

CFA_Bifactor_NoCovariate

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1 Load packages & set working directory & read in data

```
library(metaSEM)

##      OpenMx
## "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".
# Working directory
wd = 'D:/Research/2023/CompareMASEM/CFA/Bifactor/Nmod/'
setwd(wd)
```

2 OSMASEM

2.1 Data preparation

```
# Modified based on the code from Jak & Cheung (2019)
## Exclude studies with missing values on Individualism
index_na <- is.na(Gnambs18$Individualism)
Gnambs18 <- lapply(Gnambs18, function(x) x[!index_na])

# Exclude studies that reported CFA results only
index <- Gnambs18$CorMat==1
Gnambs18 <- lapply(Gnambs18, function(x) x[index])

## Create a dataframe with the data and the asymptotic variances and covariances (acov)
my.df <- Cor2DataFrame(Gnambs18$data, Gnambs18$n, acov = "weighted")

## Add the standardized individualism as the moderator
## Standardization of the moderator improves the convergence.
Z1 = scale(Gnambs18$Individualism)
Z2 = scale(1/sqrt(Gnambs18$n))
my.df$data <- data.frame(my.df$data, Individualism=Z1,
```

```
lN=Z2,Int = Z1*Z2,check.names=FALSE)
summary(my.df)
```

```
##           Length Class      Mode
## data      1083  data.frame list
## n          34   -none-    numeric
## obslabels  10   -none-    character
## ylabels    45   -none-    character
## vlabels   1035  -none-    character
```

2.2 Model fitting

```
## Specify the bifactor model
model0 <- "G =~ g1*I1 + g2*I2 + g3*I3 + g4*I4 + g5*I5 +
           g6*I6 + g7*I7 + g8*I8 + g9*I9 + g10*I10
           POS =~ p1*I1 + p3*I3 + p4*I4 + p7*I7 + p10*I10
           NEG =~ n2*I2 + n5*I5 + n6*I6 + n8*I8 + n9*I9"
RAMO <- lavaan2RAM(model0, obs.variables = paste0("I", 1:10),std.lv = TRUE)

## Create heterogeneity variances
T0 <- create.Tau2(RAM=RAMO, RE.type="Diag", Transform="expLog", RE.startvalues=0.05)

## Create the A1 matrix with moderator effects of "Individualism"
Ax1 <- RAMO$A
Ax1[grep("\\*", Ax1)] <- "0*data.Individualism"
Ax1

##      I1 I2 I3 I4 I5 I6 I7 I8 I9 I10 G
## I1 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I2 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I3 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I4 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I5 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I6 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I7 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I8 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I9 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## I10 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Individualism"
## G  "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## POS "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## NEG "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
##      POS                                NEG
## I1  "0*data.Individualism" "0"
## I2  "0"                    "0*data.Individualism"
## I3  "0*data.Individualism" "0"
## I4  "0*data.Individualism" "0"
## I5  "0"                    "0*data.Individualism"
## I6  "0"                    "0*data.Individualism"
## I7  "0*data.Individualism" "0"
## I8  "0"                    "0*data.Individualism"
## I9  "0"                    "0*data.Individualism"
## I10 "0*data.Individualism" "0"
## G   "0"                    "0"
## POS "0"                    "0"
```

```

## NEG "0" "0"

## Create the A2 matrix with moderator effects of "Sample size"
Ax2 <- RAMO$A
Ax2[grepl("\\*", Ax2)] <- "0*data.lN"
Ax2

##      I1 I2 I3 I4 I5 I6 I7 I8 I9 I10 G      POS      NEG
## I1 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0*data.lN" "0"
## I2 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0" "0*data.lN"
## I3 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0*data.lN" "0"
## I4 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0*data.lN" "0"
## I5 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0" "0*data.lN"
## I6 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0" "0*data.lN"
## I7 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0*data.lN" "0"
## I8 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0" "0*data.lN"
## I9 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0" "0*data.lN"
## I10 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.lN" "0*data.lN" "0"
## G "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## POS "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## NEG "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"

## Create the A2 matrix with moderator effects of "Interaction"
Ax3 <- RAMO$A
Ax3[grepl("\\*", Ax3)] <- "0*data.Int"
Ax3

##      I1 I2 I3 I4 I5 I6 I7 I8 I9 I10 G      POS
## I1 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0*data.Int"
## I2 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0"
## I3 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0*data.Int"
## I4 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0*data.Int"
## I5 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0"
## I6 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0"
## I7 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0*data.Int"
## I8 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0"
## I9 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0"
## I10 "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0*data.Int" "0*data.Int"
## G "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## POS "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
## NEG "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0" "0"
##      NEG
## I1 "0"
## I2 "0*data.Int"
## I3 "0"
## I4 "0"
## I5 "0*data.Int"
## I6 "0*data.Int"
## I7 "0"
## I8 "0*data.Int"
## I9 "0*data.Int"
## I10 "0"
## G "0"
## POS "0"
## NEG "0"

```

```
## Create matrices with implicit diagonal constraints
M1 <- create.vechsR(A0=RAMO$A, S0=RAMO$S, F0=RAMO$F, Ax=list(Ax1,Ax2,Ax3))

## Fit the bifactor model with One-Stage MASEM
fit1 <- osmasem(model.name="Moderator Analysis", Mmatrix=M1,
                Tmatrix=T0, data=my.df)
summary(fit1, fitIndices= T)
```

```
## Summary of Moderator Analysis
```

```
##
```

```
## free parameters:
```

##	name	matrix	row	col	Estimate	Std.Error	A	z value
## 1	g1	A0	I1	G	0.7422871768	0.013604314		54.56263290
## 2	g2	A0	I2	G	0.5443719773	0.013029528		41.77986825
## 3	g3	A0	I3	G	0.6079117620	0.015680203		38.76938070
## 4	g4	A0	I4	G	0.5357209077	0.012350057		43.37801060
## 5	g5	A0	I5	G	0.5339217718	0.015039595		35.50107394
## 6	g6	A0	I6	G	0.5197582897	0.011441405		45.42783747
## 7	g7	A0	I7	G	0.6278765832	0.013038160		48.15683945
## 8	g8	A0	I8	G	0.3889611820	0.016476231		23.60741204
## 9	g9	A0	I9	G	0.6013834175	0.013587402		44.26036767
## 10	g10	A0	I10	G	0.7987067234	0.015029815		53.14148652
## 11	p1	A0	I1	POS	-0.0561741904	0.041674469		-1.34792816
## 12	p3	A0	I3	POS	0.5033756300	0.063801051		7.88977017
## 13	p4	A0	I4	POS	0.2872253240	0.037897829		7.57893865
## 14	p7	A0	I7	POS	0.2877760364	0.043003795		6.69187542
## 15	p10	A0	I10	POS	-0.0672153259	0.045590870		-1.47431549
## 16	n2	A0	I2	NEG	0.5758000298	0.024927253		23.09921705
## 17	n5	A0	I5	NEG	0.3127361715	0.024256203		12.89303917
## 18	n6	A0	I6	NEG	0.5899455865	0.023578191		25.02081584
## 19	n8	A0	I8	NEG	0.3764229670	0.029448132		12.78257532
## 20	n9	A0	I9	NEG	0.3747700223	0.023651535		15.84548419
## 21	g1_1	A1	I1	G	0.0297388863	0.014613242		2.03506417
## 22	g2_1	A1	I2	G	0.0841150940	0.011840752		7.10386403
## 23	g3_1	A1	I3	G	-0.0325586071	0.013139732		-2.47787457
## 24	g4_1	A1	I4	G	-0.0408254078	0.011358321		-3.59431714
## 25	g5_1	A1	I5	G	0.0615539093	0.013552030		4.54204347
## 26	g6_1	A1	I6	G	0.0798705500	0.010250415		7.79193340
## 27	g7_1	A1	I7	G	-0.0036697828	0.012211150		-0.30052721
## 28	g8_1	A1	I8	G	0.1669297611	0.015357980		10.86925241
## 29	g9_1	A1	I9	G	0.0619719766	0.012179246		5.08832601
## 30	g10_1	A1	I10	G	0.0003373662	0.014460828		0.02332966
## 31	p1_1	A1	I1	POS	0.0943102955	0.039092854		2.41246895
## 32	p3_1	A1	I3	POS	0.1453166482	0.047408082		3.06522945
## 33	p4_1	A1	I4	POS	0.0470422473	0.029980748		1.56908187
## 34	p7_1	A1	I7	POS	0.0726311996	0.039051226		1.85989551
## 35	p10_1	A1	I10	POS	0.1049069661	0.036554042		2.86991427
## 36	n2_1	A1	I2	NEG	-0.0450789292	0.023560935		-1.91329119
## 37	n5_1	A1	I5	NEG	-0.0760796954	0.021851100		-3.48173302
## 38	n6_1	A1	I6	NEG	-0.0379119549	0.022564077		-1.68019084
## 39	n8_1	A1	I8	NEG	-0.0127391542	0.027025788		-0.47137031
## 40	n9_1	A1	I9	NEG	-0.0352866344	0.021175183		-1.66641464
## 41	g1_2	A2	I1	G	0.0052889425	0.013025256		0.40605286
## 42	g2_2	A2	I2	G	0.0045541257	0.012821809		0.35518590

## 43	g3_2	A2	I3	G	0.0496203738	0.014194970	3.49563080
## 44	g4_2	A2	I4	G	0.0335584026	0.012891248	2.60319264
## 45	g5_2	A2	I5	G	-0.0118585986	0.014308182	-0.82879842
## 46	g6_2	A2	I6	G	-0.0161714233	0.011219264	-1.44139791
## 47	g7_2	A2	I7	G	0.0355740191	0.012890223	2.75976759
## 48	g8_2	A2	I8	G	-0.0372480293	0.016348305	-2.27840312
## 49	g9_2	A2	I9	G	-0.0008980839	0.013029929	-0.06892470
## 50	g10_2	A2	I10	G	0.0207162742	0.015261396	1.35742981
## 51	p1_2	A2	I1	POS	-0.0329350846	0.041593895	-0.79182497
## 52	p3_2	A2	I3	POS	-0.0513061061	0.071509248	-0.71747511
## 53	p4_2	A2	I4	POS	-0.0342196890	0.040517655	-0.84456242
## 54	p7_2	A2	I7	POS	-0.0591102328	0.049577102	-1.19228898
## 55	p10_2	A2	I10	POS	-0.0800945976	0.041962496	-1.90871861
## 56	n2_2	A2	I2	NEG	0.0254656946	0.024049972	1.05886586
## 57	n5_2	A2	I5	NEG	0.0409100652	0.022227559	1.84051096
## 58	n6_2	A2	I6	NEG	0.0244278896	0.022612508	1.08028217
## 59	n8_2	A2	I8	NEG	0.0304719621	0.028114894	1.08383700
## 60	n9_2	A2	I9	NEG	0.0208721953	0.021337358	0.97819961
## 61	g1_3	A3	I1	G	0.0325606227	0.011416111	2.85216423
## 62	g2_3	A3	I2	G	0.0016293370	0.011049951	0.14745196
## 63	g3_3	A3	I3	G	0.0258358493	0.011567063	2.23357041
## 64	g4_3	A3	I4	G	0.0019825389	0.012087243	0.16401911
## 65	g5_3	A3	I5	G	0.0045840481	0.012376976	0.37036898
## 66	g6_3	A3	I6	G	-0.0075236952	0.009792229	-0.76833325
## 67	g7_3	A3	I7	G	0.0189093594	0.011557639	1.63609185
## 68	g8_3	A3	I8	G	-0.0058331695	0.014329479	-0.40707478
## 69	g9_3	A3	I9	G	-0.0241756750	0.010999734	-2.19784179
## 70	g10_3	A3	I10	G	0.0071620408	0.014072560	0.50893660
## 71	p1_3	A3	I1	POS	-0.0417919348	0.035140782	-1.18927161
## 72	p3_3	A3	I3	POS	0.0502740628	0.053066538	0.94737786
## 73	p4_3	A3	I4	POS	-0.0303765739	0.027709490	-1.09625166
## 74	p7_3	A3	I7	POS	0.0051979908	0.042439891	0.12247889
## 75	p10_3	A3	I10	POS	-0.0065591855	0.034300438	-0.19122745
## 76	n2_3	A3	I2	NEG	0.0015112066	0.020498079	0.07372430
## 77	n5_3	A3	I5	NEG	-0.0009714541	0.018775269	-0.05174116
## 78	n6_3	A3	I6	NEG	0.0057172086	0.019661813	0.29077729
## 79	n8_3	A3	I8	NEG	0.0537594215	0.023442594	2.29323687
## 80	n9_3	A3	I9	NEG	0.0304046690	0.017886477	1.69986906
## 81	Tau1_1 vecTau1	1	1		-4.9543433135	0.261740642	-18.92844487
## 82	Tau1_2 vecTau1	2	1		-5.2276069660	0.269642224	-19.38719716
## 83	Tau1_3 vecTau1	3	1		-5.1164901462	0.265076010	-19.30197362
## 84	Tau1_4 vecTau1	4	1		-4.4837132252	0.262218122	-17.09917375
## 85	Tau1_5 vecTau1	5	1		-5.8573083393	0.292452903	-20.02821060
## 86	Tau1_6 vecTau1	6	1		-4.6490575150	0.260090954	-17.87473748
## 87	Tau1_7 vecTau1	7	1		-4.1147235643	0.251753251	-16.34427181
## 88	Tau1_8 vecTau1	8	1		-5.0637512347	0.263209812	-19.23845920
## 89	Tau1_9 vecTau1	9	1		-4.4525029545	0.293874015	-15.15106041
## 90	Tau1_10 vecTau1	10	1		-5.2697026136	0.264035814	-19.95828723
## 91	Tau1_11 vecTau1	11	1		-5.4448254988	0.267853714	-20.32760871
## 92	Tau1_12 vecTau1	12	1		-5.3982046582	0.272917064	-19.77965236
## 93	Tau1_13 vecTau1	13	1		-4.7867021559	0.282082662	-16.96914697
## 94	Tau1_14 vecTau1	14	1		-4.9418524559	0.254603456	-19.40999753
## 95	Tau1_15 vecTau1	15	1		-4.4329327928	0.256679061	-17.27033274
## 96	Tau1_16 vecTau1	16	1		-5.4907909545	0.284445121	-19.30351602

```

## 97  Tau1_17  vecTau1  17   1 -5.1981192238 0.261976494 -19.84192992
## 98  Tau1_18  vecTau1  18   1 -5.6241567562 0.277318440 -20.28050051
## 99  Tau1_19  vecTau1  19   1 -4.7621842385 0.270073709 -17.63290565
## 100 Tau1_20  vecTau1  20   1 -5.6006253818 0.284748047 -19.66870516
## 101 Tau1_21  vecTau1  21   1 -4.1550129657 0.253356363 -16.39987609
## 102 Tau1_22  vecTau1  22   1 -4.6854698036 0.263351155 -17.79171921
## 103 Tau1_23  vecTau1  23   1 -5.4442478748 0.264510148 -20.58237807
## 104 Tau1_24  vecTau1  24   1 -5.4906831264 0.272014018 -20.18529474
## 105 Tau1_25  vecTau1  25   1 -5.1581134998 0.281042721 -18.35348548
## 106 Tau1_26  vecTau1  26   1 -5.6025135694 0.274326592 -20.42278704
## 107 Tau1_27  vecTau1  27   1 -4.5028327152 0.265067656 -16.98748458
## 108 Tau1_28  vecTau1  28   1 -4.4673893294 0.262117903 -17.04343460
## 109 Tau1_29  vecTau1  29   1 -5.1997514284 0.269111444 -19.32192605
## 110 Tau1_30  vecTau1  30   1 -5.6487128056 0.276016376 -20.46513650
## 111 Tau1_31  vecTau1  31   1 -5.6254546285 0.285450384 -19.70729396
## 112 Tau1_32  vecTau1  32   1 -4.8249419104 0.259505204 -18.59285223
## 113 Tau1_33  vecTau1  33   1 -4.9706300078 0.267967441 -18.54938046
## 114 Tau1_34  vecTau1  34   1 -4.2133328740 0.261703614 -16.09963578
## 115 Tau1_35  vecTau1  35   1 -4.6714861974 0.277084192 -16.85944678
## 116 Tau1_36  vecTau1  36   1 -5.5252163505 0.267107974 -20.68532913
## 117 Tau1_37  vecTau1  37   1 -4.4151553241 0.257487200 -17.14708664
## 118 Tau1_38  vecTau1  38   1 -5.8722120692 0.285748509 -20.55028066
## 119 Tau1_39  vecTau1  39   1 -5.9462820904 0.279379782 -21.28386692
## 120 Tau1_40  vecTau1  40   1 -4.5179348151 0.253766967 -17.80347882
## 121 Tau1_41  vecTau1  41   1 -5.0009915694 0.256446830 -19.50108555
## 122 Tau1_42  vecTau1  42   1 -5.0682726029 0.257490252 -19.68335716
## 123 Tau1_43  vecTau1  43   1 -4.5611694744 0.261614258 -17.43471286
## 124 Tau1_44  vecTau1  44   1 -4.0136230252 0.252506759 -15.89511122
## 125 Tau1_45  vecTau1  45   1 -5.1796836374 0.264289871 -19.59849472
##      Pr(>|z|)
## 1  0.000000e+00
## 2  0.000000e+00
## 3  0.000000e+00
## 4  0.000000e+00
## 5  0.000000e+00
## 6  0.000000e+00
## 7  0.000000e+00
## 8  0.000000e+00
## 9  0.000000e+00
## 10 0.000000e+00
## 11 1.776815e-01
## 12 3.108624e-15
## 13 3.486100e-14
## 14 2.203282e-11
## 15 1.403967e-01
## 16 0.000000e+00
## 17 0.000000e+00
## 18 0.000000e+00
## 19 0.000000e+00
## 20 0.000000e+00
## 21 4.184442e-02
## 22 1.213252e-12
## 23 1.321676e-02
## 24 3.252435e-04

```

25 5.571155e-06
26 6.661338e-15
27 7.637750e-01
28 0.000000e+00
29 3.612380e-07
30 9.813873e-01
31 1.584489e-02
32 2.175031e-03
33 1.166289e-01
34 6.290031e-02
35 4.105831e-03
36 5.571079e-02
37 4.981801e-04
38 9.292019e-02
39 6.373763e-01
40 9.563086e-02
41 6.847038e-01
42 7.224503e-01
43 4.729426e-04
44 9.236004e-03
45 4.072185e-01
46 1.494723e-01
47 5.784249e-03
48 2.270257e-02
49 9.450496e-01
50 1.746447e-01
51 4.284627e-01
52 4.730810e-01
53 3.983552e-01
54 2.331480e-01
55 5.629840e-02
56 2.896609e-01
57 6.569326e-02
58 2.800165e-01
59 2.784371e-01
60 3.279756e-01
61 4.342266e-03
62 8.827753e-01
63 2.551135e-02
64 8.697161e-01
65 7.111076e-01
66 4.422892e-01
67 1.018204e-01
68 6.839531e-01
69 2.796038e-02
70 6.107967e-01
71 2.343328e-01
72 3.434463e-01
73 2.729687e-01
74 9.025198e-01
75 8.483474e-01
76 9.412298e-01
77 9.587349e-01
78 7.712217e-01

```

## 79 2.183437e-02
## 80 8.915556e-02
## 81 0.000000e+00
## 82 0.000000e+00
## 83 0.000000e+00
## 84 0.000000e+00
## 85 0.000000e+00
## 86 0.000000e+00
## 87 0.000000e+00
## 88 0.000000e+00
## 89 0.000000e+00
## 90 0.000000e+00
## 91 0.000000e+00
## 92 0.000000e+00
## 93 0.000000e+00
## 94 0.000000e+00
## 95 0.000000e+00
## 96 0.000000e+00
## 97 0.000000e+00
## 98 0.000000e+00
## 99 0.000000e+00
## 100 0.000000e+00
## 101 0.000000e+00
## 102 0.000000e+00
## 103 0.000000e+00
## 104 0.000000e+00
## 105 0.000000e+00
## 106 0.000000e+00
## 107 0.000000e+00
## 108 0.000000e+00
## 109 0.000000e+00
## 110 0.000000e+00
## 111 0.000000e+00
## 112 0.000000e+00
## 113 0.000000e+00
## 114 0.000000e+00
## 115 0.000000e+00
## 116 0.000000e+00
## 117 0.000000e+00
## 118 0.000000e+00
## 119 0.000000e+00
## 120 0.000000e+00
## 121 0.000000e+00
## 122 0.000000e+00
## 123 0.000000e+00
## 124 0.000000e+00
## 125 0.000000e+00
##
## To obtain confidence intervals re-run with intervals=TRUE
##
## Model Statistics:
##      | Parameters | Degrees of Freedom | Fit (-2lnL units)
##      |-----|-----|-----|
##      | Model:    | 125          | 1405          | -2931.723
##      | Saturated: | 90           | 1440          | -2647.332

```



```

## Independence:          45          1485          1502.869
## Number of observations/statistics: 104684/1530
##
## chi-square:  2 ( df=-35 ) = -284.3913,  p = NaN
## Information Criteria:
##      | df Penalty | Parameters Penalty | Sample-Size Adjusted
## AIC:      -5741.723      -2681.723      -2681.422
## BIC:      -19171.699      -1486.885      -1884.140
## CFI: 1.06075
## TLI: 1 (also known as NNFI)
## RMSEA: 0 [95% CI (NA, NA)]
## Prob(RMSEA <= 0.05): NA
## timestamp: 2023-12-13 15:03:57
## Wall clock time: 819.5288 secs
## optimizer: SLSQP
## OpenMx version number: 2.21.8
## Need help? See help(mxSummary)

```