Joachim_CFA_report

Jan Szczypiński

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First the analysis of GPTS

```
## This is lavaan 0.6-8
## lavaan is FREE software! Please report any bugs.

##

## ################################################################################

## This is semTools 0.5-4

## All users of R (or SEM) are invited to submit functions or ideas for functions.

## ################################################################################
```

recoding variables in dataset 2 and 3

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

First model, based on previous studies (pdf):

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      425.135      134.000        0.989        0.987        0.050        0.033

## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        reference persecutory
## alpha  0.9451981   0.9715748
## omega  0.9160101   0.9466453
## omega2 0.9160101   0.9466453
## omega3 0.9231342   0.9575649
## avevar 0.6910939   0.7828572
```

```
##              lhs op          rhs     mi    epc sepc.lv sepc.all sepc.nox
## 159    reference =~ partB_gpts10 19.104 -0.303  -0.303   -0.303   -0.303
## 310 partB_gptsb5 ~~ partB_gpts10 15.416  0.082   0.082    0.386    0.386
## 312 partB_gptsb6 ~~ partB_gptsb8 11.965  0.060   0.060    0.369    0.369
## 154    reference =~ partB_gptsb5 11.773 -0.229  -0.229   -0.229   -0.229
## 170 PartA_gptsa1 ~~ PartA_gptsa4 10.947  0.076   0.076    0.303    0.303
## 151    reference =~ partB_gptsb2 10.527  0.224   0.224    0.224    0.224
## 218 PartA_gptsa4 ~~ PartA_gptsa7  9.837 -0.096  -0.096   -0.359   -0.359
## 319 partB_gptsb8 ~~ partB_gpts10  9.546  0.064   0.064    0.314    0.314
## 303 partB_gptsb4 ~~ partB_gptsb8  8.973 -0.093  -0.093   -0.507   -0.507
## 292 partB_gptsb2 ~~ partB_gpts10  8.514 -0.104  -0.104   -0.474   -0.474
```

Second model. Item 8a was removed based on fit indices from previous step of the analysis

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      389.246      118.000        0.989        0.987        0.052        0.033
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        reference persecutory
## alpha  0.9337281   0.9715748
## omega  0.8979067   0.9466392
## omega2 0.8979067   0.9466392
## omega3 0.9049826   0.9574355
## avevar 0.6758938   0.7826914
```

```
##              lhs op          rhs     mi    epc sepc.lv sepc.all sepc.nox
## 151    reference =~ partB_gpts10 16.552 -0.302  -0.302   -0.302   -0.302
## 158  persecutory =~ PartA_gptsa7 13.958  0.271   0.271    0.271    0.271
## 284 partB_gptsb5 ~~ partB_gpts10 13.726  0.078   0.078    0.373    0.373
## 286 partB_gptsb6 ~~ partB_gptsb8 12.704  0.063   0.063    0.383    0.383
## 161 PartA_gptsa1 ~~ PartA_gptsa4 10.058  0.075   0.075    0.302    0.302
## 146    reference =~ partB_gptsb5  9.594 -0.221  -0.221   -0.221   -0.221
## 143    reference =~ partB_gptsb2  9.517  0.225   0.225    0.225    0.225
## 277 partB_gptsb4 ~~ partB_gptsb8  8.992 -0.093  -0.093   -0.509   -0.509
## 293 partB_gptsb8 ~~ partB_gpts10  8.750  0.062   0.062    0.306    0.306
## 266 partB_gptsb2 ~~ partB_gpts10  8.670 -0.106  -0.106   -0.479   -0.479
```

Difference in robust chi-square test (see Szczypiński et al., 2021 section 2.3.2) between models 1 i 2

```
## [1] "test statistic: " "38.732"           "p value: "        "0.001"
```

model 3 with covariance added between partB_gptsb2 and partB_gptsb4 based on mod indices:

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      389.658      117.000        0.989        0.987        0.052        0.033
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        reference persecutory
## alpha  0.9337281   0.9715748
## omega  0.8979056   0.9464326
## omega2 0.8979056   0.9464326
## omega3 0.9049787   0.9571871
## avevar 0.6758931   0.7825159
```

```
##              lhs op          rhs     mi    epc sepc.lv sepc.all sepc.nox
## 151    reference =~ partB_gpts10 16.552 -0.302  -0.302   -0.302   -0.302
## 158  persecutory =~ PartA_gptsa7 13.958  0.271   0.271    0.271    0.271
## 284 partB_gptsb5 ~~ partB_gpts10 13.726  0.078   0.078    0.373    0.373
## 286 partB_gptsb6 ~~ partB_gptsb8 12.704  0.063   0.063    0.383    0.383
## 161 PartA_gptsa1 ~~ PartA_gptsa4 10.058  0.075   0.075    0.302    0.302
## 146    reference =~ partB_gptsb5  9.594 -0.221  -0.221   -0.221   -0.221
## 143    reference =~ partB_gptsb2  9.517  0.225   0.225    0.225    0.225
## 277 partB_gptsb4 ~~ partB_gptsb8  8.992 -0.093  -0.093   -0.509   -0.509
## 293 partB_gptsb8 ~~ partB_gpts10  8.750  0.062   0.062    0.306    0.306
## 266 partB_gptsb2 ~~ partB_gpts10  8.670 -0.106  -0.106   -0.479   -0.479
```

Difference in robust chi-square test (see Szczypiński et al., 2021 section 2.3.2) between models 2 i 3

```
## [1] "test statistic: " "0.588"            "p value: "        "0.443"
```

model 4 with covariance added between partB_gptsb3 and partB_gptsb4 based on mod indices:

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      389.266      116.000        0.989        0.987        0.052        0.033
```

```
## [1] "test statistic: " "0.845"            "p value: "        "0.358"
```

```
##              lhs op          rhs     mi    epc sepc.lv sepc.all sepc.nox
## 153    reference =~ partB_gpts10 16.776 -0.305  -0.305   -0.305   -0.305
## 160  persecutory =~ PartA_gptsa7 13.944  0.272   0.272    0.272    0.272
## 284 partB_gptsb5 ~~ partB_gpts10 13.615  0.078   0.078    0.373    0.373
## 286 partB_gptsb6 ~~ partB_gptsb8 12.577  0.062   0.062    0.382    0.382
## 163 PartA_gptsa1 ~~ PartA_gptsa4 10.053  0.075   0.075    0.302    0.302
## 145    reference =~ partB_gptsb2  9.994  0.235   0.235    0.235    0.235
## 148    reference =~ partB_gptsb5  9.863 -0.225  -0.225   -0.225   -0.225
## 277 partB_gptsb4 ~~ partB_gptsb8  8.696 -0.092  -0.092   -0.501   -0.501
## 293 partB_gptsb8 ~~ partB_gpts10  8.691  0.061   0.061    0.305    0.305
## 267 partB_gptsb2 ~~ partB_gpts10  8.627 -0.106  -0.106   -0.478   -0.478
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        reference persecutory
## alpha  0.9337281   0.9715748
## omega  0.8979049   0.9458144
## omega2 0.8979049   0.9458144
## omega3 0.9049765   0.9564806
## avevar 0.6758932   0.7821153
```

Difference in robust chi-square test (see Szczypiński et al., 2021 section 2.3.2) between models 3 i 4

```
## [1] "test statistic: " "0.845"            "p value: "        "0.358"
```

model 5 z dodaną kowariancją między partB_gptsb2 ~~ partB_gptsb3 na podstawie mod indices:

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      386.945      115.000        0.989        0.987        0.052        0.033
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        reference persecutory
## alpha  0.9337281   0.9715748
## omega  0.8979018   0.9444731
## omega2 0.8979018   0.9444731
## omega3 0.9049659   0.9548127
## avevar 0.6758914   0.7811189
```

summary of fit measures for three models of GPTSA

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              425.135             134.000                0.585
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.989               0.987                0.050
##                 srmr
##                0.033
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              389.246             118.000                0.569
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.989               0.987                0.052
##                 srmr
##                0.033
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              389.658             117.000                0.568
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.989               0.987                0.052
##                 srmr
##                0.033
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              389.266             116.000                0.567
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.989               0.987                0.052
##                 srmr
##                0.033
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              386.945             115.000                0.565
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.989               0.987                0.052
##                 srmr
##                0.033
```

Difference in robust chi-square test (see Szczypiński et al., 2021 section 2.3.2) between models 4 i 5

```
## [1] "test statistic: " "2.515"            "p value: "        "0.113"
```

MUSEQ is next

Model 1

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##             2930.988             804.000                1.128
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.899               0.892                0.062
##                 srmr
##                0.063
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##         auditory    visual olfactory gustatory    bodily  presence
## alpha  0.8344134 0.8650326 0.8954536 0.9077042 0.9057060 0.8694990
## omega  0.8033959 0.8321705 0.8673721 0.8772246 0.8841962 0.8351232
## omega2 0.8033959 0.8321705 0.8673721 0.8772246 0.8841962 0.8351232
## omega3 0.8236923 0.8596939 0.8992562 0.9185328 0.9074923 0.8521143
## avevar 0.4381763 0.4620095 0.5780030 0.5811473 0.5702036 0.6450147
```

```
##            lhs op      rhs      mi   epc sepc.lv sepc.all sepc.nox
## 1141  MUSEQ3_3 ~~ MUSEQ4_3 210.112 0.323   0.323    0.735    0.735
## 395   auditory =~ MUSEQ6_1  94.638 0.439   0.439    0.439    0.439
## 661    MUSEQ_3 ~~ MUSEQ2_3  85.775 0.301   0.301    0.476    0.476
## 1204  MUSEQ3_6 ~~ MUSEQ3_7  83.931 0.217   0.217    0.613    0.613
## 477  gustatory =~ MUSEQ2_3  82.367 0.392   0.392    0.392    0.392
## 450  olfactory =~ MUSEQ4_3  80.065 0.612   0.612    0.612    0.612
## 429     visual =~ MUSEQ6_1  77.930 0.431   0.431    0.431    0.431
## 532     bodily =~ MUSEQ6_1  71.718 0.360   0.360    0.360    0.360
## 442  olfactory =~ MUSEQ2_3  68.029 0.319   0.319    0.319    0.319
## 1432  MUSEQ6_2 ~~ MUSEQ6_3  67.581 0.279   0.279    0.663    0.663
```

Model 2 without items 3.3 i 4.3

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##             2374.362             725.000                1.082
##           cfi.scaled           tli.scaled         rmsea.scaled
##                0.916                0.910                0.057
##                 srmr
##                0.060
```

```
##            lhs op      rhs      mi   epc sepc.lv sepc.all sepc.nox
## 631    MUSEQ_3 ~~ MUSEQ2_3 100.753 0.326   0.326    0.492    0.492
## 377   auditory =~ MUSEQ6_1  99.648 0.456   0.456    0.456    0.456
## 409     visual =~ MUSEQ6_1  84.801 0.458   0.458    0.458    0.458
## 508     bodily =~ MUSEQ6_1  76.303 0.376   0.376    0.376    0.376
## 1325  MUSEQ6_2 ~~ MUSEQ6_3  67.317 0.279   0.279    0.666    0.666
## 1118  MUSEQ3_6 ~~ MUSEQ3_7  66.341 0.201   0.201    0.599    0.599
## 1313  MUSEQ5_7 ~~ MUSEQ5_8  55.788 0.190   0.190    0.502    0.502
## 662    MUSEQ_4 ~~  MUSEQ_5  52.986 0.211   0.211    0.331    0.331
## 547   presence =~ MUSEQ5_8  50.197 0.283   0.283    0.283    0.283
## 455  gustatory =~ MUSEQ2_2  49.646 0.296   0.296    0.296    0.296
```

Comparison between models 1 and 2 of MUSEQ

```
## [1] "test statistic: " "475.027"          "p value: "        "0"
```

Model 2 without item 6.1

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##     2185.913      687.000        0.922        0.916        0.056        0.058
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##         auditory    visual olfactory gustatory    bodily  presence
## alpha  0.8344134 0.8650326 0.8894462 0.9066283 0.9057060 0.8493407
## omega  0.8027678 0.8310620 0.8565348 0.8722275 0.8840501 0.7784855
## omega2 0.8027678 0.8310620 0.8565348 0.8722275 0.8840501 0.7784855
## omega3 0.8219198 0.8556483 0.8827242 0.8989991 0.9071091 0.7935248
## avevar 0.4378164 0.4619508 0.5986320 0.6068100 0.5702232 0.6753243
```

Comparison between models 2 and 3 of MUSEQ

```
## [1] "test statistic: " "166.467"          "p value: "        "0"
```

summary of fit measures for three models of MUSEQ

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##             2930.988             804.000                1.128
##           cfi.scaled           tli.scaled         rmsea.scaled
##                0.899                0.892                0.062
##                 srmr
##                0.063
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##             2374.362             725.000                1.082
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.916               0.910                0.057
##                 srmr
##                0.060
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##             2185.913             687.000                1.053
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.922               0.916                0.056
##                 srmr
##                0.058
```

Analiza BAPS

1st model

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##     1130.643      132.000        0.968        0.962        0.085        0.082
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        survival_strategy negative_beliefs normalizing_beliefs
## alpha          0.9238154        0.9367321           0.9294762
## omega          0.6783573        0.9137507           0.9129554
## omega2         0.6783573        0.9137507           0.9129554
## omega3         0.7118750        0.9250568           0.9475383
## avevar         0.7049489        0.7278750           0.7247391
```

```
##                     lhs op    rhs      mi    epc sepc.lv sepc.all sepc.nox
## 310              BAPS13 ~~ BAPS14 155.603  0.232   0.232    0.816    0.816
## 160 normalizing_beliefs =~  BAPS1 132.971  0.359   0.359    0.359    0.359
## 322              BAPS16 ~~ BAPS17 105.390  0.186   0.186    1.313    1.313
## 141   survival_strategy =~ BAPS12  62.149 -0.197  -0.197   -0.197   -0.197
## 171 normalizing_beliefs =~ BAPS12  53.847 -0.160  -0.160   -0.160   -0.160
## 220               BAPS4 ~~  BAPS5  53.497  0.185   0.185    0.872    0.872
## 186               BAPS1 ~~ BAPS16  53.061  0.248   0.248    0.902    0.902
## 155    negative_beliefs =~ BAPS14  51.477  0.147   0.147    0.147    0.147
## 290              BAPS10 ~~ BAPS12  44.995  0.132   0.132    1.015    1.015
## 317              BAPS14 ~~ BAPS17  38.219 -0.141  -0.141   -0.792   -0.792
```

Model 2 - without BAPS1

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      903.224      116.000        0.974        0.970        0.081        0.070
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        survival_strategy negative_beliefs normalizing_beliefs
## alpha          0.9295837        0.9367321           0.9294762
```

```
## omega          0.8858424        0.9137498           0.9130740
## omega2         0.8858424        0.9137498           0.9130740
## omega3         0.9048820        0.9250671           0.9477461
## avevar         0.7414225        0.7279091           0.7247438
```

```
##                     lhs op    rhs      mi    epc sepc.lv sepc.all sepc.nox
## 284              BAPS13 ~~ BAPS14 148.545  0.229   0.229    0.813    0.813
## 296              BAPS16 ~~ BAPS17 114.235  0.197   0.197    1.387    1.387
## 134   survival_strategy =~ BAPS12  58.813 -0.206  -0.206   -0.206   -0.206
## 147    negative_beliefs =~ BAPS14  52.865  0.148   0.148    0.148    0.148
## 162 normalizing_beliefs =~ BAPS12  50.260 -0.157  -0.157   -0.157   -0.157
## 264              BAPS10 ~~ BAPS12  44.350  0.131   0.131    1.008    1.008
## 291              BAPS14 ~~ BAPS17  41.524 -0.148  -0.148   -0.847   -0.847
## 290              BAPS14 ~~ BAPS16  37.687 -0.149  -0.149   -0.676   -0.676
## 149    negative_beliefs =~ BAPS16  32.384 -0.128  -0.128   -0.128   -0.128
## 287              BAPS13 ~~ BAPS17  30.854 -0.132  -0.132   -0.731   -0.731
```

Comparison between model 1 and 2 of BAPS

```
## [1] "test statistic: " "200.528"          "p value: "        "0"
```

MODEL 3 with covariance added between BAPS13 i BAPS14

```
## chisq.scaled    df.scaled   cfi.scaled   tli.scaled rmsea.scaled         srmr
##      742.108      115.000        0.979        0.976        0.072        0.069
```

```
## For constructs with categorical indicators, the alpha and the average variance extracted are calcula
```

```
##        survival_strategy negative_beliefs normalizing_beliefs
## alpha          0.9295837        0.9367321           0.9294762
## omega          0.8858410        0.9137363           0.8800942
## omega2         0.8858410        0.9137363           0.8800942
## omega3         0.9048735        0.9250082           0.8930653
## avevar         0.7414095        0.7278819           0.6919380
```

Comparison between model 12 and 3 of BAPS

```
## [1] "test statistic: " "74.144"           "p value: "        "0"
```

summary of fit measures for three models of BAPS

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##            1130.643             132.000                0.921
##           cfi.scaled          tli.scaled         rmsea.scaled
##                0.968               0.962                0.085
##                 srmr
##                0.082
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              903.224             116.000                0.876
##          cfi.scaled          tli.scaled         rmsea.scaled
##                0.974               0.970                0.081
##                 srmr
##                0.070
```

```
##         chisq.scaled           df.scaled chisq.scaling.factor
##              742.108             115.000                0.867
##          cfi.scaled          tli.scaled         rmsea.scaled
##                0.979               0.976                0.072
##                 srmr
##                0.069
```