.292405e-02
## 6      5.887965e-02
## 7      5.576804e-03
## 8      2.043584e-06
## 9      5.090289e-01
## 10     7.326255e-01
## 11     1.445473e-05
## 12     5.737277e-01
## 13     8.905719e-01
## 14     1.556171e-01
## 15     8.948398e-14
## 16     0.000000e+00
## 17     2.215397e-03
## 18     7.630032e-01
## 19     7.995090e-01
## 20     2.653913e-02
## 21     7.463662e-04

```

```

## 22 3.457754e-01
## 23 8.671637e-08
## 24 2.811067e-01
## 25 3.374952e-01
## 26 1.954522e-05
## 27 7.596127e-01
## 28 4.021894e-01
## 29 3.337133e-01
## 30 2.289677e-02
## 31 0.000000e+00
## 32 0.000000e+00
## 33 7.105427e-15
## 34 1.240234e-07
## 35 1.287859e-14
## 36 0.000000e+00
## 37 7.593925e-14
## 38 0.000000e+00
## 39 0.000000e+00
## 40 5.237822e-07
## 41 1.323386e-13
## 42 0.000000e+00
## 43 3.557155e-12
## 44 3.264056e-14
## 45 9.819714e-10
## 46 1.332268e-15
## 47 0.000000e+00
## 48 9.747758e-14
## 49 9.816542e-02
## 50 3.885028e-10
## 51 3.597123e-14
## 52 1.740830e-13
## 53 6.086631e-07
## 54 6.485804e-07
## 55 7.511525e-09
## 56 7.038347e-08
## 57 8.337933e-10
## 58 5.767453e-11
##
## Model Statistics:
##           | Parameters | Degrees of Freedom | Fit (-2lnL units)
## Model:           58           382           -224.2151
## Saturated:       434           6             NA
## Independence:    56           384           NA
## Number of observations/statistics: 15073/440
##
## Information Criteria:
##           | df Penalty | Parameters Penalty | Sample-Size Adjusted
## AIC:       -988.2151           -108.2151           -107.7593
## BIC:       -3899.3074           333.7832           149.4638
## To get additional fit indices, see help(mxRefModels)
## timestamp: 2020-09-08 10:05:02
## Wall clock time: 61.61643 secs
## optimizer: SLSQP
## OpenMx version number: 2.18.1

```

```
## Need help? See help(mxSummary)
```

```
anova(fit2,fit0)
```

```
##           base   comparison ep  minus2LL  df      AIC  diffLL  diffdf
## 1 evval as moderator      <NA> 58 -224.2151 382 -988.2151    NA    NA
## 2 evval as moderator No moderator 50 -178.3265 390 -958.3265 45.8886    8
##           p
## 1           NA
## 2 2.495755e-07
```

```
##### Moderator on A & S matrices : event valence #####
```

```
M3 <- create.vechsR(A0=RAM1$A, S0=RAM1$S, Ax=Ax, Sx=Sx)
```

```
fit3 <- osmasem(model.name="Evval Moderator on Ax and Sx", Mmatrix=M3, Tmatrix=T0, data=my.df)
```

```
summary(fit3)
```

```
## Summary of Evval Moderator on Ax and Sx
```

```
##
```

```
## free parameters:
```

##	name	matrix	row	col	Estimate	Std.Error	A	z value
## 1	ex2l	A0	exp	loc	0.0035000164	0.05694702		0.06146092
## 2	sp2l	A0	selfp	loc	-0.0842706739	0.06716840		-1.25461784
## 3	ex2s	A0	exp	stab	-0.0081044329	0.06703158		-0.12090470
## 4	sp2s	A0	selfp	stab	0.1294861127	0.04545758		2.84850435
## 5	ex2pc	A0	exp	pc	0.1292039971	0.08329680		1.55112805
## 6	sp2pc	A0	selfp	pc	0.1090953898	0.07456229		1.46314430
## 7	m2pc	A0	mot	pc	0.1144971531	0.03968792		2.88493727
## 8	a2pc	A0	ach	pc	0.1916947345	0.04806342		3.98837036
## 9	ex2oc	A0	exp	oc	0.0243792700	0.03457156		0.70518286
## 10	sp2oc	A0	selfp	oc	-0.0020330902	0.03716120		-0.05471002
## 11	m2exp	A0	mot	exp	0.3694072709	0.07571141		4.87914909
## 12	a2exp	A0	ach	exp	0.0813741114	0.07755444		1.04925151
## 13	m2sp	A0	mot	selfp	-0.0211079855	0.08685650		-0.24302137
## 14	a2sp	A0	ach	selfp	0.1230309239	0.09220645		1.33429851
## 15	l2s	S0	stab	loc	0.2032541720	0.02708059		7.50552950
## 16	l2pc	S0	pc	loc	0.5020540285	0.04337346		11.57514405
## 17	l2oc	S0	oc	loc	-0.1954261746	0.06425706		-3.04131816
## 18	s2pc	S0	pc	stab	0.0249181569	0.03782375		0.65879660
## 19	s2oc	S0	oc	stab	0.0113084173	0.04786643		0.23624943
## 20	pc2oc	S0	oc	pc	-0.1291609091	0.05759100		-2.24272739
## 21	spWITHex	S0	selfp	exp	0.2887267833	0.08720317		3.31096643
## 22	m2a	S0	ach	mot	0.0613680752	0.06191868		0.99110760
## 23	ex2l_1	A1	exp	loc	-0.0335413235	0.05662727		-0.59231754
## 24	sp2l_1	A1	selfp	loc	0.1724393108	0.06658739		2.58966923
## 25	ex2s_1	A1	exp	stab	0.2395824597	0.06651834		3.60175044
## 26	sp2s_1	A1	selfp	stab	0.0485923869	0.04544536		1.06924870
## 27	ex2pc_1	A1	exp	pc	0.0708391690	0.08284699		0.85506031
## 28	sp2pc_1	A1	selfp	pc	0.0081145162	0.07425983		0.10927195
## 29	m2pc_1	A1	mot	pc	-0.0384012871	0.03986412		-0.96330449
## 30	a2pc_1	A1	ach	pc	-0.0006945954	0.04723002		-0.01470665
## 31	ex2oc_1	A1	exp	oc	-0.0249895728	0.03499602		-0.71406891
## 32	sp2oc_1	A1	selfp	oc	-0.0148317133	0.03689134		-0.40203775
## 33	m2exp_1	A1	mot	exp	0.0969501888	0.07547505		1.28453288
## 34	a2exp_1	A1	ach	exp	-0.1208636393	0.07458032		-1.62058356
## 35	m2sp_1	A1	mot	selfp	-0.1148108353	0.08689297		-1.32129020

```

## 36    a2sp_1      A1  ach selfp  0.1351670341 0.09617962    1.40536046
## 37      l2s_1     S1  stab  loc  0.1416779705 0.02700809    5.24576004
## 38      l2pc_1    S1   pc  loc  0.0202623670 0.04323366    0.46867111
## 39      l2oc_1    S1   oc  loc  0.0557473299 0.06425150    0.86764243
## 40      s2pc_1    S1   pc  stab 0.1447596910 0.03821558    3.78797530
## 41      s2oc_1    S1   oc  stab -0.0068172817 0.04785588   -0.14245441
## 42      pc2oc_1   S1   oc   pc -0.0242327245 0.05720017   -0.42364775
## 43 spWITHex_1    S1  selfp  exp  0.0726635545 0.08795239    0.82616917
## 44      m2a_1     S1  ach   mot -0.0964373240 0.06162297   -1.56495753
## 45      Tau1_1 vecTau1  1    1 -2.1314293775 0.19015343  -11.20899760
## 46      Tau1_2 vecTau1  2    1 -1.4705780695 0.14134276  -10.40433959
## 47      Tau1_3 vecTau1  3    1 -1.3147980518 0.16876253   -7.79081757
## 48      Tau1_4 vecTau1  4    1 -2.9993291762 0.75910166   -3.95115612
## 49      Tau1_5 vecTau1  5    1 -2.1277983543 0.26077820   -8.15941813
## 50      Tau1_6 vecTau1  6    1 -2.1826045387 0.22698995   -9.61542384
## 51      Tau1_7 vecTau1  7    1 -2.4015297617 0.31859672   -7.53783576
## 52      Tau1_8 vecTau1  8    1 -1.5948748710 0.14807507  -10.77071858
## 53      Tau1_9 vecTau1  9    1 -1.6770752926 0.19173558   -8.74681338
## 54      Tau1_10 vecTau1 10   1 -1.6777127872 0.27852875   -6.02348163
## 55      Tau1_11 vecTau1 11   1 -2.0563491064 0.27411299   -7.50183029
## 56      Tau1_12 vecTau1 12   1 -1.8776001186 0.20711600   -9.06545180
## 57      Tau1_13 vecTau1 13   1 -1.9839238639 0.29187900   -6.79707648
## 58      Tau1_14 vecTau1 14   1 -1.3890221519 0.18019176   -7.70857738
## 59      Tau1_15 vecTau1 15   1 -1.7893331000 0.28895431   -6.19244303
## 60      Tau1_16 vecTau1 16   1 -1.6158244573 0.19733083   -8.18840365
## 61      Tau1_17 vecTau1 17   1 -2.1891767314 0.24862286   -8.80521098
## 62      Tau1_18 vecTau1 18   1 -1.9904376549 0.25698104   -7.74546493
## 63      Tau1_19 vecTau1 19   1 -4.0272545675 5.11382627   -0.78752276
## 64      Tau1_20 vecTau1 20   1 -2.8602943360 0.55505900   -5.15313564
## 65      Tau1_21 vecTau1 21   1 -2.1784321755 0.28766457   -7.57282056
## 66      Tau1_22 vecTau1 22   1 -2.3934513651 0.32231012   -7.42592683
## 67      Tau1_23 vecTau1 23   1 -1.5875492752 0.30241455   -5.24957966
## 68      Tau1_24 vecTau1 24   1 -2.1444210901 0.41977883   -5.10845456
## 69      Tau1_25 vecTau1 25   1 -2.0303634200 0.36394571   -5.57875354
## 70      Tau1_26 vecTau1 26   1 -1.7900410331 0.32839416   -5.45089173
## 71      Tau1_27 vecTau1 27   1 -1.4772504149 0.24736872   -5.97185606
## 72      Tau1_28 vecTau1 28   1 -1.8838135936 0.28754692   -6.55132586
##      Pr(>|z|)
## 1  9.509921e-01
## 2  2.096175e-01
## 3  9.037665e-01
## 4  4.392525e-03
## 5  1.208710e-01
## 6  1.434279e-01
## 7  3.914917e-03
## 8  6.652874e-05
## 9  4.806964e-01
## 10 9.563695e-01
## 11 1.065445e-06
## 12 2.940624e-01
## 13 8.079888e-01
## 14 1.821060e-01
## 15 6.128431e-14
## 16 0.000000e+00

```

## 17 2.355448e-03  
## 18 5.100264e-01  
## 19 8.132391e-01  
## 20 2.491440e-02  
## 21 9.297436e-04  
## 22 3.216330e-01  
## 23 5.536380e-01  
## 24 9.606819e-03  
## 25 3.160817e-04  
## 26 2.849576e-01  
## 27 3.925178e-01  
## 28 9.129868e-01  
## 29 3.353947e-01  
## 30 9.882662e-01  
## 31 4.751846e-01  
## 32 6.876562e-01  
## 33 1.989556e-01  
## 34 1.051070e-01  
## 35 1.864046e-01  
## 36 1.599141e-01  
## 37 1.556394e-07  
## 38 6.393047e-01  
## 39 3.855901e-01  
## 40 1.518799e-04  
## 41 8.867211e-01  
## 42 6.718227e-01  
## 43 4.087081e-01  
## 44 1.175929e-01  
## 45 0.000000e+00  
## 46 0.000000e+00  
## 47 6.661338e-15  
## 48 7.777457e-05  
## 49 4.440892e-16  
## 50 0.000000e+00  
## 51 4.773959e-14  
## 52 0.000000e+00  
## 53 0.000000e+00  
## 54 1.707045e-09  
## 55 6.283862e-14  
## 56 0.000000e+00  
## 57 1.067635e-11  
## 58 1.265654e-14  
## 59 5.923877e-10  
## 60 2.220446e-16  
## 61 0.000000e+00  
## 62 9.547918e-15  
## 63 4.309759e-01  
## 64 2.561665e-07  
## 65 3.641532e-14  
## 66 1.119105e-13  
## 67 1.524467e-07  
## 68 3.248045e-07  
## 69 2.422482e-08  
## 70 5.011788e-08

```

## 71 2.345695e-09
## 72 5.702838e-11
##
## Model Statistics:
##           | Parameters | Degrees of Freedom | Fit (-2lnL units)
##   Model:   |         72 |                 368 |          -263.2939
##   Saturated: |        434 |                 6   |                NA
## Independence: |         56 |                384 |                NA
## Number of observations/statistics: 15073/440
##
## Information Criteria:
##           | df Penalty | Parameters Penalty | Sample-Size Adjusted
## AIC:      | -999.2939 |        -119.2939   |          -118.5931
## BIC:      | -3803.6969 |         429.3936   |           200.5833
## To get additional fit indices, see help(mxRefModels)
## timestamp: 2020-09-08 10:11:23
## Wall clock time: 380.1741 secs
## optimizer: SLSQP
## OpenMx version number: 2.18.1
## Need help? See help(mxSummary)

```

```
coef(fit3)
```

```

##           ex2l           sp2l           ex2s           sp2s           ex2pc
## 0.0035000164 -0.0842706739 -0.0081044329 0.1294861127 0.1292039971
##           sp2pc           m2pc           a2pc           ex2oc           sp2oc
## 0.1090953898 0.1144971531 0.1916947345 0.0243792700 -0.0020330902
##           m2exp           a2exp           m2sp           a2sp           l2s
## 0.3694072709 0.0813741114 -0.0211079855 0.1230309239 0.2032541720
##           l2pc           l2oc           s2pc           s2oc           pc2oc
## 0.5020540285 -0.1954261746 0.0249181569 0.0113084173 -0.1291609091
##           spWITHex           m2a           ex2l_1           sp2l_1           ex2s_1
## 0.2887267833 0.0613680752 -0.0335413235 0.1724393108 0.2395824597
##           sp2s_1           ex2pc_1           sp2pc_1           m2pc_1           a2pc_1
## 0.0485923869 0.0708391690 0.0081145162 -0.0384012871 -0.0006945954
##           ex2oc_1           sp2oc_1           m2exp_1           a2exp_1           m2sp_1
## -0.0249895728 -0.0148317133 0.0969501888 -0.1208636393 -0.1148108353
##           a2sp_1           l2s_1           l2pc_1           l2oc_1           s2pc_1
## 0.1351670341 0.1416779705 0.0202623670 0.0557473299 0.1447596910
##           s2oc_1           pc2oc_1           spWITHex_1           m2a_1
## -0.0068172817 -0.0242327245 0.0726635545 -0.0964373240

```

```
osmasemR2(fit3,fit0)
```

```

## $Tau2.0
##   Tau2_1_1   Tau2_2_2   Tau2_3_3   Tau2_4_4   Tau2_5_5   Tau2_6_6
## 0.030744287 0.052517333 0.074895126 0.005768384 0.041799237 0.012405237
##   Tau2_7_7   Tau2_8_8   Tau2_9_9   Tau2_10_10  Tau2_11_11  Tau2_12_12
## 0.008068944 0.052721068 0.035766217 0.082402324 0.020777566 0.030176157
##   Tau2_13_13  Tau2_14_14  Tau2_15_15  Tau2_16_16  Tau2_17_17  Tau2_18_18
## 0.036276320 0.061824787 0.029860813 0.051756359 0.012165311 0.018313895
##   Tau2_19_19  Tau2_20_20  Tau2_21_21  Tau2_22_22  Tau2_23_23  Tau2_24_24
## 0.001110052 0.005069472 0.012484398 0.008268005 0.060268804 0.016308696
##   Tau2_25_25  Tau2_26_26  Tau2_27_27  Tau2_28_28
## 0.019093913 0.030436923 0.055084980 0.037857530
##

```

```

## $Tau2.1
##   Tau2_1_1   Tau2_2_2   Tau2_3_3   Tau2_4_4   Tau2_5_5   Tau2_6_6
## 0.0140819879 0.0528046439 0.0721075803 0.0024820800 0.0141846241 0.0127119971
##   Tau2_7_7   Tau2_8_8   Tau2_9_9   Tau2_10_10  Tau2_11_11  Tau2_12_12
## 0.0082046064 0.0411821758 0.0349390353 0.0348945168 0.0163635625 0.0233957654
##   Tau2_13_13  Tau2_14_14  Tau2_15_15  Tau2_16_16  Tau2_17_17  Tau2_18_18
## 0.0189140976 0.0621599546 0.0279129037 0.0394923256 0.0125459991 0.0186692908
##   Tau2_19_19  Tau2_20_20  Tau2_21_21  Tau2_22_22  Tau2_23_23  Tau2_24_24
## 0.0003176663 0.0032777808 0.0128185191 0.0083382432 0.0417899855 0.0137208023
##   Tau2_25_25  Tau2_26_26  Tau2_27_27  Tau2_28_28
## 0.0172364864 0.0278734107 0.0521046632 0.0231068265
##
## $R2
##   Tau2_1_1   Tau2_2_2   Tau2_3_3   Tau2_4_4   Tau2_5_5   Tau2_6_6   Tau2_7_7
## 0.54196408 0.00000000 0.03721932 0.56970963 0.66064873 0.00000000 0.00000000
##   Tau2_8_8   Tau2_9_9  Tau2_10_10  Tau2_11_11  Tau2_12_12  Tau2_13_13  Tau2_14_14
## 0.21886682 0.02312745 0.57653480 0.21244083 0.22469368 0.47861035 0.00000000
##   Tau2_15_15  Tau2_16_16  Tau2_17_17  Tau2_18_18  Tau2_19_19  Tau2_20_20  Tau2_21_21
## 0.06523297 0.23695703 0.00000000 0.00000000 0.71382745 0.35342759 0.00000000
##   Tau2_22_22  Tau2_23_23  Tau2_24_24  Tau2_25_25  Tau2_26_26  Tau2_27_27  Tau2_28_28
## 0.00000000 0.30660669 0.15868185 0.09727848 0.08422377 0.05410398 0.38963724

```

VarCorr(fit3)

```

##           Tau2_1   Tau2_2   Tau2_3   Tau2_4   Tau2_5   Tau2_6
## Tau2_1  0.01408199 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_2  0.00000000 0.05280464 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_3  0.00000000 0.00000000 0.07210758 0.00000000 0.00000000 0.00000000
## Tau2_4  0.00000000 0.00000000 0.00000000 0.00248208 0.00000000 0.00000000
## Tau2_5  0.00000000 0.00000000 0.00000000 0.00000000 0.01418462 0.00000000
## Tau2_6  0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.012712
## Tau2_7  0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_8  0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_9  0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_10 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_11 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_12 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_13 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_14 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_15 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_16 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_17 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_18 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_19 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_20 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_21 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_22 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_23 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_24 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_25 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_26 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_27 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_28 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000
##           Tau2_7   Tau2_8   Tau2_9   Tau2_10   Tau2_11   Tau2_12
## Tau2_1  0.00000000 0.00000000 0.00000000 0.00000000 0.00000000 0.00000000

```







```
## Tau2_23 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_24 0.00000000 0.00000000 0.00000000 0.00000000
## Tau2_25 0.01723649 0.00000000 0.00000000 0.00000000
## Tau2_26 0.00000000 0.02787341 0.00000000 0.00000000
## Tau2_27 0.00000000 0.00000000 0.05210466 0.00000000
## Tau2_28 0.00000000 0.00000000 0.00000000 0.02310683
```

```
anova(fit3,fit0)
```

```
##          base  comparison ep  minus2LL  df      AIC  diffLL
## 1 Evval Moderator on Ax and Sx      <NA> 72 -263.2939 368 -999.2939      NA
## 2 Evval Moderator on Ax and Sx No moderator 50 -178.3265 390 -958.3265 84.96739
##  diffdf      p
## 1      NA      NA
## 2      22 2.425356e-09
```

```
# Residual variances
```

```
Sres <- fit3$mx.fit$algebras$Smatrix$result
Sres <- as.matrix(diag(Sres))
dimnames(Sres) <- list(varnames,'(residual) variance')
round(Sres,4)
```

```
##          (residual) variance
## loc          1.0000
## stab         1.0000
## pc           1.0000
## oc           1.0000
## expec        0.9290
## selfp        0.9453
## mot          0.8755
## achiev       0.9184
```

```
A0 <- mxEval(A0, fit3$mx.fit)
A1 <- mxEval(A1, fit3$mx.fit)
A1
```

```
##          loc      stab      pc      oc      exp      selfp
## loc  0.00000000 0.00000000 0.0000000000 0.00000000 0.00000000 0.00000000
## stab 0.00000000 0.00000000 0.0000000000 0.00000000 0.00000000 0.00000000
## pc   0.00000000 0.00000000 0.0000000000 0.00000000 0.00000000 0.00000000
## oc   0.00000000 0.00000000 0.0000000000 0.00000000 0.00000000 0.00000000
## exp  -0.03354132 0.23958246 0.0708391690 -0.02498957 0.00000000 0.00000000
## selfp 0.17243931 0.04859239 0.0081145162 -0.01483171 0.00000000 0.00000000
## mot   0.00000000 0.00000000 -0.0384012871 0.00000000 0.09695019 -0.1148108
## ach   0.00000000 0.00000000 -0.0006945954 0.00000000 -0.12086364 0.1351670
##      mot ach
## loc    0  0
## stab   0  0
## pc     0  0
## oc     0  0
## exp    0  0
## selfp  0  0
## mot    0  0
## ach    0  0
```

```
A0
```

```

##          loc          stab          pc          oc          exp          selfp
## loc      0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000
## stab     0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000
## pc       0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000
## oc       0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000
## exp      0.003500016 -0.008104433  0.1292040  0.02437927  0.00000000  0.00000000
## selfp    -0.084270674  0.129486113  0.1090954 -0.00203309  0.00000000  0.00000000
## mot      0.00000000  0.00000000  0.1144972  0.00000000  0.36940727 -0.02110799
## ach      0.00000000  0.00000000  0.1916947  0.00000000  0.08137411  0.12303092
##          mot ach
## loc      0  0
## stab     0  0
## pc       0  0
## oc       0  0
## exp      0  0
## selfp    0  0
## mot      0  0
## ach      0  0

```

A0-A1

```

##          loc          stab          pc          oc          exp          selfp mot
## loc      0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0
## stab     0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0
## pc       0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0
## oc       0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0
## exp      0.03704134 -0.24768689  0.05836483  0.04936884  0.00000000  0.00000000  0
## selfp    -0.25670998  0.08089373  0.10098087  0.01279862  0.00000000  0.00000000  0
## mot      0.00000000  0.00000000  0.15289844  0.00000000  0.2724571  0.09370285  0
## ach      0.00000000  0.00000000  0.19238933  0.00000000  0.2022378 -0.01213611  0
##          ach
## loc      0
## stab     0
## pc       0
## oc       0
## exp      0
## selfp    0
## mot      0
## ach      0

```

A0+A1

```

##          loc          stab          pc          oc          exp          selfp mot
## loc      0.00000000  0.00000000  0.00000000  0.0000000000  0.00000000  0.00000000  0
## stab     0.00000000  0.00000000  0.00000000  0.0000000000  0.00000000  0.00000000  0
## pc       0.00000000  0.00000000  0.00000000  0.0000000000  0.00000000  0.00000000  0
## oc       0.00000000  0.00000000  0.00000000  0.0000000000  0.00000000  0.00000000  0
## exp      -0.03004131  0.2314780  0.20004317 -0.0006103028  0.00000000  0.00000000  0
## selfp    0.08816864  0.1780785  0.11720991 -0.0168648035  0.00000000  0.00000000  0
## mot      0.00000000  0.00000000  0.07609587  0.0000000000  0.46635746 -0.1359188  0
## ach      0.00000000  0.00000000  0.19100014  0.0000000000 -0.03948953  0.2581980  0
##          ach
## loc      0
## stab     0
## pc       0
## oc       0

```

```
## exp    0
## selfp  0
## mot    0
## ach    0
```

```
S0 <- mxEval(S0, fit3$mx.fit)
```

```
S1 <- mxEval(S1, fit3$mx.fit)
```

```
S1
```

```
##          loc          stab          pc          oc          exp          selfp
## loc    1.00000000  0.141677971  0.02026237  0.055747330  0.00000000  0.00000000
## stab   0.14167797  1.000000000  0.14475969 -0.006817282  0.00000000  0.00000000
## pc     0.02026237  0.144759691  1.00000000 -0.024232725  0.00000000  0.00000000
## oc     0.05574733 -0.006817282 -0.02423272  1.000000000  0.00000000  0.00000000
## exp    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.07266355
## selfp  0.00000000  0.000000000  0.00000000  0.000000000  0.07266355  0.00000000
## mot    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.00000000
## ach    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.00000000
##          mot          ach
## loc    0.00000000  0.00000000
## stab   0.00000000  0.00000000
## pc     0.00000000  0.00000000
## oc     0.00000000  0.00000000
## exp    0.00000000  0.00000000
## selfp  0.00000000  0.00000000
## mot    0.00000000 -0.09643732
## ach   -0.09643732  0.00000000
```

```
S0
```

```
##          loc          stab          pc          oc          exp          selfp
## loc    1.00000000  0.20325417  0.50205403 -0.19542617  0.00000000  0.00000000
## stab   0.2032542  1.000000000  0.02491816  0.01130842  0.00000000  0.00000000
## pc     0.5020540  0.02491816  1.00000000 -0.12916091  0.00000000  0.00000000
## oc    -0.1954262  0.01130842 -0.12916091  1.000000000  0.00000000  0.00000000
## exp    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.2887268
## selfp  0.00000000  0.000000000  0.00000000  0.000000000  0.2887268  0.00000000
## mot    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.00000000
## ach    0.00000000  0.000000000  0.00000000  0.000000000  0.00000000  0.00000000
##          mot          ach
## loc    0.00000000  0.00000000
## stab   0.00000000  0.00000000
## pc     0.00000000  0.00000000
## oc     0.00000000  0.00000000
## exp    0.00000000  0.00000000
## selfp  0.00000000  0.00000000
## mot    0.00000000  0.06136808
## ach    0.06136808  0.00000000
```

```
S0-S1
```

```
##          loc          stab          pc          oc          exp          selfp          mot
## loc    0.00000000  0.0615762  0.4817917 -0.2511735  0.00000000  0.00000000  0.00000000
## stab   0.0615762  0.00000000 -0.1198415  0.0181257  0.00000000  0.00000000  0.00000000
## pc     0.4817917 -0.1198415  0.00000000 -0.1049282  0.00000000  0.00000000  0.00000000
## oc    -0.2511735  0.0181257 -0.1049282  0.00000000  0.00000000  0.00000000  0.00000000
## exp    0.00000000  0.00000000  0.00000000  0.00000000  0.00000000  0.2160632  0.00000000
```

```

## selfp 0.000000 0.000000 0.000000 0.000000 0.2160632 0.000000 0.000000
## mot 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000
## ach 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.1578054
##      ach
## loc 0.000000
## stab 0.000000
## pc 0.000000
## oc 0.000000
## exp 0.000000
## selfp 0.000000
## mot 0.1578054
## ach 0.000000

```

S0+S1

```

##      loc      stab      pc      oc      exp      selfp
## loc 2.0000000 0.344932143 0.5223164 -0.139678845 0.0000000 0.0000000
## stab 0.3449321 2.000000000 0.1696778 0.004491136 0.0000000 0.0000000
## pc 0.5223164 0.169677848 2.0000000 -0.153393634 0.0000000 0.0000000
## oc -0.1396788 0.004491136 -0.1533936 2.000000000 0.0000000 0.0000000
## exp 0.0000000 0.000000000 0.0000000 0.000000000 0.0000000 0.3613903
## selfp 0.0000000 0.000000000 0.0000000 0.000000000 0.3613903 0.0000000
## mot 0.0000000 0.000000000 0.0000000 0.000000000 0.0000000 0.0000000
## ach 0.0000000 0.000000000 0.0000000 0.000000000 0.0000000 0.0000000
##      mot      ach
## loc 0.00000000 0.00000000
## stab 0.00000000 0.00000000
## pc 0.00000000 0.00000000
## oc 0.00000000 0.00000000
## exp 0.00000000 0.00000000
## selfp 0.00000000 0.00000000
## mot 0.00000000 -0.03506925
## ach -0.03506925 0.00000000

```