Structural equations modeling

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Data

Write a report on the analysis (10 pages not including appendices & references)

- Theoretical framing of the research problem / Research questions / Hypotheses
- Short description of the dataset used
- Modeling strategy
- Results

```
setwd("C:/Users/pamel/Documents/ESS/")
load("ESS5-9Round.RData")

items_o <- c("iphlppl", "iplylfr", "ipeqopt", "ipudrst", "impenv")

vars <- c(items_o,
          "cntry", "dweight", "hhmmb", "gndr", "agea", "GINI","GDP", "HDI",
          "dvrcdeva", "domicil", "eisced","name","essround","idno")
cont <- c("hhmmb","agea")
cat <- vars[which(!(vars%in%c(cont,"name","essround","idno","cntry","dweight")))]
```

```
round <- c(8,9)
countries <- c("Austria","Belgium","Czechia","Estonia","France","Germany",
               "Ireland","Italy","Netherlands","Norway","Poland","Slovenia","Switzerland","United Kingdo
#"Hungary", "Finland"
ds_filtradaAll <- ds %>% filter(cntry %in% countries & essround %in% round) %>%
  select(vars)
ds_filtradaAll <- copy_labels(ds_filtradaAll, ds)

table(as_character(ds_filtradaAll$cntry),ds_filtradaAll$essround)
```

```
##
##                     8    9
##   Austria        2010 2499
##   Belgium        1766 1767
##   Czechia        2269 2398
##   Estonia        2019 1904
##   France         2070 2010
##   Germany        2852 2358
##   Ireland        2757 2216
##   Italy          2626 2745
##   Netherlands    1681 1673
##   Norway         1545 1406
##   Poland         1694 1500
##   Slovenia       1307 1318
##   Switzerland    1525 1542
##   United Kingdom 1959 2204
```

```
by(ds_filtradaAll, ds_filtradaAll$essround,function(x) describe(x))
```

```
## Warning in describe(x): NAs introduced by coercion

## Warning in NextMethod(): NAs introduced by coercion

## Warning in FUN(newX[, i], ...): no non-missing arguments to min; returning
## Inf

## Warning in FUN(newX[, i], ...): no non-missing arguments to min; returning
## Inf

## Warning in FUN(newX[, i], ...): no non-missing arguments to max; returning
## -Inf

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## Warning in FUN(newX[, i], ...): no non-missing arguments to min; returning
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## Inf

## Warning in FUN(newX[, i], ...): no non-missing arguments to max; returning
## -Inf

## Warning in FUN(newX[, i], ...): no non-missing arguments to max; returning
## -Inf

## ds_filtradaAll$essround: 8
##          vars     n        mean           sd  median    trimmed     mad
## iphlppl     1 27837        2.19         0.98    2.00       2.08    1.48
## iplylfr     2 27833        1.94         0.89    2.00       1.83    1.48
## ipeqopt     3 27810        2.19         1.06    2.00       2.06    1.48
## ipudrst     4 27780        2.35         1.04    2.00       2.26    1.48
## impenv      5 27849        2.17         1.03    2.00       2.05    1.48
## cntry*      6 28080         NaN           NA      NA        NaN      NA
## dweight     7 28080        1.00         0.36    1.00       0.97    0.08
## hhmmb       8 27962        2.58         1.34    2.00       2.44    1.48
## gndr        9 28078        1.52         0.50    2.00       1.52    0.00
## agea       10 27973       49.05        18.55   49.00      48.88   22.24
## GINI       11 28080       28.85         2.67   29.40      28.84    3.26
## GDP        12 28080        2.17         0.78    2.19       2.12    0.70
## HDI        13 28080        0.91         0.03    0.92       0.91    0.03
## dvrcdeva   14 27923        1.84         0.37    2.00       1.93    0.00
## domicil    15 28056        3.05         1.18    3.00       3.09    1.48
## eisced     16 27983        4.02         3.04    4.00       3.86    1.48
## name*      17 28080         NaN           NA      NA        NaN      NA
## essround   18 28080        8.00         0.00    8.00       8.00    0.00
## idno       19 28080 49857026.67 142092162.41 2917.00 9232455.03 3104.56
##             min          max        range  skew kurtosis        se
## iphlppl    1.00         6.00         5.00  0.81     0.67      0.01
## iplylfr    1.00         6.00         5.00  1.10     1.64      0.01
## ipeqopt    1.00         6.00         5.00  0.96     0.83      0.01
## ipudrst    1.00         6.00         5.00  0.83     0.63      0.01
```

```
## impenv    1.00         6.00         5.00  0.86     0.59      0.01
## cntry*     Inf         -Inf         -Inf    NA       NA        NA
## dweight   0.04         6.21         6.17  2.50    20.92      0.00
## hhmmb     1.00        12.00        11.00  0.88     0.79      0.01
## gndr      1.00         2.00         1.00 -0.07    -2.00      0.00
## agea     15.00       100.00        85.00  0.05    -0.90      0.11
## GINI     24.40        33.10         8.70 -0.03    -1.03      0.02
## GDP       1.07         3.68         2.61  0.38    -0.70      0.00
## HDI       0.86         0.95         0.09 -0.06    -1.43      0.00
## dvrcdeva  1.00         2.00         1.00 -1.86     1.47      0.00
## domicil   1.00         5.00         4.00 -0.43    -0.76      0.01
## eisced    1.00        55.00        54.00 10.75   177.06      0.02
## name*      Inf         -Inf         -Inf    NA       NA        NA
## essround  8.00         8.00         0.00   NaN      NaN      0.00
## idno      1.00 551603139.00 551603138.00  3.14     8.19 847952.59
## ------------------------------------------------------------
## ds_filtradaAll$essround: 9
##          vars     n     mean       sd   median  trimmed      mad   min
## iphlppl     1 27207     2.15     0.96     2.00     2.05     1.48  1.00
## iplylfr     2 27227     1.90     0.88     2.00     1.79     1.48  1.00
## ipeqopt     3 27145     2.18     1.05     2.00     2.04     1.48  1.00
## ipudrst     4 27124     2.33     1.03     2.00     2.24     1.48  1.00
## impenv      5 27228     2.00     0.99     2.00     1.87     1.48  1.00
## cntry*      6 27540      NaN       NA       NA      NaN       NA   Inf
## dweight     7 27540     1.00     0.32     1.00     0.98     0.03  0.31
## hhmmb       8 27466     2.58     1.34     2.00     2.44     1.48  1.00
## gndr        9 27540     1.52     0.50     2.00     1.53     0.00  1.00
## agea       10 27389    50.09    18.73    50.00    50.03    22.24 15.00
## GINI       11 27540    28.59     3.15    28.50    28.59     3.85 23.40
## GDP        12 27540     2.86     2.00     2.42     2.53     1.43  0.77
## HDI        13 27540     0.91     0.03     0.91     0.91     0.03  0.87
## dvrcdeva   14 27431     1.84     0.37     2.00     1.93     0.00  1.00
## domicil    15 27522     3.00     1.19     3.00     3.04     1.48  1.00
## eisced     16 27469     4.19     3.51     4.00     3.99     1.48  1.00
## name*      17 27540      NaN       NA       NA      NaN       NA   Inf
## essround   18 27540     9.00     0.00     9.00     9.00     0.00  9.00
## idno       19 27540 24377.60 14025.85 24418.00 24390.60 18015.81  1.00
##               max    range  skew kurtosis    se
## iphlppl      6.00     5.00  0.84     0.78  0.01
## iplylfr      6.00     5.00  1.15     1.94  0.01
## ipeqopt      6.00     5.00  1.00     0.97  0.01
## ipudrst      6.00     5.00  0.86     0.74  0.01
## impenv       6.00     5.00  1.06     1.11  0.01
## cntry*       -Inf     -Inf    NA       NA    NA
## dweight      5.13     4.82  2.91    23.82  0.00
## hhmmb       15.00    14.00  0.92     1.18  0.01
## gndr         2.00     1.00 -0.10    -1.99  0.00
## agea        90.00    75.00  0.01    -0.94  0.11
## GINI        33.50    10.10  0.08    -1.04  0.02
## GDP          8.17     7.40  1.43     1.35  0.01
## HDI          0.95     0.08  0.03    -1.38  0.00
## dvrcdeva     2.00     1.00 -1.87     1.49  0.00
## domicil      5.00     4.00 -0.39    -0.84  0.01
## eisced      55.00    54.00 10.57   150.23  0.02
```

```
## name*        -Inf     -Inf    NA       NA    NA
## essround     9.00     0.00   NaN      NaN  0.00
## idno     48636.00 48635.00 -0.01    -1.20 84.52
```

```
dat2 <- data.frame(reverse.code(keys = rep(-1,5), items = ds_filtradaAll[,items_o], mini = rep(1,5), ma
colnames(dat2) <- paste(items_o,"_r",sep = "")
labels = num_lab("
             1 Not like me at all
             2 Not like me
             3 A little like me
             4 Somewhat like me
             5 Like me
             6 Very much like me
")
val_lab(dat2$iphlppl_r) <- labels
val_lab(dat2$iplylfr_r) <- labels
val_lab(dat2$ipeqopt_r) <- labels
val_lab(dat2$ipudrst_r) <- labels
val_lab(dat2$impenv_r) <- labels
var_lab(dat2$iphlppl_r) <- var_lab(ds_filtradaAll$iphlppl)
var_lab(dat2$iplylfr_r) <- var_lab(ds_filtradaAll$iplylfr)
var_lab(dat2$ipeqopt_r) <- var_lab(ds_filtradaAll$ipeqopt)
var_lab(dat2$ipudrst_r) <- var_lab(ds_filtradaAll$ipudrst)
var_lab(dat2$impenv_r) <- var_lab(ds_filtradaAll$impenv)

ds_filtradaAll <- cbind(ds_filtradaAll,dat2)
items <- paste(items_o,"_r",sep = "")
for (j in round){
  for (i in items){
    print(paste(i,": ", var_lab(eval(parse(text=paste("ds_filtradaAll$",i))))))
    print(use_labels(ds_filtradaAll[ds_filtradaAll$essround == j,],
                     table(eval(parse(text=paste("ds_filtradaAll$",i))), as.character(ds_filtradaAll$cnt
    print(use_labels(ds_filtradaAll[ds_filtradaAll$essround == j,],
                     round(prop.table(table(eval(parse(text=paste("ds_filtradaAll$",i)))),as.character(ds
  }
}
```

```
## [1] "iphlppl_r :  Important to help people and care for others well-being"
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all       45       2      57       9     15      10
##   Not like me              66      29     202     115    107      73
##   A little like me        266      83     783     384    464     182
##   Somewhat like me        942     669    1616    1163    778     814
##   Like me                1837    1825    1428    1699   1424    2496
##   Very much like me      1308     914     521     539   1257    1586
##   <NA>                     45      11      60      14     35      49
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all       16    27           3      3      7        6
##   Not like me              89    63          32     24     66       21
##   A little like me        344   390          84    276    326       46
##   Somewhat like me        768  1765         640    550    814      290
##   Like me                2144  1999        1779   1338   1399     1472
##   Very much like me      1578  1000         793    737    510      766
```

```
##   <NA>                    34   127          23     23     72       24
##
##                       Switzerland United Kingdom
##   Not like me at all            4              5
##   Not like me                  21             39
##   A little like me             77            218
##   Somewhat like me            463            567
##   Like me                    1452           1844
##   Very much like me          1026           1455
##   <NA>                         24             35
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all    21.53    0.96   27.27    4.31   7.18    4.78
##   Not like me            6.97    3.06   21.33   12.14  11.30    7.71
##   A little like me       6.78    2.12   19.96    9.79  11.83    4.64
##   Somewhat like me       7.96    5.65   13.65    9.82   6.57    6.88
##   Like me                7.61    7.56    5.92    7.04   5.90   10.34
##   Very much like me      9.35    6.53    3.72    3.85   8.98   11.34
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all     7.66 12.92        1.44   1.44   3.35     2.87
##   Not like me            9.40  6.65        3.38   2.53   6.97     2.22
##   A little like me       8.77  9.94        2.14   7.04   8.31     1.17
##   Somewhat like me       6.49 14.91        5.41   4.65   6.88     2.45
##   Like me                8.88  8.28        7.37   5.54   5.80     6.10
##   Very much like me     11.28  7.15        5.67   5.27   3.65     5.48
##
##                       Switzerland United Kingdom
##   Not like me at all           1.91           2.39
##   Not like me                  2.22           4.12
##   A little like me             1.96           5.56
##   Somewhat like me             3.91           4.79
##   Like me                      6.02           7.64
##   Very much like me            7.33          10.40
## [1] "iplylfr_r :  Important to be loyal to friends and devote to people close"
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all       26       1      24      11     17      10
##   Not like me              37      13      88      44     44      20
##   A little like me        179      37     381     146    224      50
##   Somewhat like me        445     313    1262     594    566     278
##   Like me                1611    1895    1871    2218   1397    2204
##   Very much like me      2180    1264     979     897   1800    2598
##   <NA>                     31      10      62      13     32      50
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all       20    21           3      1      8        8
##   Not like me              87    43          37     12     29       58
##   A little like me        341   247          51     95    167       92
##   Somewhat like me        726  1389         434    253    483      366
##   Like me                2196  2282        1927   1447   1514     1383
##   Very much like me      1564  1273         875   1121    932      688
##   <NA>                     39   116          27     22     61       30
##
```

```
##                       Switzerland United Kingdom
##   Not like me at all            2              8
##   Not like me                  15             54
##   A little like me             27            212
##   Somewhat like me            204            473
##   Like me                    1331           1912
##   Very much like me          1461           1464
##   <NA>                         27             40
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all    16.25    0.62   15.00    6.88  10.62    6.25
##   Not like me            6.37    2.24   15.15    7.57   7.57    3.44
##   A little like me       7.96    1.65   16.94    6.49   9.96    2.22
##   Somewhat like me       5.72    4.02   16.21    7.63   7.27    3.57
##   Like me                6.40    7.52    7.43    8.81   5.55    8.75
##   Very much like me     11.42    6.62    5.13    4.70   9.43   13.60
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all    12.50 13.12        1.88   0.62   5.00     5.00
##   Not like me           14.97  7.40        6.37   2.07   4.99     9.98
##   A little like me      15.16 10.98        2.27   4.22   7.43     4.09
##   Somewhat like me       9.32 17.84        5.57   3.25   6.20     4.70
##   Like me                8.72  9.06        7.65   5.74   6.01     5.49
##   Very much like me      8.19  6.67        4.58   5.87   4.88     3.60
##
##                       Switzerland United Kingdom
##   Not like me at all         1.25           5.00
##   Not like me                2.58           9.29
##   A little like me           1.20           9.43
##   Somewhat like me           2.62           6.08
##   Like me                    5.28           7.59
##   Very much like me          7.65           7.67
## [1] "ipeqopt_r :  Important that people are treated equally and have equal opportunities"
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all       47       8      53      51     18      48
##   Not like me              86      54     212     329     71     194
##   A little like me        296     117     568     420    271     240
##   Somewhat like me        902     699    1362    1059    644     750
##   Like me                1800    1680    1627    1627   1215    2340
##   Very much like me      1333     957     751     422   1825    1581
##   <NA>                     45      18      94      15     36      57
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all       34    31          11     12     20        8
##   Not like me             129   112          65    104     80       54
##   A little like me        438   402          77    292    223       48
##   Somewhat like me        854  1727         501    437    575      222
##   Like me                1937  1834        1871   1318   1425     1325
##   Very much like me      1542  1121         805    763    809      940
##   <NA>                     39   144          24     25     62       28
##
##                       Switzerland United Kingdom
##   Not like me at all           21             28
```

```
##   Not like me               102            139
##   A little like me          178            326
##   Somewhat like me          426            663
##   Like me                  1342           1661
##   Very much like me         962           1304
##   <NA>                       36             42
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all   12.05    2.05   13.59   13.08   4.62   12.31
##   Not like me           4.97    3.12   12.25   19.01   4.10   11.21
##   A little like me      7.60    3.00   14.58   10.78   6.96    6.16
##   Somewhat like me      8.34    6.46   12.59    9.79   5.95    6.93
##   Like me               7.83    7.30    7.07    7.07   5.28   10.17
##   Very much like me     8.82    6.33    4.97    2.79  12.07   10.46
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all    8.72  7.95        2.82   3.08   5.13     2.05
##   Not like me           7.45  6.47        3.76   6.01   4.62     3.12
##   A little like me     11.24 10.32        1.98   7.49   5.72     1.23
##   Somewhat like me      7.89 15.96        4.63   4.04   5.31     2.05
##   Like me               8.42  7.97        8.13   5.73   6.20     5.76
##   Very much like me    10.20  7.42        5.33   5.05   5.35     6.22
##
##                      Switzerland United Kingdom
##   Not like me at all        5.38           7.18
##   Not like me               5.89           8.03
##   A little like me          4.57           8.37
##   Somewhat like me          3.94           6.13
##   Like me                   5.83           7.22
##   Very much like me         6.36           8.63
## [1] "ipudrst_r :  Important to understand different people"
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all      63       9      96      15     37      18
##   Not like me            129      72     296     137    142     108
##   A little like me       360     170     815     343    482     223
##   Somewhat like me      1168     852    1628     956    823     787
##   Like me               1728    1811    1357    1899   1412    2707
##   Very much like me     1011     602     384     560   1150    1310
##   <NA>                    50      17      91      13     34      57
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all      33    37          11      4     19        8
##   Not like me            177   126         104     63    122       81
##   A little like me       530   583         178    319    382      116
##   Somewhat like me       940  1857         779    594    698      375
##   Like me               2166  1818        1765   1436   1427     1525
##   Very much like me     1088   770         489    512    461      495
##   <NA>                    39   180          28     23     85       25
##
##                      Switzerland United Kingdom
##   Not like me at all           7             26
##   Not like me                 55            126
##   A little like me           120            364
```

```
##   Somewhat like me           535            716
##   Like me                   1550           1945
##   Very much like me          768            944
##   <NA>                        32             42
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all    16.45    2.35   25.07    3.92   9.66    4.70
##   Not like me            7.42    4.14   17.03    7.88   8.17    6.21
##   A little like me       7.22    3.41   16.35    6.88   9.67    4.47
##   Somewhat like me       9.19    6.70   12.81    7.52   6.48    6.19
##   Like me                7.04    7.38    5.53    7.74   5.75   11.03
##   Very much like me      9.59    5.71    3.64    5.31  10.91   12.42
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all     8.62  9.66        2.87   1.04   4.96     2.09
##   Not like me           10.18  7.25        5.98   3.62   7.02     4.66
##   A little like me      10.63 11.70        3.57   6.40   7.66     2.33
##   Somewhat like me       7.40 14.61        6.13   4.67   5.49     2.95
##   Like me                8.82  7.41        7.19   5.85   5.81     6.21
##   Very much like me     10.32  7.30        4.64   4.86   4.37     4.69
##
##                       Switzerland United Kingdom
##   Not like me at all         1.83           6.79
##   Not like me                3.16           7.25
##   A little like me           2.41           7.30
##   Somewhat like me           4.21           5.63
##   Like me                    6.31           7.92
##   Very much like me          7.28           8.95
## [1] "impenv_r :  Important to care for nature and environment"
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all       34      10      27       5     33      16
##   Not like me              66      29     132      52    157     113
##   A little like me        253     158     432     180    491     274
##   Somewhat like me        757     717    1200     667    648     856
##   Like me                1636    1698    1638    1808   1275    2206
##   Very much like me      1732     910    1173    1198   1442    1697
##   <NA>                     31      11      65      13     34      48
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all       35    14          16     13      7        3
##   Not like me             131    51          68    132     55       25
##   A little like me        423   282         163    381    187       51
##   Somewhat like me        897  1223         730    631    569      231
##   Like me                1825  1921        1609   1207   1390     1198
##   Very much like me      1628  1759         745    563    928     1099
##   <NA>                     34   121          23     24     58       18
##
##                       Switzerland United Kingdom
##   Not like me at all            4             18
##   Not like me                  33            134
##   A little like me            120            350
##   Somewhat like me            460            713
##   Like me                    1269           1588
```

```
##   Very much like me         1156           1322
##   <NA>                        25             38
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all   14.47    4.26   11.49    2.13  14.04    6.81
##   Not like me           5.60    2.46   11.21    4.41  13.33    9.59
##   A little like me      6.76    4.22   11.54    4.81  13.11    7.32
##   Somewhat like me      7.35    6.96   11.65    6.48   6.29    8.31
##   Like me               7.35    7.63    7.36    8.12   5.73    9.91
##   Very much like me     9.98    5.24    6.76    6.90   8.31    9.78
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all   14.89  5.96        6.81   5.53   2.98     1.28
##   Not like me          11.12  4.33        5.77  11.21   4.67     2.12
##   A little like me     11.30  7.53        4.35  10.17   4.99     1.36
##   Somewhat like me      8.71 11.87        7.09   6.13   5.52     2.24
##   Like me               8.20  8.63        7.23   5.42   6.24     5.38
##   Very much like me     9.38 10.14        4.29   3.24   5.35     6.33
##
##                      Switzerland United Kingdom
##   Not like me at all        1.70           7.66
##   Not like me               2.80          11.38
##   A little like me          3.20           9.35
##   Somewhat like me          4.47           6.92
##   Like me                   5.70           7.13
##   Very much like me         6.66           7.62
## [1] "iphlppl_r :  Important to help people and care for others well-being"
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all      45       2      57       9     15      10
##   Not like me             66      29     202     115    107      73
##   A little like me       266      83     783     384    464     182
##   Somewhat like me       942     669    1616    1163    778     814
##   Like me               1837    1825    1428    1699   1424    2496
##   Very much like me     1308     914     521     539   1257    1586
##   <NA>                    45      11      60      14     35      49
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all      16    27           3      3      7        6
##   Not like me             89    63          32     24     66       21
##   A little like me       344   390          84    276    326       46
##   Somewhat like me       768  1765         640    550    814      290
##   Like me               2144  1999        1779   1338   1399     1472
##   Very much like me     1578  1000         793    737    510      766
##   <NA>                    34   127          23     23     72       24
##
##                      Switzerland United Kingdom
##   Not like me at all           4              5
##   Not like me                 21             39
##   A little like me            77            218
##   Somewhat like me           463            567
##   Like me                   1452           1844
##   Very much like me         1026           1455
##   <NA>                        24             35
```

```
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all   21.53    0.96   27.27    4.31   7.18    4.78
##   Not like me           6.97    3.06   21.33   12.14  11.30    7.71
##   A little like me      6.78    2.12   19.96    9.79  11.83    4.64
##   Somewhat like me      7.96    5.65   13.65    9.82   6.57    6.88
##   Like me               7.61    7.56    5.92    7.04   5.90   10.34
##   Very much like me     9.35    6.53    3.72    3.85   8.98   11.34
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all    7.66 12.92        1.44   1.44   3.35     2.87
##   Not like me           9.40  6.65        3.38   2.53   6.97     2.22
##   A little like me      8.77  9.94        2.14   7.04   8.31     1.17
##   Somewhat like me      6.49 14.91        5.41   4.65   6.88     2.45
##   Like me               8.88  8.28        7.37   5.54   5.80     6.10
##   Very much like me    11.28  7.15        5.67   5.27   3.65     5.48
##
##                      Switzerland United Kingdom
##   Not like me at all        1.91           2.39
##   Not like me               2.22           4.12
##   A little like me          1.96           5.56
##   Somewhat like me          3.91           4.79
##   Like me                   6.02           7.64
##   Very much like me         7.33          10.40
## [1] "iplylfr_r :  Important to be loyal to friends and devote to people close"
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all      26       1      24      11     17      10
##   Not like me             37      13      88      44     44      20
##   A little like me       179      37     381     146    224      50
##   Somewhat like me       445     313    1262     594    566     278
##   Like me               1611    1895    1871    2218   1397    2204
##   Very much like me     2180    1264     979     897   1800    2598
##   <NA>                    31      10      62      13     32      50
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all      20    21           3      1      8        8
##   Not like me             87    43          37     12     29       58
##   A little like me       341   247          51     95    167       92
##   Somewhat like me       726  1389         434    253    483      366
##   Like me               2196  2282        1927   1447   1514     1383
##   Very much like me     1564  1273         875   1121    932      688
##   <NA>                    39   116          27     22     61       30
##
##                      Switzerland United Kingdom
##   Not like me at all           2              8
##   Not like me                 15             54
##   A little like me            27            212
##   Somewhat like me           204            473
##   Like me                   1331           1912
##   Very much like me         1461           1464
##   <NA>                        27             40
##
##                      Austria Belgium Czechia Estonia France Germany
```

```
##   Not like me at all   16.25    0.62   15.00    6.88  10.62    6.25
##   Not like me           6.37    2.24   15.15    7.57   7.57    3.44
##   A little like me      7.96    1.65   16.94    6.49   9.96    2.22
##   Somewhat like me      5.72    4.02   16.21    7.63   7.27    3.57
##   Like me               6.40    7.52    7.43    8.81   5.55    8.75
##   Very much like me    11.42    6.62    5.13    4.70   9.43   13.60
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all   12.50 13.12        1.88   0.62   5.00     5.00
##   Not like me          14.97  7.40        6.37   2.07   4.99     9.98
##   A little like me     15.16 10.98        2.27   4.22   7.43     4.09
##   Somewhat like me      9.32 17.84        5.57   3.25   6.20     4.70
##   Like me               8.72  9.06        7.65   5.74   6.01     5.49
##   Very much like me     8.19  6.67        4.58   5.87   4.88     3.60
##
##                      Switzerland United Kingdom
##   Not like me at all        1.25           5.00
##   Not like me               2.58           9.29
##   A little like me          1.20           9.43
##   Somewhat like me          2.62           6.08
##   Like me                   5.28           7.59
##   Very much like me         7.65           7.67
## [1] "ipeqopt_r :  Important that people are treated equally and have equal opportunities"
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all      47       8      53      51     18      48
##   Not like me             86      54     212     329     71     194
##   A little like me       296     117     568     420    271     240
##   Somewhat like me       902     699    1362    1059    644     750
##   Like me               1800    1680    1627    1627   1215    2340
##   Very much like me     1333     957     751     422   1825    1581
##   <NA>                    45      18      94      15     36      57
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all      34    31          11     12     20        8
##   Not like me            129   112          65    104     80       54
##   A little like me       438   402          77    292    223       48
##   Somewhat like me       854  1727         501    437    575      222
##   Like me               1937  1834        1871   1318   1425     1325
##   Very much like me     1542  1121         805    763    809      940
##   <NA>                    39   144          24     25     62       28
##
##                      Switzerland United Kingdom
##   Not like me at all          21             28
##   Not like me                102            139
##   A little like me           178            326
##   Somewhat like me           426            663
##   Like me                   1342           1661
##   Very much like me          962           1304
##   <NA>                        36             42
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all   12.05    2.05   13.59   13.08   4.62   12.31
##   Not like me           4.97    3.12   12.25   19.01   4.10   11.21
```

```
##   A little like me      7.60    3.00   14.58   10.78   6.96    6.16
##   Somewhat like me      8.34    6.46   12.59    9.79   5.95    6.93
##   Like me               7.83    7.30    7.07    7.07   5.28   10.17
##   Very much like me     8.82    6.33    4.97    2.79  12.07   10.46
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all    8.72  7.95        2.82   3.08   5.13     2.05
##   Not like me           7.45  6.47        3.76   6.01   4.62     3.12
##   A little like me     11.24 10.32        1.98   7.49   5.72     1.23
##   Somewhat like me      7.89 15.96        4.63   4.04   5.31     2.05
##   Like me               8.42  7.97        8.13   5.73   6.20     5.76
##   Very much like me    10.20  7.42        5.33   5.05   5.35     6.22
##
##                       Switzerland United Kingdom
##   Not like me at all         5.38           7.18
##   Not like me                5.89           8.03
##   A little like me           4.57           8.37
##   Somewhat like me           3.94           6.13
##   Like me                    5.83           7.22
##   Very much like me          6.36           8.63
## [1] "ipudrst_r :  Important to understand different people"
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all       63       9      96      15     37      18
##   Not like me             129      72     296     137    142     108
##   A little like me        360     170     815     343    482     223
##   Somewhat like me       1168     852    1628     956    823     787
##   Like me                1728    1811    1357    1899   1412    2707
##   Very much like me      1011     602     384     560   1150    1310
##   <NA>                     50      17      91      13     34      57
##
##                       Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all       33    37          11      4     19        8
##   Not like me             177   126         104     63    122       81
##   A little like me        530   583         178    319    382      116
##   Somewhat like me        940  1857         779    594    698      375
##   Like me                2166  1818        1765   1436   1427     1525
##   Very much like me      1088   770         489    512    461      495
##   <NA>                     39   180          28     23     85       25
##
##                       Switzerland United Kingdom
##   Not like me at all            7             26
##   Not like me                  55            126
##   A little like me            120            364
##   Somewhat like me            535            716
##   Like me                    1550           1945
##   Very much like me           768            944
##   <NA>                         32             42
##
##                       Austria Belgium Czechia Estonia France Germany
##   Not like me at all   16.45    2.35   25.07    3.92   9.66    4.70
##   Not like me           7.42    4.14   17.03    7.88   8.17    6.21
##   A little like me      7.22    3.41   16.35    6.88   9.67    4.47
##   Somewhat like me      9.19    6.70   12.81    7.52   6.48    6.19
```

```
##   Like me               7.04    7.38    5.53    7.74   5.75   11.03
##   Very much like me     9.59    5.71    3.64    5.31  10.91   12.42
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all    8.62  9.66        2.87   1.04   4.96     2.09
##   Not like me          10.18  7.25        5.98   3.62   7.02     4.66
##   A little like me     10.63 11.70        3.57   6.40   7.66     2.33
##   Somewhat like me      7.40 14.61        6.13   4.67   5.49     2.95
##   Like me               8.82  7.41        7.19   5.85   5.81     6.21
##   Very much like me    10.32  7.30        4.64   4.86   4.37     4.69
##
##                      Switzerland United Kingdom
##   Not like me at all        1.83           6.79
##   Not like me               3.16           7.25
##   A little like me          2.41           7.30
##   Somewhat like me          4.21           5.63
##   Like me                   6.31           7.92
##   Very much like me         7.28           8.95
## [1] "impenv_r :  Important to care for nature and environment"
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all      34      10      27       5     33      16
##   Not like me             66      29     132      52    157     113
##   A little like me       253     158     432     180    491     274
##   Somewhat like me       757     717    1200     667    648     856
##   Like me               1636    1698    1638    1808   1275    2206
##   Very much like me     1732     910    1173    1198   1442    1697
##   <NA>                    31      11      65      13     34      48
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all      35    14          16     13      7        3
##   Not like me            131    51          68    132     55       25
##   A little like me       423   282         163    381    187       51
##   Somewhat like me       897  1223         730    631    569      231
##   Like me               1825  1921        1609   1207   1390     1198
##   Very much like me     1628  1759         745    563    928     1099
##   <NA>                    34   121          23     24     58       18
##
##                      Switzerland United Kingdom
##   Not like me at all           4             18
##   Not like me                 33            134
##   A little like me           120            350
##   Somewhat like me           460            713
##   Like me                   1269           1588
##   Very much like me         1156           1322
##   <NA>                        25             38
##
##                      Austria Belgium Czechia Estonia France Germany
##   Not like me at all   14.47    4.26   11.49    2.13  14.04    6.81
##   Not like me           5.60    2.46   11.21    4.41  13.33    9.59
##   A little like me      6.76    4.22   11.54    4.81  13.11    7.32
##   Somewhat like me      7.35    6.96   11.65    6.48   6.29    8.31
##   Like me               7.35    7.63    7.36    8.12   5.73    9.91
##   Very much like me     9.98    5.24    6.76    6.90   8.31    9.78
```

```
##
##                      Ireland Italy Netherlands Norway Poland Slovenia
##   Not like me at all   14.89  5.96        6.81   5.53   2.98     1.28
##   Not like me          11.12  4.33        5.77  11.21   4.67     2.12
##   A little like me     11.30  7.53        4.35  10.17   4.99     1.36
##   Somewhat like me      8.71 11.87        7.09   6.13   5.52     2.24
##   Like me               8.20  8.63        7.23   5.42   6.24     5.38
##   Very much like me     9.38 10.14        4.29   3.24   5.35     6.33
##
##                      Switzerland United Kingdom
##   Not like me at all        1.70           7.66
##   Not like me               2.80          11.38
##   A little like me          3.20           9.35
##   Somewhat like me          4.47           6.92
##   Like me                   5.70           7.13
##   Very much like me         6.66           7.62
```

```
#Assign weight and survey stucture for ESS data
ds_filtradaAll %>% group_by(essround,cntry) %>%
  summarise(pesos=round(sum(dweight),0), n=n(), diff=n-pesos) %>%
  summarise(Diff_Pesos_N=sum(diff))
```

```
## # A tibble: 2 x 2
##   essround   Diff_Pesos_N
##   <labelled>        <dbl>
## 1 8                     0
## 2 9                     0
```

```
ds_filtradaAll$gndrD <- ifelse(ds_filtradaAll$gndr == 1, 0,
                               ifelse(ds_filtradaAll$gndr == 2, 1,ds_filtradaAll$gndr))
var_lab(ds_filtradaAll$gndrD) <- "Gender (Female)"
use_labels(ds_filtradaAll,table(gndrD,as.character(cntry)))
```

```
##
## Gender (Female) Austria Belgium Czechia Estonia France Germany Ireland
##               0    2054    1755    2146    1762   1866    2720    2407
##               1    2455    1778    2521    2161   2214    2490    2566
##
## Gender (Female) Italy Netherlands Norway Poland Slovenia Switzerland
##               0  2581        1585   1607   1517     1208        1563
##               1  2790        1769   1344   1675     1417        1504
##
## Gender (Female) United Kingdom
##               0           1870
##               1           2293
```

```
val_lab(ds_filtradaAll$eisced)
```

```
##             Not possible to harmonise into ES-ISCED
##                                                   0
##              ES-ISCED I , less than lower secondary
##                                                   1
##                         ES-ISCED II, lower secondary
##                                                   2
##           ES-ISCED IIIb, lower tier upper secondary
##                                                   3
```

```
##           ES-ISCED IIIa, upper tier upper secondary
##                                                   4
##        ES-ISCED IV, advanced vocational, sub-degree
##                                                   5
##     ES-ISCED V1, lower tertiary education, BA level
##                                                   6
## ES-ISCED V2, higher tertiary education, >= MA level
##                                                   7
##                                               Other
##                                                  55
##                                             Refusal
##                                                  77
##                                          Don't know
##                                                  88
##                                           No answer
##                                                  99
```

```
ds_filtradaAll$eiscedT <- ifelse(ds_filtradaAll$eisced %in% c(1,2,3) , 1,
                            ifelse(ds_filtradaAll$eisced %in% c(4,5),2,
                                   ifelse(ds_filtradaAll$eisced %in% c(6,7), 3,NA)))
val_lab(ds_filtradaAll$eiscedT) = num_lab("
            1 Less than Upper secondary
            2 Upper secondary or vocational
            3 Bachelor or higher
")
var_lab(ds_filtradaAll$eiscedT) <- var_lab(ds_filtradaAll$eisced)
use_labels(ds_filtradaAll,table(eiscedT,as.character(cntry)))
```

```
##
## Highest level of education, ES - ISCED eiscedT Austria Belgium Czechia
##                   Less than Upper secondary        3097    1192    1952
##                   Upper secondary or vocational     807    1086    2022
##                   Bachelor or higher                594    1233     688
##
## Highest level of education, ES - ISCED eiscedT Estonia France Germany
##                   Less than Upper secondary         805   2006    2551
##                   Upper secondary or vocational    1987   1292    1308
##                   Bachelor or higher               1129    776    1324
##
## Highest level of education, ES - ISCED eiscedT Ireland Italy Netherlands
##                   Less than Upper secondary        1750  2812        1823
##                   Upper secondary or vocational    1886  1832         457
##                   Bachelor or higher               1311   677        1053
##
## Highest level of education, ES - ISCED eiscedT Norway Poland Slovenia
##                   Less than Upper secondary       1040   1628     1034
##                   Upper secondary or vocational    708    825     1061
##                   Bachelor or higher              1189    726      522
##
## Highest level of education, ES - ISCED eiscedT Switzerland United Kingdom
##                   Less than Upper secondary            1687           1605
##                   Upper secondary or vocational         744           1277
##                   Bachelor or higher                    624           1172
```

```
eiscedD <- as.dichotomy(ds_filtradaAll$eiscedT, prefix="eisced")
names(eiscedD)
```

```
## [1] "eisced1" "eisced2" "eisced3"
```

```
val_lab(ds_filtradaAll$domicil)
```

```
##                       A big city Suburbs or outskirts of big city
##                                1                                2
##               Town or small city                  Country village
##                                3                                4
##      Farm or home in countryside                          Refusal
##                                5                                7
##                       Don't know                         No answer
##                                8                                9
```

```
ds_filtradaAll$domicilT <- ifelse(ds_filtradaAll$domicil %in% c(4,5) , 1,
                                  ifelse(ds_filtradaAll$domicil %in% c(3) , 2,
                                         ifelse(ds_filtradaAll$domicil %in% c(2),3,
                                                ifelse(ds_filtradaAll$domicil %in% c(1),4,NA))))

val_lab(ds_filtradaAll$domicilT) <- num_lab("
             1 Countryside
             2 Town or small city
             3 Suburbs or outskirts of big city
             4 A big city
")
var_lab(ds_filtradaAll$domicilT) <- var_lab(ds_filtradaAll$domicil)
use_labels(ds_filtradaAll,table(domicilT,as.character(cntry)))
```

```
##
## Domicile, respondent's description domicilT Austria Belgium Czechia
##            Countryside                        2054    1790    1436
##            Town or small city                 1085     871    1510
##            Suburbs or outskirts of big city    358     310     179
##            A big city                         1012     562    1542
##
## Domicile, respondent's description domicilT Estonia France Germany Ireland
##            Countryside                        1127   1444    1719    2078
##            Town or small city                 1246   1441    1925    1444
##            Suburbs or outskirts of big city    369    512     778    1016
##            A big city                         1180    682     787     428
##
## Domicile, respondent's description domicilT Italy Netherlands Norway
##            Countryside                       2529        1530   1085
##            Town or small city                1880         879    915
##            Suburbs or outskirts of big city   322         312    494
##            A big city                         628         633    452
##
## Domicile, respondent's description domicilT Poland Slovenia Switzerland
##            Countryside                        1426     1441        1714
##            Town or small city                 1021      573         851
##            Suburbs or outskirts of big city     85      289         243
##            A big city                         655      318         259
##
```

```
## Domicile, respondent's description domicilT United Kingdom
##            Countryside                                1076
##            Town or small city                         1893
##            Suburbs or outskirts of big city            817
##            A big city                                  373
```

```
domicilD <- as.dichotomy(ds_filtradaAll$domicilT, prefix="domicil")
names(domicilD)
```

```
## [1] "domicil1" "domicil2" "domicil3" "domicil4"
```

```
ds_filtradaAll <- cbind(ds_filtradaAll, eiscedD, domicilD)
ds_filtradaAll <- ds_filtradaAll[,!colnames(ds_filtradaAll) %in% c("eisced55")]


ds_filtradacntry <- ds_filtradaAll %>% group_by(essround,cntry) %>%
  summarise(n = n(),
            CntryAge = mean(agea, na.rm = TRUE),
            CntryFemale = sum(gndrD, na.rm = TRUE)/ n,
            CntryEisced1 = sum(eisced1,na.rm=TRUE)/ n,
            CntryEisced2 = sum(eisced2,na.rm=TRUE)/ n,
            CntryEisced3 = sum(eisced3,na.rm=TRUE)/ n,
            CntryDomici1 = sum(domicil1,na.rm=TRUE)/ n,
            CntryDomici2 = sum(domicil2,na.rm=TRUE)/ n,
            CntryDomici3 = sum(domicil3,na.rm=TRUE)/ n,
            CntryDomici4 = sum(domicil4,na.rm=TRUE)/ n) %>% select(-n)

ds_filtradaAll <- left_join(ds_filtradaAll,ds_filtradacntry, by=c("essround","cntry"))

ds_filtradamplus <- ds_filtradaAll
ds_filtradamplus$cntry <- as.numeric(as.factor(ds_filtradaAll$cntry))
ds_filtradamplus$essround <- as.numeric(as.factor(ds_filtradaAll$essround))
write.table(ds_filtradamplus[ds_filtradamplus$essround == 2,
                             c("cntry","dweight","HDI","iphlppl_r","iplylfr_r","ipeqopt_r","ipudrst_r",
                               "agea","gndrD","eisced2","eisced3","domicil2","domicil3","domicil4","Cnt
            row.names = FALSE, col.names = FALSE, sep = "\t", quote = FALSE, na = ".")
write.table(ds_filtradamplus[ds_filtradamplus$essround == 1,
                             c("cntry","dweight","HDI","iphlppl_r","iplylfr_r","ipeqopt_r","ipudrst_r",
                               "agea","gndrD","eisced2","eisced3","domicil2","domicil3","domicil4","Cnt
            row.names = FALSE, col.names = FALSE, sep = "\t", quote = FALSE, na = ".")
```

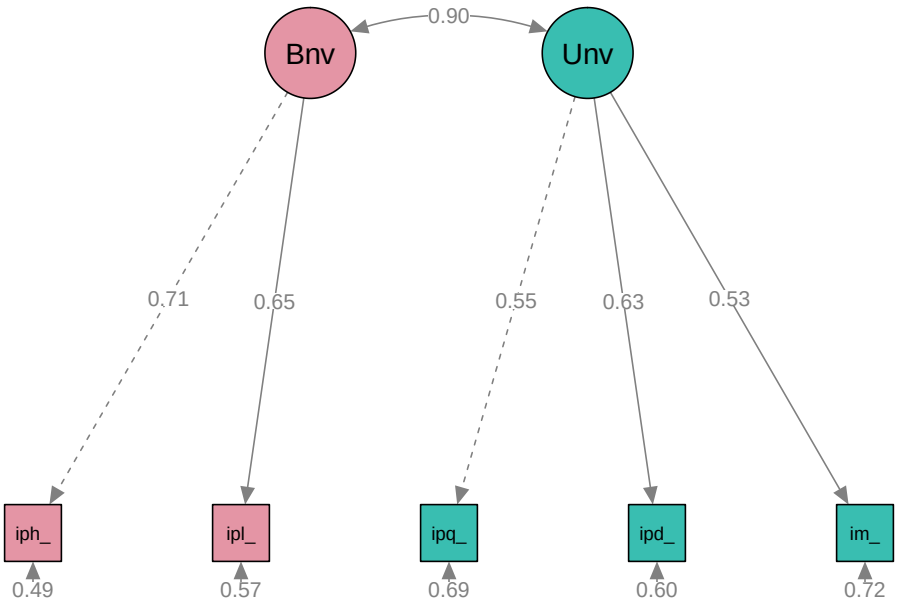
Model CFA

```
# countries <- c("Belgium", "Germany", "Ireland", "United Kingdom")
# ds_filtradaAll <- ds_filtradaAll1 %>% filter(cntry %in% countries)

#1st order
model13<-'
Benev =~ iphlppl_r + iplylfr_r
Unive =~ ipeqopt_r + ipudrst_r + impenv_r
Benev ~~ Unive
'
# model23<-'
# STrasc =~ iphlppl_r + iplylfr_r + ipeqopt_r + ipudrst_r + impenv_r
# '
```

```r
# #2nd order
# model23<-'
# Benev =~ iphlppl_r + iplylfr_r
# Unive =~ ipeqopt_r + ipudrst_r +impenv_r
# STrasc =~ Benev + Unive
# STrasc ~~ 1*STrasc
# iplylfr_r ~~  impenv_r
# '
#
# #Bi factor
# model33 <-'
# Benev =~ iphlppl_r + iplylfr_r
# Unive =~ ipeqopt_r + ipudrst_r +impenv_r
# STrasc =~ iphlppl_r + iplylfr_r  + ipeqopt_r + ipudrst_r + impenv_r
# STrasc ~~
# '


for (r in c(8,9)) {
  ds_filtrada <- ds_filtradaAll %>% filter(essround == r)
  survey.design <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada)

  lavaan.fit3 <- lavaan(model13, data=ds_filtrada, auto.fix.first=TRUE,
                        auto.var=TRUE, int.ov.free=TRUE,
                        auto.cov.lv.x=TRUE,estimator="MLM",
                        cluster = "cntry", meanstructure=TRUE)
  survey.fit3 <- lavaan.survey(lavaan.fit=lavaan.fit3,survey.design=survey.design)
  #assign(paste0("survey.fit3r",r),survey.fit3)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.fit3, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
  print(modindices(survey.fit3,sort=T)[1:10,])

  cov <- round(cov(ds_filtrada[,items], use="complete.obs"),3)
  print(lowerMat(cov, digits=3))
  print(round(colMeans(ds_filtrada[,items], na.rm = TRUE),3))
  print(fitted(survey.fit3))
  invisible(semPaths(survey.fit3,"model","std","lisrel", edge.label.cex = 0.8, intercepts = FALSE, grou
                     pastel = TRUE, optimizeLatRes = TRUE))
  print(summary(survey.fit3, standardized=T, rsquare=T, fit.measures=T))
}
```

```
## [1] "ESS round:  8"
##         chisq        pvalue           cfi           tli         rmsea
##       243.650         0.000         0.990         0.976         0.047
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.014       119.625         0.000         0.991         0.976
##  rmsea.robust  srmr_bentler
##         0.046         0.014
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 32 iplylfr_r ~~  impenv_r 166.589  0.065   0.065    0.109    0.109
## 21     Benev =~ ipeqopt_r 130.387 -0.830  -0.583   -0.543   -0.543
## 35 ipudrst_r ~~  impenv_r 130.387 -0.075  -0.075   -0.106   -0.106
```

```
## 23     Benev =~  impenv_r  91.091  0.634   0.445    0.431    0.431
## 33 ipeqopt_r ~~ ipudrst_r  91.091  0.068   0.068    0.094    0.094
## 30 iplylfr_r ~~ ipeqopt_r  64.763 -0.043  -0.043   -0.070   -0.070
## 28 iphlppl_r ~~ ipudrst_r  29.456  0.034   0.034    0.060    0.060
## 31 iplylfr_r ~~ ipudrst_r  17.367 -0.023  -0.023   -0.041   -0.041
## 29 iphlppl_r ~~  impenv_r  12.375 -0.020  -0.020   -0.033   -0.033
## 27 iphlppl_r ~~ ipeqopt_r   5.289 -0.014  -0.014   -0.022   -0.022
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.944
## iplylfr_r 0.401  0.791
## ipeqopt_r 0.354  0.276  1.124
## ipudrst_r 0.409  0.329  0.398  1.069
## impenv_r  0.332  0.318  0.321  0.318  1.052
##  [1] 0.401 0.354 0.409 0.332 0.276 0.329 0.318 0.398 0.321 0.318
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.813     5.062     4.806     4.645     4.827
## $cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.969
## iplylfr_r 0.413  0.814
## ipeqopt_r 0.375  0.314  1.154
## ipudrst_r 0.415  0.347  0.390  1.091
## impenv_r  0.345  0.289  0.324  0.358  1.069
##
## $mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.808     5.062     4.797     4.642     4.830
```



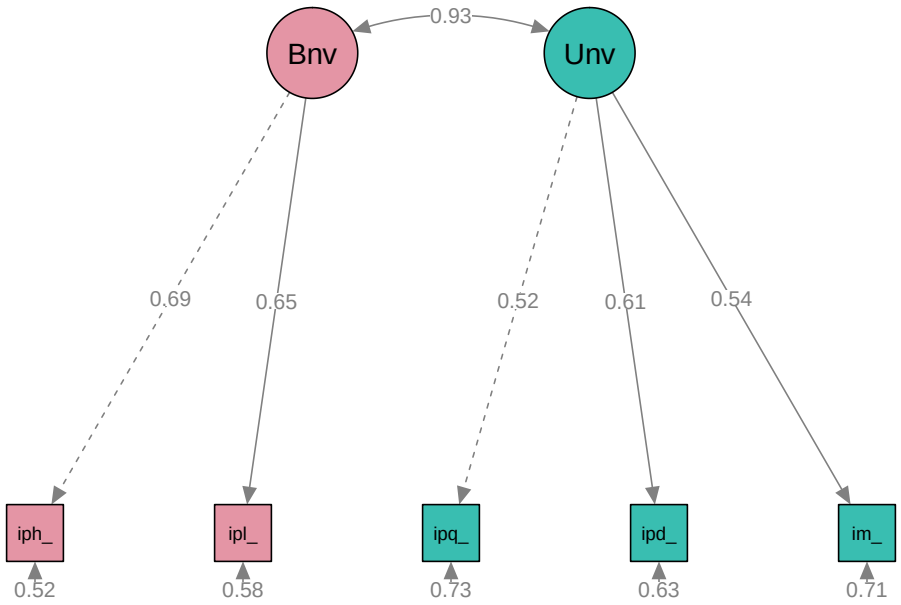

```
## lavaan 0.6-5 ended normally after 27 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         16
##
##   Number of observations                         27533
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                              243.650     119.625
##   Degrees of freedom                                4           4
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 2.037
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                            24987.290   12047.652
##   Degrees of freedom                               10          10
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 2.074
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                   0.990       0.990
```

```
##   Tucker-Lewis Index (TLI)                       0.976       0.976
##
##   Robust Comparative Fit Index (CFI)                         0.991
##   Robust Tucker-Lewis Index (TLI)                            0.976
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)           -183781.903 -183781.903
##   Loglikelihood unrestricted model (H1)   -183660.078 -183660.078
##
##   Akaike (AIC)                             367595.807  367595.807
##   Bayesian (BIC)                           367727.377  367727.377
##   Sample-size adjusted Bayesian (BIC)      367676.529  367676.529
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.047       0.032
##   90 Percent confidence interval - lower         0.042       0.029
##   90 Percent confidence interval - upper         0.052       0.036
##   P-value RMSEA <= 0.05                          0.859       1.000
##
##   Robust RMSEA                                               0.046
##   90 Percent confidence interval - lower                     0.039
##   90 Percent confidence interval - upper                     0.054
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                           0.014       0.014
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r        1.000                               0.703    0.714
##     iplylfr_r        0.838    0.016   53.208    0.000    0.588    0.652
##   Unive =~
##     ipeqopt_r        1.000                               0.593    0.552
##     ipudrst_r        1.107    0.023   48.717    0.000    0.657    0.629
##     impenv_r         0.920    0.021   43.140    0.000    0.546    0.528
##
## Covariances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev ~~
##     Unive            0.375    0.009   44.019    0.000    0.899    0.899
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        4.808    0.007  715.495    0.000    4.808    4.884
##    .iplylfr_r        5.062    0.006  782.361    0.000    5.062    5.611
```

```
##    .ipeqopt_r         4.797    0.008  595.994    0.000    4.797    4.467
##    .ipudrst_r         4.642    0.007  652.447    0.000    4.642    4.443
##    .impenv_r          4.830    0.007  659.223    0.000    4.830    4.672
##     Benev             0.000                              0.000    0.000
##     Unive             0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.475    0.010   46.211    0.000    0.475    0.491
##    .iplylfr_r         0.468    0.009   50.853    0.000    0.468    0.575
##    .ipeqopt_r         0.802    0.014   59.144    0.000    0.802    0.695
##    .ipudrst_r         0.660    0.012   54.450    0.000    0.660    0.605
##    .impenv_r          0.771    0.013   60.015    0.000    0.771    0.721
##     Benev             0.494    0.012   40.924    0.000    1.000    1.000
##     Unive             0.352    0.012   29.780    0.000    1.000    1.000
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.509
##     iplylfr_r         0.425
##     ipeqopt_r         0.305
##     ipudrst_r         0.395
##     impenv_r          0.279
##
## $FIT
##                          npar                          fmin
##                        16.000                         0.004
##                         chisq                           df
##                       243.650                         4.000
##                        pvalue                  chisq.scaled
##                         0.000                       119.625
##                    df.scaled                 pvalue.scaled
##                         4.000                         0.000
##          chisq.scaling.factor                 baseline.chisq
##                         2.037                     24987.290
##                   baseline.df               baseline.pvalue
##                        10.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     12047.652                        10.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         2.074
##                           cfi                           tli
##                         0.990                         0.976
##                    cfi.scaled                    tli.scaled
##                         0.990                         0.976
##                    cfi.robust                    tli.robust
##                         0.991                         0.976
##                          logl             unrestricted.logl
##                  -183781.903                   -183660.078
##                           aic                           bic
##                    367595.807                    367727.377
##                        ntotal                          bic2
##                     27533.000                    367676.529
##                         rmsea                rmsea.ci.lower
```

```
##                         0.047                         0.042
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.052                         0.859
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.032                         0.029
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.036                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.046                         0.039
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.054                            NA
##                          srmr
##                         0.014
##
## $PE
##          lhs op       rhs exo       est          se         z pvalue
## 1      Benev =~ iphlppl_r   0 1.0000000 0.000000000        NA     NA
## 2      Benev =~ iplylfr_r   0 0.8375965 0.015742027  53.20766      0
## 3      Unive =~ ipeqopt_r   0 1.0000000 0.000000000        NA     NA
## 4      Unive =~ ipudrst_r   0 1.1071194 0.022725711  48.71660      0
## 5      Unive =~  impenv_r   0 0.9200455 0.021326905  43.14013      0
## 6      Benev ~~     Unive   0 0.3745003 0.008507786  44.01854      0
## 7  iphlppl_r ~~ iphlppl_r   0 0.4754309 0.010288166  46.21143      0
## 8  iplylfr_r ~~ iplylfr_r   0 0.4676350 0.009195884  50.85264      0
## 9  ipeqopt_r ~~ ipeqopt_r   0 0.8017269 0.013555415  59.14440      0
## 10 ipudrst_r ~~ ipudrst_r   0 0.6598969 0.012119241  54.45035      0
## 11  impenv_r ~~  impenv_r   0 0.7708772 0.012844673  60.01533      0
## 12     Benev ~~     Benev   0 0.4936012 0.012061425  40.92395      0
## 13     Unive ~~     Unive   0 0.3518548 0.011815240  29.77974      0
## 14 iphlppl_r ~1             0 4.8077075 0.006719411 715.49538      0
## 15 iplylfr_r ~1             0 5.0621424 0.006470338 782.36142      0
## 16 ipeqopt_r ~1             0 4.7974581 0.008049511 595.99369      0
## 17 ipudrst_r ~1             0 4.6416159 0.007114163 652.44726      0
## 18  impenv_r ~1             0 4.8295550 0.007326130 659.22324      0
## 19     Benev ~1             0 0.0000000 0.000000000        NA     NA
## 20     Unive ~1             0 0.0000000 0.000000000        NA     NA
## 21 iphlppl_r r2 iphlppl_r   0 0.5093755          NA        NA     NA
## 22 iplylfr_r r2 iplylfr_r   0 0.4254602          NA        NA     NA
## 23 ipeqopt_r r2 ipeqopt_r   0 0.3050107          NA        NA     NA
## 24 ipudrst_r r2 ipudrst_r   0 0.3952391          NA        NA     NA
## 25  impenv_r r2  impenv_r   0 0.2786888          NA        NA     NA
##       std.lv   std.all   std.nox
## 1  0.7025676 0.7137055 0.7137055
## 2  0.5884681 0.6522731 0.6522731
## 3  0.5931735 0.5522778 0.5522778
## 4  0.6567138 0.6286805 0.6286805
## 5  0.5457466 0.5279099 0.5279099
## 6  0.8986330 0.8986330 0.8986330
## 7  0.4754309 0.4906245 0.4906245
## 8  0.4676350 0.5745398 0.5745398
## 9  0.8017269 0.6949893 0.6949893
## 10 0.6598969 0.6047609 0.6047609
## 11 0.7708772 0.7213112 0.7213112
## 12 1.0000000 1.0000000 1.0000000
```

```
## 13 1.0000000 1.0000000 1.0000000
## 14 4.8077075 4.8839248 4.8839248
## 15 5.0621424 5.6110083 5.6110083
## 16 4.7974581 4.4667024 4.4667024
## 17 4.6416159 4.4434777 4.4434777
## 18 4.8295550 4.6717095 4.6717095
## 19 0.0000000 0.0000000 0.0000000
## 20 0.0000000 0.0000000 0.0000000
## 21        NA        NA        NA
## 22        NA        NA        NA
## 23        NA        NA        NA
## 24        NA        NA        NA
## 25        NA        NA        NA
##
## [1] "ESS round:  9"
##         chisq        pvalue           cfi           tli         rmsea
##       367.163         0.000         0.985         0.961         0.058
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.017       227.806         0.000         0.985         0.962
##  rmsea.robust  srmr_bentler
##         0.058         0.017
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 32 iplylfr_r ~~  impenv_r 343.794  0.093   0.093    0.166    0.166
## 33 ipeqopt_r ~~ ipudrst_r 135.389  0.079   0.079    0.107    0.107
## 23     Benev =~  impenv_r 135.388  1.202   0.807    0.815    0.815
## 30 iplylfr_r ~~ ipeqopt_r  94.716 -0.051  -0.051   -0.085   -0.085
## 35 ipudrst_r ~~  impenv_r  86.516 -0.061  -0.061   -0.089   -0.089
## 21     Benev =~ ipeqopt_r  86.515 -0.983  -0.660   -0.625   -0.625
## 31 iplylfr_r ~~ ipudrst_r  72.357 -0.047  -0.047   -0.086   -0.086
## 29 iphlppl_r ~~  impenv_r  58.934 -0.043  -0.043   -0.074   -0.074
## 28 iphlppl_r ~~ ipudrst_r  40.168  0.040   0.040    0.069    0.069
## 22     Benev =~ ipudrst_r   5.674 -0.304  -0.204   -0.198   -0.198
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.917
## iplylfr_r 0.373  0.763
## ipeqopt_r 0.337  0.257  1.100
## ipudrst_r 0.389  0.306  0.366  1.044
## impenv_r  0.315  0.321  0.280  0.305  0.974
##  [1] 0.373 0.337 0.389 0.315 0.257 0.306 0.321 0.366 0.280 0.305
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.847     5.099     4.821     4.667     4.996
## $cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.938
## iplylfr_r 0.386  0.781
## ipeqopt_r 0.344  0.294  1.116
## ipudrst_r 0.392  0.335  0.347  1.065
## impenv_r  0.334  0.285  0.295  0.337  0.981
##
## $mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.848     5.105     4.826     4.666     5.007
```




```
## lavaan 0.6-5 ended normally after 25 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         16
##
##   Number of observations                         26814
##
## Model Test User Model:
##                                                Standard      Robust
##   Test Statistic                                367.163     227.806
##   Degrees of freedom                                  4           4
##   P-value (Chi-square)                            0.000       0.000
##   Scaling correction factor                                   1.612
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                             23474.216   11990.070
##   Degrees of freedom                                 10          10
##   P-value                                         0.000       0.000
##   Scaling correction factor                                   1.958
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                     0.985       0.981
```

```
##   Tucker-Lewis Index (TLI)                       0.961       0.953
##
##   Robust Comparative Fit Index (CFI)                         0.985
##   Robust Tucker-Lewis Index (TLI)                            0.962
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -176575.647 -176575.647
##   Loglikelihood unrestricted model (H1)    -176392.065 -176392.065
##
##   Akaike (AIC)                              353183.294  353183.294
##   Bayesian (BIC)                            353314.441  353314.441
##   Sample-size adjusted Bayesian (BIC)       353263.593  353263.593
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.058       0.046
##   90 Percent confidence interval - lower         0.053       0.042
##   90 Percent confidence interval - upper         0.063       0.050
##   P-value RMSEA <= 0.05                          0.003       0.961
##
##   Robust RMSEA                                               0.058
##   90 Percent confidence interval - lower                     0.052
##   90 Percent confidence interval - upper                     0.065
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                           0.017       0.017
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r         1.000                               0.672    0.693
##     iplylfr_r         0.855    0.015   58.342    0.000    0.574    0.650
##   Unive =~
##     ipeqopt_r         1.000                               0.551    0.522
##     ipudrst_r         1.141    0.022   51.315    0.000    0.629    0.610
##     impenv_r          0.971    0.021   47.048    0.000    0.535    0.540
##
## Covariances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev ~~
##     Unive             0.344    0.008   44.355    0.000    0.928    0.928
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         4.848    0.006  768.075    0.000    4.848    5.005
##    .iplylfr_r         5.105    0.006  890.481    0.000    5.105    5.777
```

```
##    .ipeqopt_r         4.826    0.007  704.125    0.000    4.826    4.569
##    .ipudrst_r         4.666    0.007  694.312    0.000    4.666    4.521
##    .impenv_r          5.007    0.006  778.267    0.000    5.007    5.054
##     Benev             0.000                              0.000    0.000
##     Unive             0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.487    0.010   50.255    0.000    0.487    0.519
##    .iplylfr_r         0.451    0.009   52.311    0.000    0.451    0.577
##    .ipeqopt_r         0.812    0.012   65.039    0.000    0.812    0.727
##    .ipudrst_r         0.669    0.011   58.960    0.000    0.669    0.628
##    .impenv_r          0.695    0.011   65.595    0.000    0.695    0.708
##     Benev             0.451    0.011   41.020    0.000    1.000    1.000
##     Unive             0.304    0.010   30.659    0.000    1.000    1.000
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.481
##     iplylfr_r         0.423
##     ipeqopt_r         0.273
##     ipudrst_r         0.372
##     impenv_r          0.292
##
## $FIT
##                          npar                          fmin
##                        16.000                         0.007
##                         chisq                           df
##                       367.163                         4.000
##                        pvalue                  chisq.scaled
##                         0.000                       227.806
##                    df.scaled                 pvalue.scaled
##                         4.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         1.612                      23474.216
##                   baseline.df               baseline.pvalue
##                        10.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     11990.070                        10.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         1.958
##                           cfi                           tli
##                         0.985                         0.961
##                    cfi.scaled                    tli.scaled
##                         0.981                         0.953
##                    cfi.robust                    tli.robust
##                         0.985                         0.962
##                          logl             unrestricted.logl
##                   -176575.647                   -176392.065
##                           aic                           bic
##                    353183.294                    353314.441
##                        ntotal                          bic2
##                     26814.000                    353263.593
##                         rmsea                rmsea.ci.lower
```

```
##                         0.058                         0.053
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.063                         0.003
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.046                         0.042
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.050                         0.961
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.058                         0.052
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.065                            NA
##                          srmr
##                         0.017
##
## $PE
##          lhs op       rhs exo       est          se         z pvalue
## 1      Benev =~ iphlppl_r   0 1.0000000 0.000000000        NA     NA
## 2      Benev =~ iplylfr_r   0 0.8554005 0.014661767  58.34225      0
## 3      Unive =~ ipeqopt_r   0 1.0000000 0.000000000        NA     NA
## 4      Unive =~ ipudrst_r   0 1.1414073 0.022243268  51.31473      0
## 5      Unive =~  impenv_r   0 0.9708569 0.020635435  47.04804      0
## 6      Benev ~~     Unive   0 0.3435793 0.007746056  44.35539      0
## 7  iphlppl_r ~~ iphlppl_r   0 0.4872041 0.009694643  50.25498      0
## 8  iplylfr_r ~~ iplylfr_r   0 0.4509434 0.008620465  52.31080      0
## 9  ipeqopt_r ~~ ipeqopt_r   0 0.8116107 0.012478894  65.03867      0
## 10 ipudrst_r ~~ ipudrst_r   0 0.6690088 0.011346803  58.96012      0
## 11  impenv_r ~~  impenv_r   0 0.6947964 0.010592142  65.59546      0
## 12     Benev ~~     Benev   0 0.4510340 0.010995537  41.01973      0
## 13     Unive ~~     Unive   0 0.3040488 0.009917178  30.65880      0
## 14 iphlppl_r ~1             0 4.8478393 0.006311677 768.07474      0
## 15 iplylfr_r ~1             0 5.1052255 0.005733113 890.48052      0
## 16 ipeqopt_r ~1             0 4.8255051 0.006853192 704.12516      0
## 17 ipudrst_r ~1             0 4.6657476 0.006719958 694.31198      0
## 18  impenv_r ~1             0 5.0071978 0.006433781 778.26672      0
## 19     Benev ~1             0 0.0000000 0.000000000        NA     NA
## 20     Unive ~1             0 0.0000000 0.000000000        NA     NA
## 21 iphlppl_r r2 iphlppl_r   0 0.4807245          NA        NA     NA
## 22 iplylfr_r r2 iplylfr_r   0 0.4225851          NA        NA     NA
## 23 ipeqopt_r r2 ipeqopt_r   0 0.2725283          NA        NA     NA
## 24 ipudrst_r r2 ipudrst_r   0 0.3718975          NA        NA     NA
## 25  impenv_r r2  impenv_r   0 0.2920221          NA        NA     NA
##       std.lv   std.all   std.nox
## 1  0.6715906 0.6933430 0.6933430
## 2  0.5744790 0.6500655 0.6500655
## 3  0.5514062 0.5220425 0.5220425
## 4  0.6293791 0.6098340 0.6098340
## 5  0.5353365 0.5403907 0.5403907
## 6  0.9277923 0.9277923 0.9277923
## 7  0.4872041 0.5192755 0.5192755
## 8  0.4509434 0.5774149 0.5774149
## 9  0.8116107 0.7274717 0.7274717
## 10 0.6690088 0.6281025 0.6281025
## 11 0.6947964 0.7079779 0.7079779
## 12 1.0000000 1.0000000 1.0000000
```

```
## 13 1.0000000 1.0000000 1.0000000
## 14 4.8478393 5.0048572 5.0048572
## 15 5.1052255 5.7769405 5.7769405
## 16 4.8255051 4.5685349 4.5685349
## 17 4.6657476 4.5208549 4.5208549
## 18 5.0071978 5.0544719 5.0544719
## 19 0.0000000 0.0000000 0.0000000
## 20 0.0000000 0.0000000 0.0000000
## 21         NA         NA         NA
## 22         NA         NA         NA
## 23         NA         NA         NA
## 24         NA         NA         NA
## 25         NA         NA         NA
```

```r
for (r in c(8,9)) {
  ds_filtrada <- ds_filtradaAll %>% filter(essround == r)
  survey.design <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada)

  # 1. CONFIGURAL EQUIVALENCE
  ## Add the "meanstructure" argument to add means/intercepts
  lavaan.conffit3 <- lavaan(model13, data=ds_filtrada,
                            auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                            int.ov.free=TRUE,     #intercepts not fixed to 0
                            meanstructure=TRUE,   #the means of the observed variables enter the model,
                            auto.var=TRUE,        #residual variances and variances of exogeneous laten
                            auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are inclu
                            estimator="MLM",
                            group = "cntry",
                            group.label = countries
                            #group.equal = ...    #vector for multigroup analysis specify the pattern o
                            )
  survey.conffit3 <- lavaan.survey(lavaan.fit=lavaan.conffit3,survey.design=survey.design)
  # mi1 <- modindices(survey.conffit3, sort = T, free.remove = F)
  # mi1[mi1$op == "=~",]

  # 2. METRIC EQUIVALENCE: set the factor loadings equal across groups

  lavaan.metrfit3 <- lavaan(model13, data=ds_filtrada,
                            auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                            int.ov.free=TRUE,     #intercepts not fixed to 0
                            meanstructure=TRUE,   #the means of the observed variables enter the model, n
                            auto.var=TRUE,        #residual variances and variances of exogeneous latent
                            auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                            estimator="MLM",
                            group = "cntry",
                            group.label = countries,
                            group.equal=c("loadings") #vector for multigroup analysis specify the pattern
                            )
  survey.metrfit3 <- lavaan.survey(lavaan.fit=lavaan.metrfit3,survey.design=survey.design)
  # mi2 <- modindices(survey.metrfit3, sort = T, free.remove = F)
  # loadings <- mi2[mi2$op=="=~",]
  # loadings[order(loadings$mi,decreasing=TRUE),]

  # 3. SCALAR EQUIVALENCE: set the factor loadings and the intercepts equal across groups
```

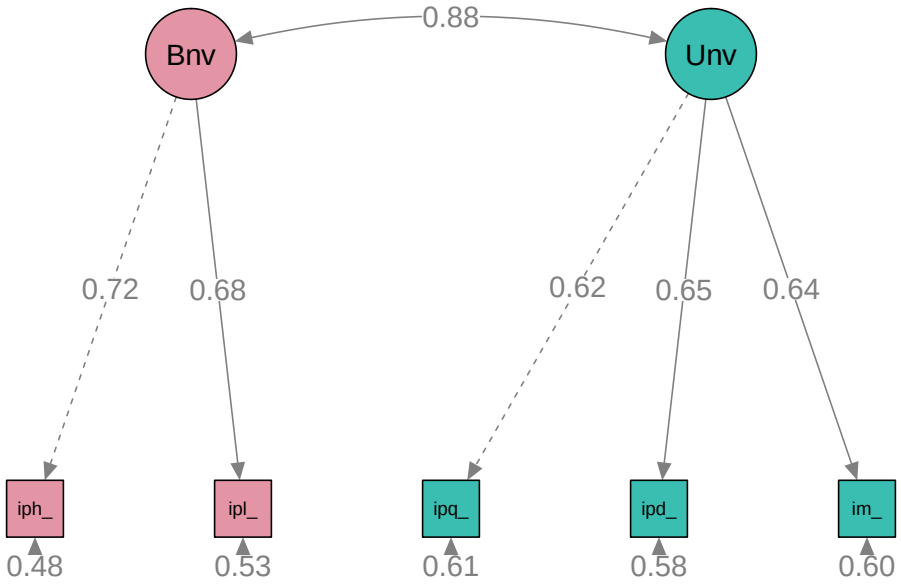
```r
lavaan.scalfit3 <- lavaan(model13, data=ds_filtrada,
                          auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                          int.ov.free=TRUE,     #intercepts not fixed to 0
                          meanstructure=TRUE,   #the means of the observed variables enter the model, n
                          auto.var=TRUE,        #residual variances and variances of exogeneous latent
                          auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                          estimator="MLM",
                          group = "cntry",
                          group.label = countries,
                          group.equal=c("loadings","intercepts"),group.partial= c("iplylfr_r ~1","ipeqop
survey.scalfit3 <- lavaan.survey(lavaan.fit=lavaan.scalfit3,survey.design=survey.design)
# mi3 <- modindices(survey.scalfit3, sort = T, free.remove = F)
# mi3[mi3$op == "~1",]

# 4. check whether factor variances are equal across groups
lavaan.varianfit3 <- lavaan(model13, data=ds_filtrada,
                          auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                          int.ov.free=TRUE,     #intercepts not fixed to 0
                          meanstructure=TRUE,   #the means of the observed variables enter the model, n
                          auto.var=TRUE,        #residual variances and variances of exogeneous latent
                          auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                          estimator="MLM",
                          group = "cntry",
                          group.label = countries,
                          group.equal=c("loadings","intercepts","lv.variances"),
                          group.partial= c("iplylfr_r ~1","ipeqopt_r~1"))
survey.varianfit3 <- lavaan.survey(lavaan.fit=lavaan.varianfit3,survey.design=survey.design)
# mi3 <- modindices(survey.varianfit3, sort = T, free.remove = F)
# mi3[mi3$op == "~~",]


invar <- data.frame(round(rbind(Configural = fitMeasures(survey.conffit3, c("cfi", "rmsea","cfi.robus
                                Metric = fitMeasures(survey.metrfit3, c("cfi", "rmsea","cfi.robus
                                Scalar = fitMeasures(survey.scalfit3, c("cfi", "rmsea","cfi.robus
                                Strict = fitMeasures(survey.varianfit3, c("cfi", "rmsea","cfi.robu
dif <- invar %>%
    mutate_all(funs(abs(. - lag(.))) )
colnames(dif) <- c("delta.cfi","delta.rmsea","delta.Robcfi","delta.Scalrmsea")
print(paste("ESS round: ", r))
print(cbind(invar,dif))

invaraut <- measurementInvariance(model = model13,
                      data=ds_filtrada,
                      group = "cntry",group.label = countries,
                      strict = TRUE,group.partial = c("iplylfr_r ~1") )


# countries1 <- c("Belgium", "Germany", "Ireland", "United Kingdom","Norway")
# invaraut1 <- measurementInvariance(model = model3,
#                       data=ds_filtrada,
#                       group = "cntry",group.label = countries1,
#                       strict = TRUE,group.partial = c("iplylfr_r ~1") )
#
```

```r
  # countries2 <- c("Czechia",  "Austria" , "Italy"  ,  "Slovenia" ,"Poland")
  # invaraut2 <- measurementInvariance(model = model3,
  #                       data=ds_filtrada,
  #                       group = "cntry",group.label = countries2,
  #                       strict = TRUE,group.partial = c("iplylfr_r ~1") )
  #
  # countries3 <- c("Netherlands", "France" )
  # invaraut3 <- measurementInvariance(model = model3,
  #                       data=ds_filtrada,
  #                       group = "cntry",group.label = countries3,
  #                       strict = TRUE,group.partial = c("iplylfr_r ~1") )
  #
  # countries4 <- c("Estonia","Switzerland")
  # invaraut4 <- measurementInvariance(model = model3,
  #                       data=ds_filtrada,
  #                       group = "cntry",group.label = countries4,
  #                       strict = TRUE,group.partial = c("ipeqopt_r ~1") )

  results <- partialInvariance(fit = invaraut, type = "strict")
  results$results


  assign(paste0("survey.scalfit3r",r),survey.scalfit3)
  invisible(semPaths(survey.scalfit3,"model","std","lisrel", edge.label.cex = 1.2, intercepts = FALSE,
                     panelGroups = FALSE, ask  = FALSE, groups = "latent", pastel = TRUE, exoCov = TRUE

}
```

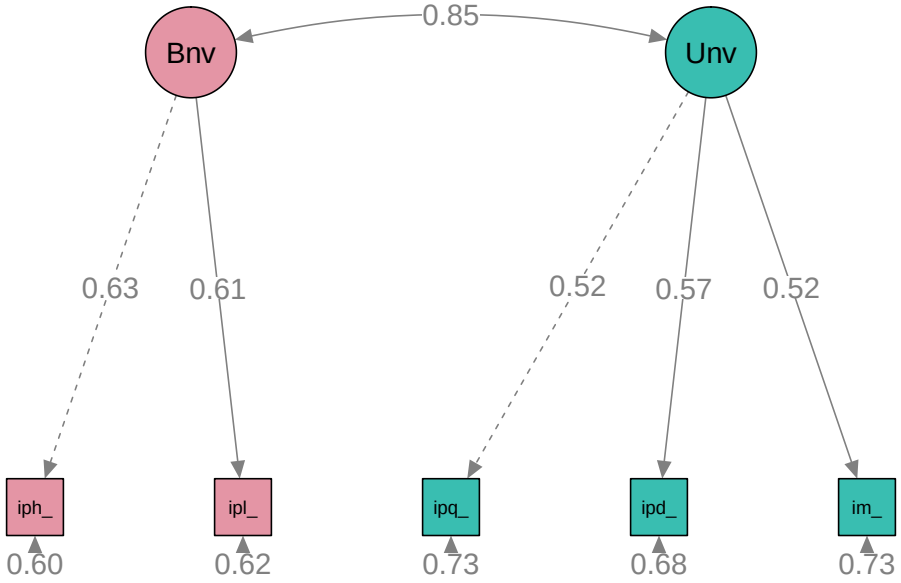
```
## [1] "ESS round:  8"
##              cfi rmsea cfi.robust rmsea.scaled delta.cfi delta.rmsea
## Configural 0.982 0.062      0.983        0.046        NA          NA
## Metric     0.974 0.057      0.976        0.043     0.008       0.005
## Scalar     0.940 0.081      0.942        0.064     0.034       0.024
## Strict     0.905 0.092      0.907        0.074     0.035       0.011
##            delta.Robcfi delta.Scalrmsea
## Configural           NA              NA
## Metric            0.007           0.003
## Scalar            0.034           0.021
## Strict            0.035           0.010
##
## Measurement invariance models:
##
## Model 1 : fit.configural
## Model 2 : fit.loadings
## Model 3 : fit.intercepts
## Model 4 : fit.residuals
## Model 5 : fit.means
##
## Chi-Squared Difference Test
##
##                 Df    AIC    BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## fit.configural  56 356363 358205  498.17
## fit.loadings    95 356534 358055  747.72     249.55      39  < 2.2e-16 ***
## fit.intercepts 121 357932 359239 2197.21    1449.49      26  < 2.2e-16 ***
```

```
## fit.residuals  186 360084 360857 4479.68    2282.47      65  < 2.2e-16 ***
## fit.means      212 362146 362705 6593.38    2113.70      26  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
##
## Fit measures:
##
##                   cfi rmsea cfi.delta rmsea.delta
## fit.configural 0.981 0.063        NA          NA
## fit.loadings   0.972 0.059     0.009       0.004
## fit.intercepts 0.912 0.093     0.060       0.034
## fit.residuals  0.818 0.108     0.094       0.015
## fit.means      0.730 0.124     0.088       0.015
```

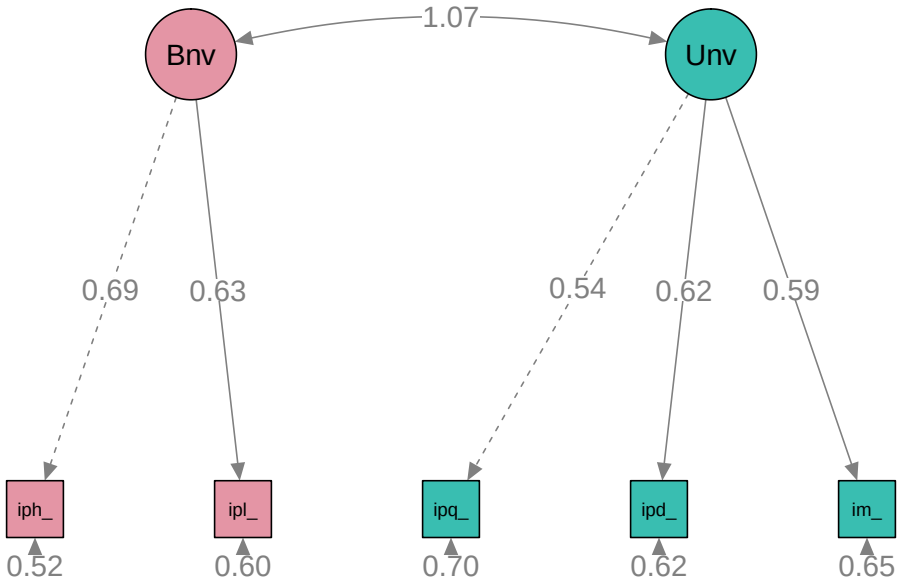
1



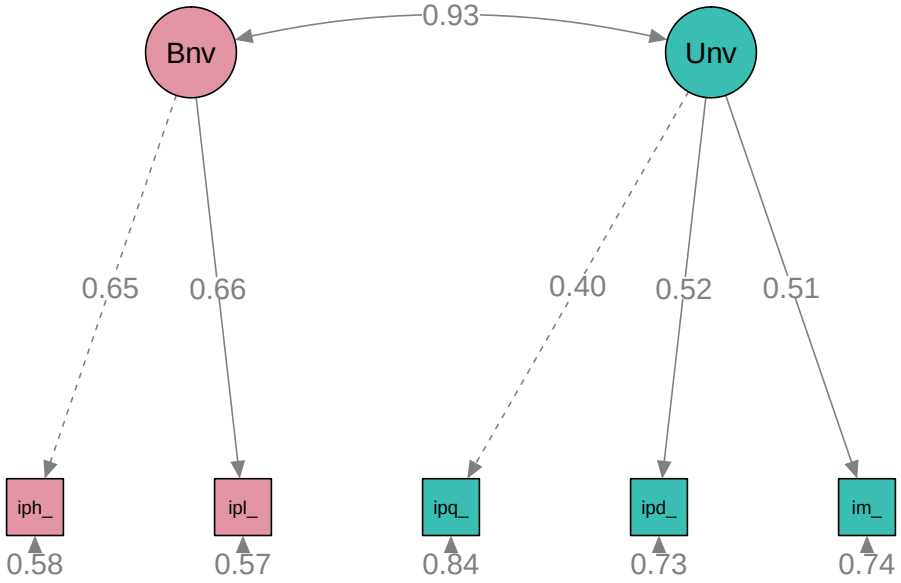
2


Bnv
Unv
0.85
0.63
0.61
0.52
0.57
0.52
iph_
ipl_
ipq_
ipd_
im_
0.60
0.62
0.73
0.68
0.73

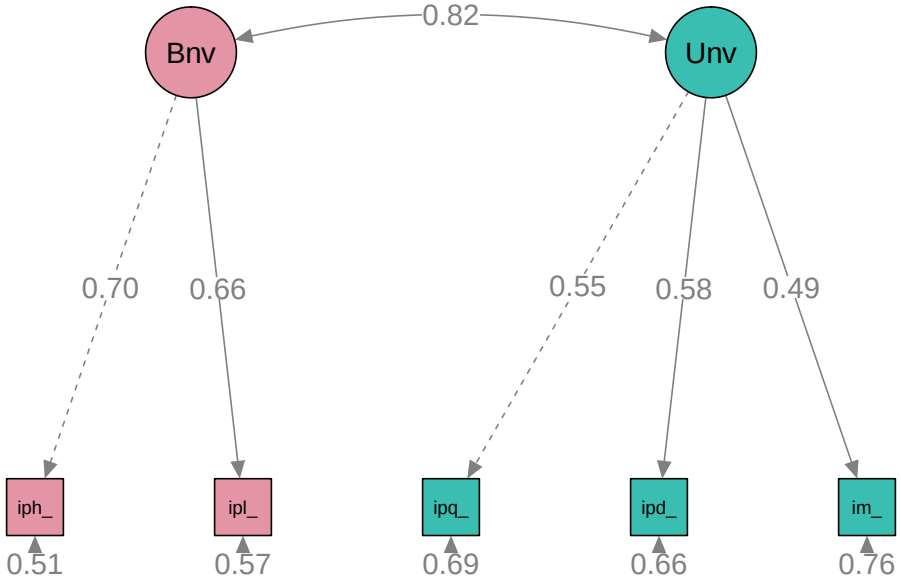
3


Bnv
Unv
1.07
0.69
0.63
0.54
0.62
0.59
iph_
ipl_
ipq_
ipd_
im_
0.52
0.60
0.70
0.62
0.65

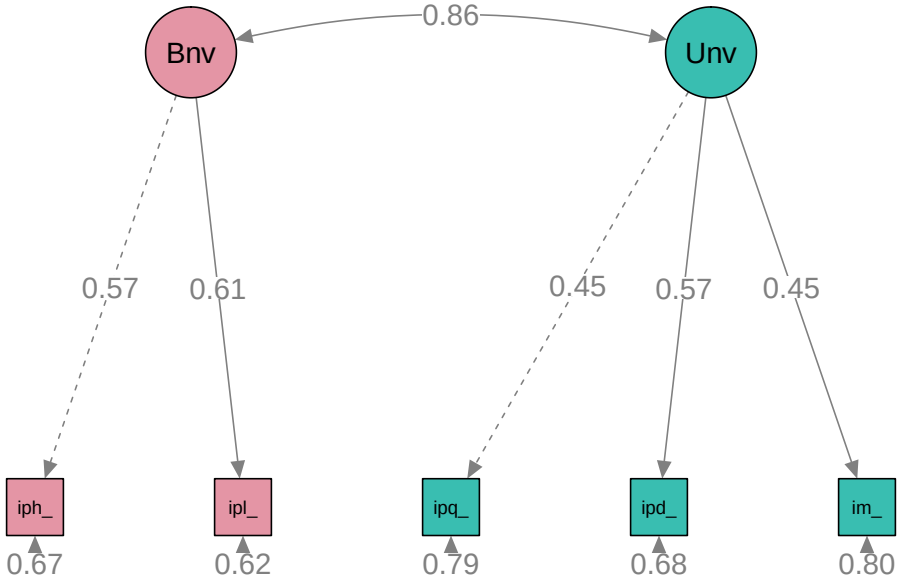
4


Bnv
Unv
0.93
0.65
0.66
0.40
0.52
0.51
iph_
ipl_
ipq_
ipd_
im_
0.58
0.57
0.84
0.73
0.74

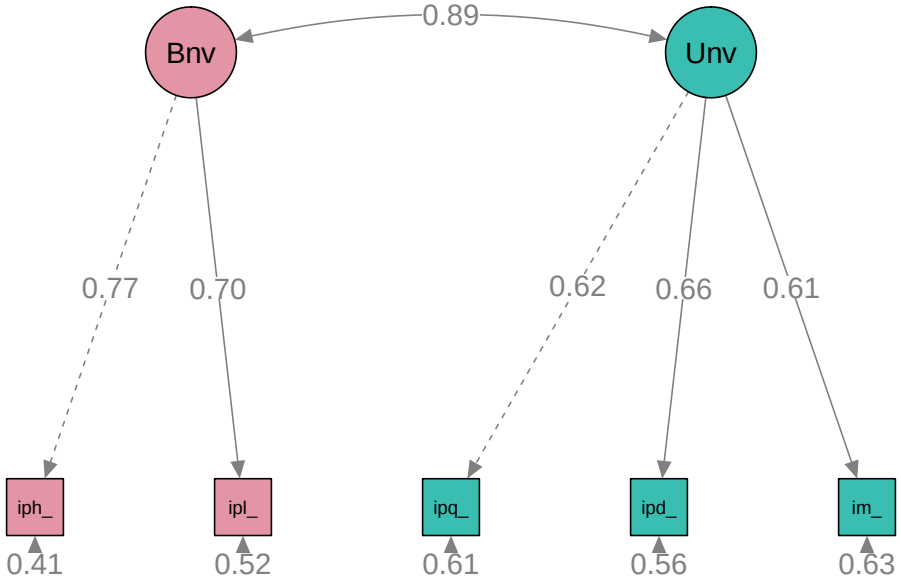
5


Bnv
Unv
0.82
0.70
0.66
0.55
0.58
0.49
iph_
ipl_
ipq_
ipd_
im_
0.51
0.57
0.69
0.66
0.76

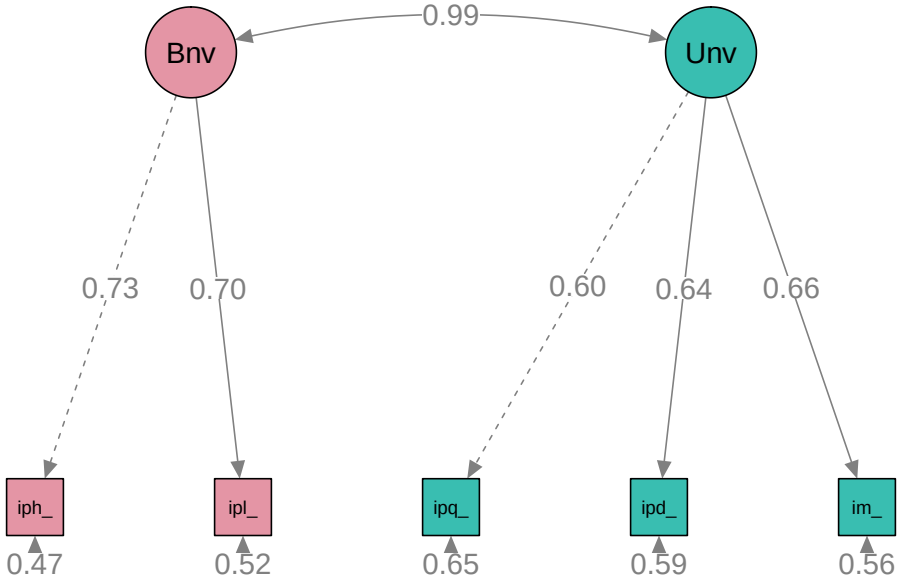
6


Bnv
Unv
0.86
0.57
0.61
0.45
0.57
0.45
iph_
ipl_
ipq_
ipd_
im_
0.67
0.62
0.79
0.68
0.80

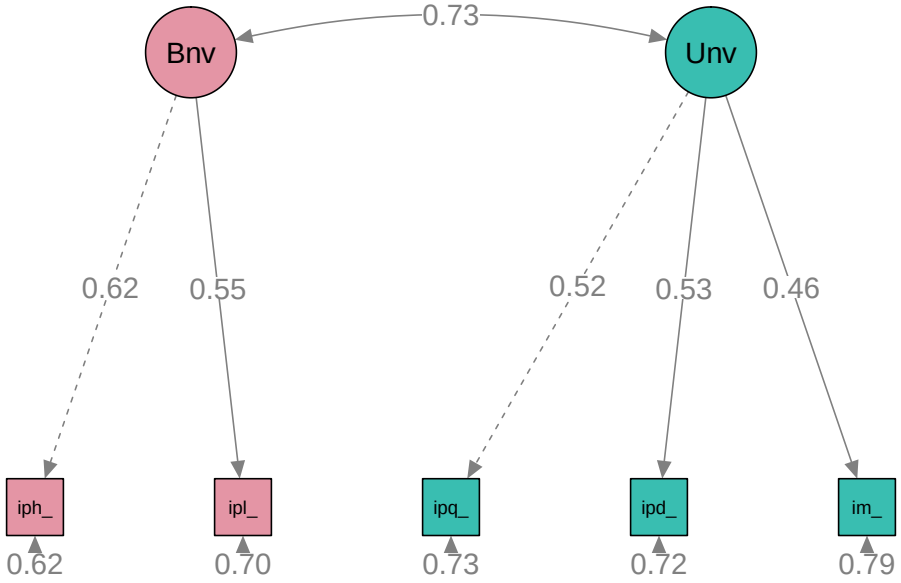
7


Bnv
Unv
0.89
0.77
0.70
0.62
0.66
0.61
iph_
ipl_
ipq_
ipd_
im_
0.41
0.52
0.61
0.56
0.63

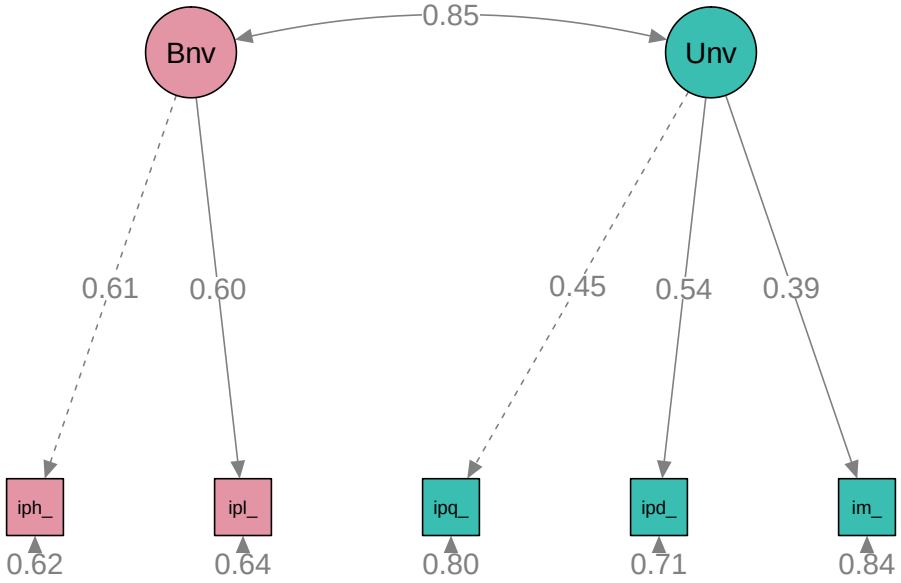
8


Bnv
Unv
0.99
0.73
0.70
0.60
0.64
0.66
iph_
ipl_
ipq_
ipd_
im_
0.47
0.52
0.65
0.59
0.56

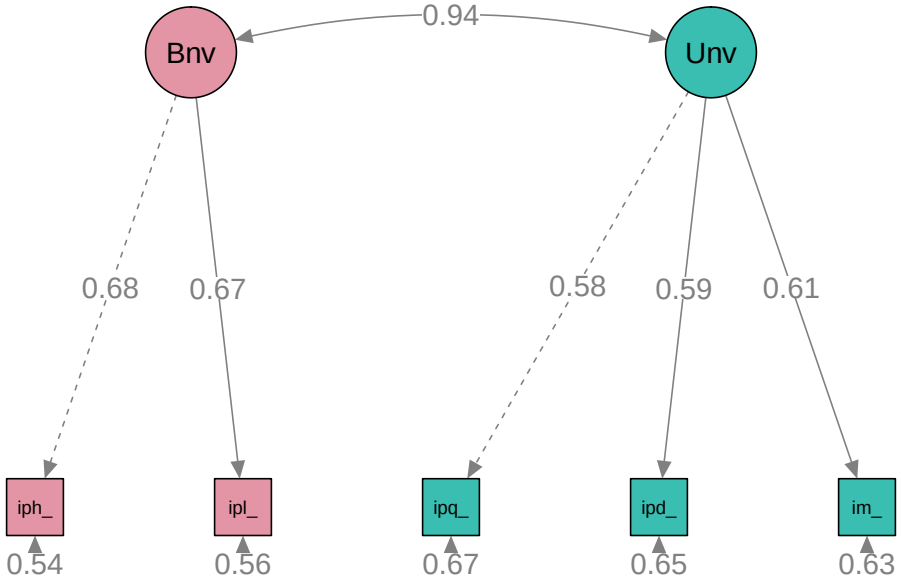
9


Bnv
Unv
0.73
0.62
0.55
0.52
0.53
0.46
iph_
ipl_
ipq_
ipd_
im_
0.62
0.70
0.73
0.72
0.79

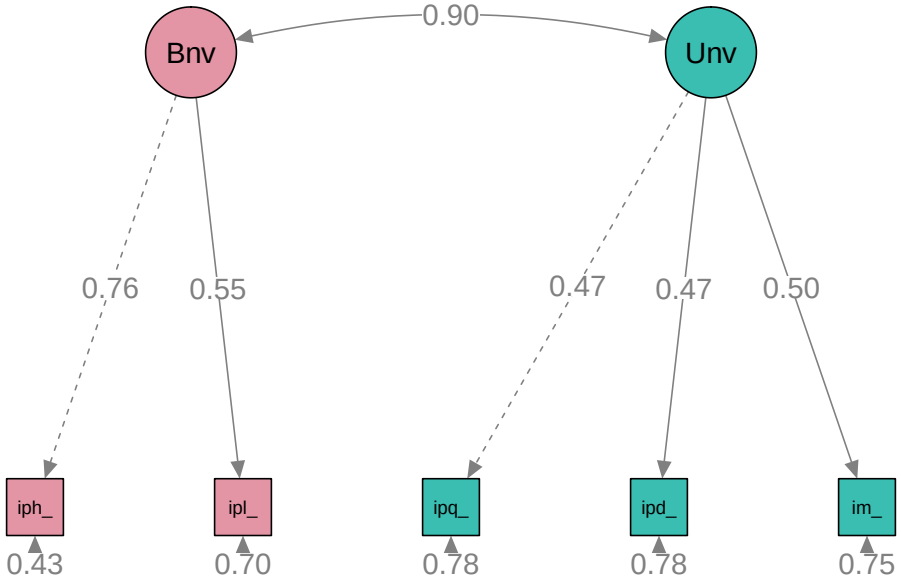
10


Bnv
Unv
0.85
0.61
0.60
0.45
0.54
0.39
iph_
ipl_
ipq_
ipd_
im_
0.62
0.64
0.80
0.71
0.84

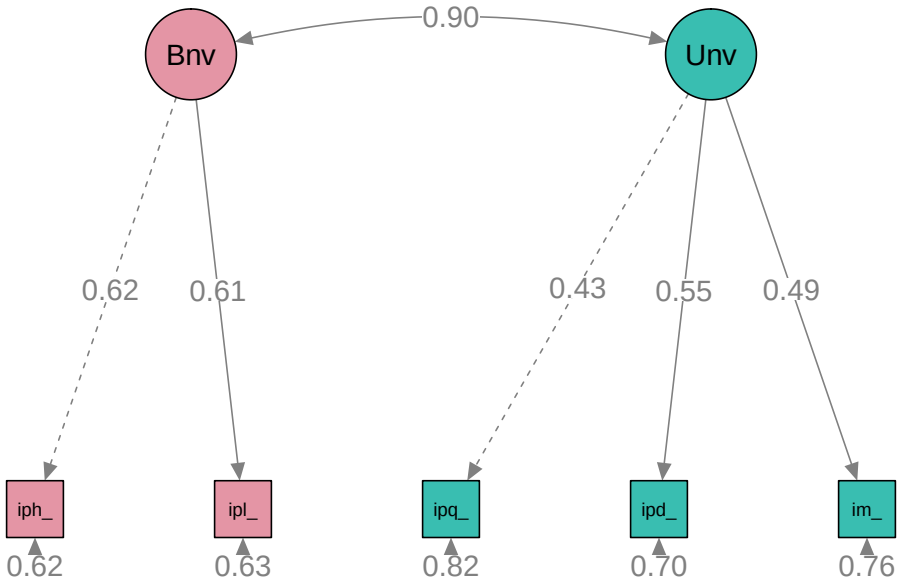
11


Bnv
Unv
0.94
0.68
0.67
0.58
0.59
0.61
iph_
ipl_
ipq_
ipd_
im_
0.54
0.56
0.67
0.65
0.63

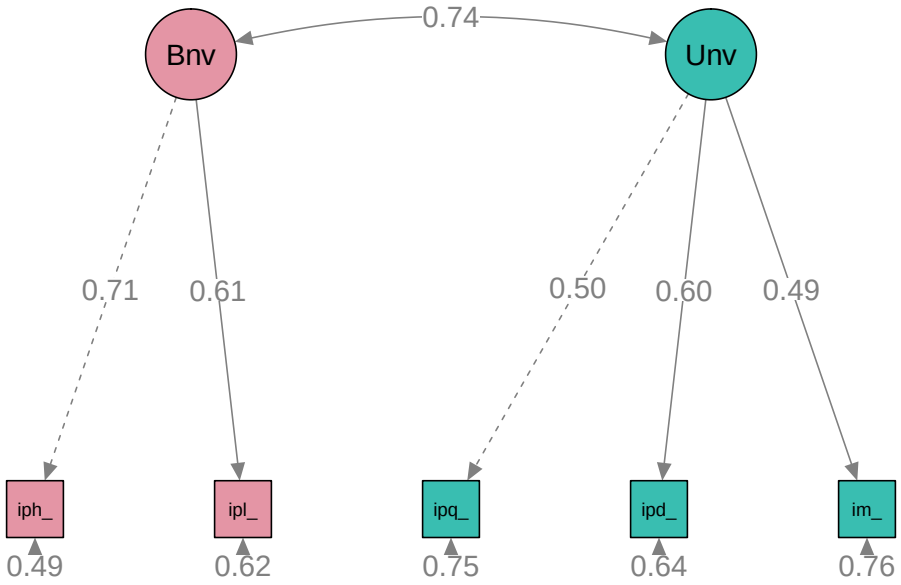
12


Bnv
Unv
0.90
0.76
0.55
0.47
0.47
0.50
iph_
ipl_
ipq_
ipd_
im_
0.43
0.70
0.78
0.78
0.75

13


Bnv
Unv
0.90
0.62
0.61
0.43
0.55
0.49
iph_
ipl_
ipq_
ipd_
im_
0.62
0.63
0.82
0.70
0.76

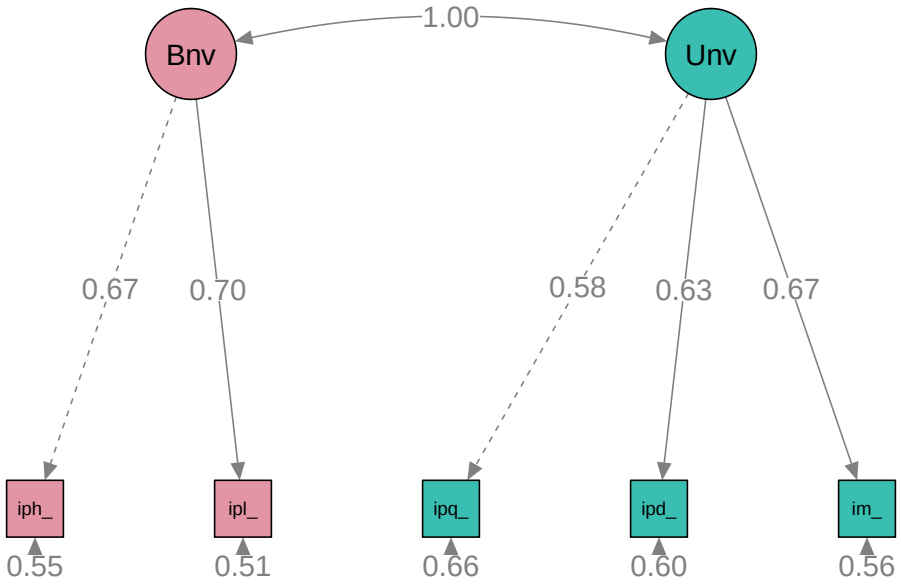
14



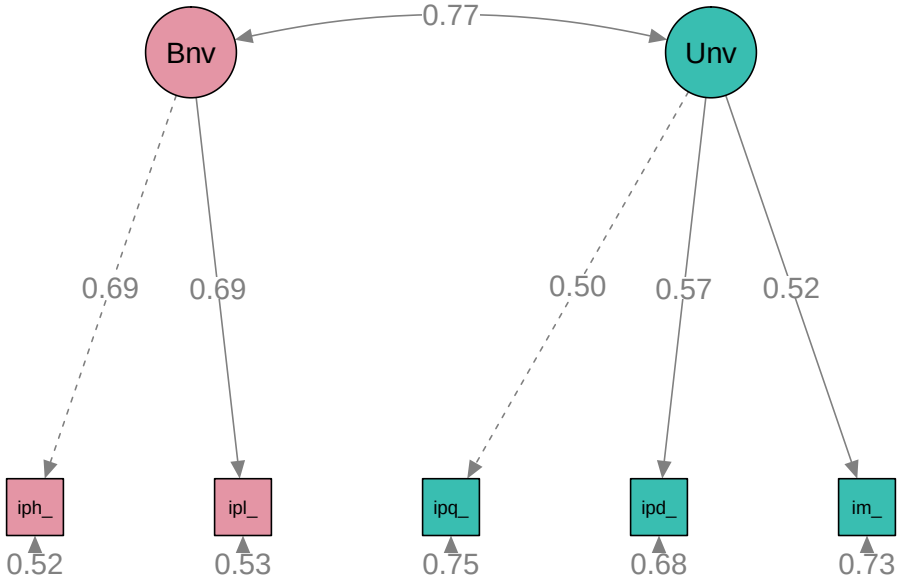

```
## [1] "ESS round:  9"
##              cfi rmsea cfi.robust rmsea.scaled delta.cfi delta.rmsea
## Configural 0.979 0.066      0.980        0.052        NA          NA
## Metric     0.968 0.063      0.970        0.051     0.011       0.003
## Scalar     0.940 0.081      0.941        0.067     0.028       0.018
## Strict     0.908 0.090      0.910        0.074     0.032       0.009
##            delta.Robcfi delta.Scalrmsea
## Configural           NA              NA
## Metric            0.010           0.001
## Scalar            0.029           0.016
## Strict            0.031           0.007
##
## Measurement invariance models:
##
## Model 1 : fit.configural
## Model 2 : fit.loadings
## Model 3 : fit.intercepts
## Model 4 : fit.residuals
## Model 5 : fit.means
##
## Chi-Squared Difference Test
##
##                 Df    AIC    BIC   Chisq Chisq diff Df diff Pr(>Chisq)
## fit.configural  56 343191 345027  482.80
## fit.loadings    95 343408 344925  778.24     295.45      39  < 2.2e-16 ***
## fit.intercepts 121 344695 345998 2116.67    1338.42      26  < 2.2e-16 ***
```

```
## fit.residuals  186 346604 347375 4156.32    2039.65      65  < 2.2e-16 ***
## fit.means      212 348847 349404 6451.04    2294.72      26  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
##
## Fit measures:
##
##                   cfi rmsea cfi.delta rmsea.delta
## fit.configural 0.981 0.063        NA          NA
## fit.loadings   0.969 0.061     0.012       0.002
## fit.intercepts 0.910 0.093     0.059       0.032
## fit.residuals  0.820 0.106     0.089       0.013
## fit.means      0.718 0.124     0.103       0.018
```

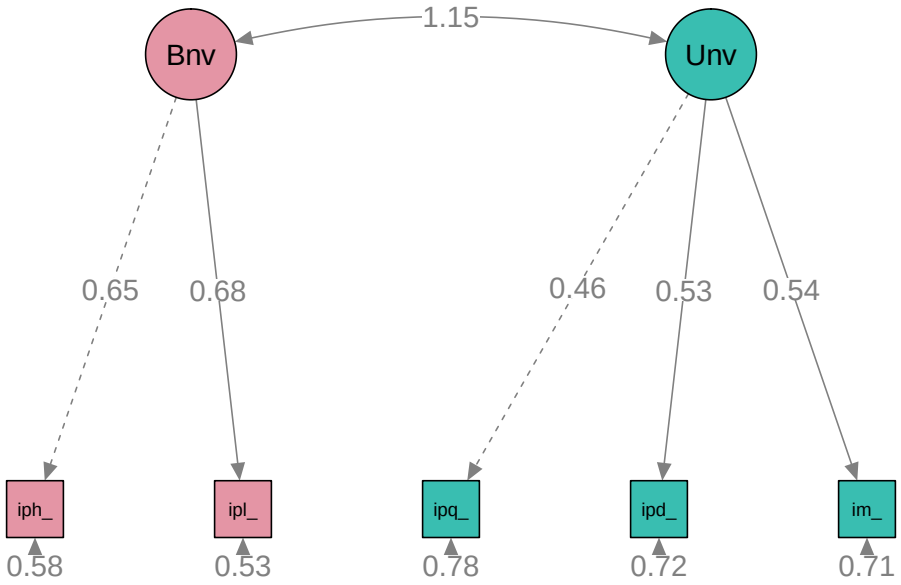
1



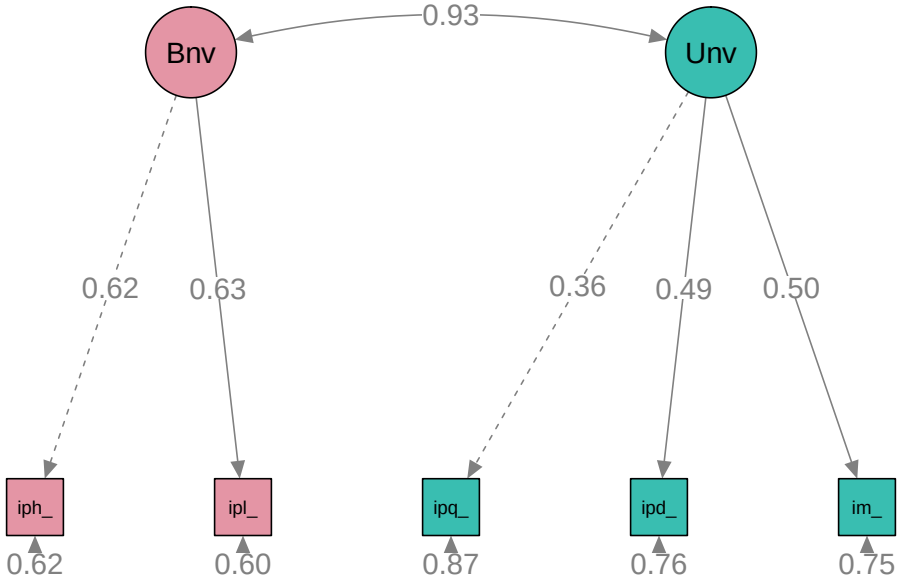
2


Bnv
Unv
0.77
0.69
0.69
0.50
0.57
0.52
iph_
ipl_
ipq_
ipd_
im_
0.52
0.53
0.75
0.68
0.73

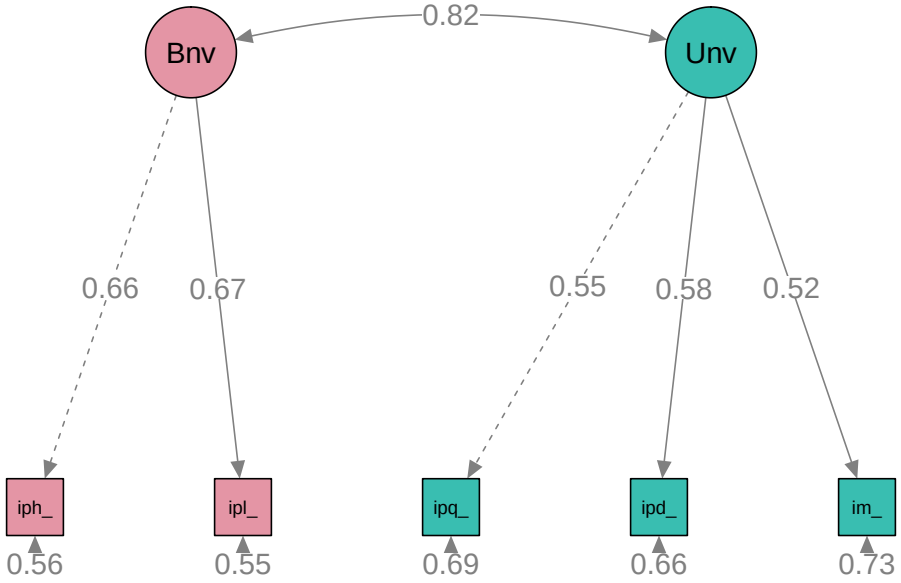
3


Bnv
Unv
1.15
0.65
0.68
0.46
0.53
0.54
iph_
ipl_
ipq_
ipd_
im_
0.58
0.53
0.78
0.72
0.71

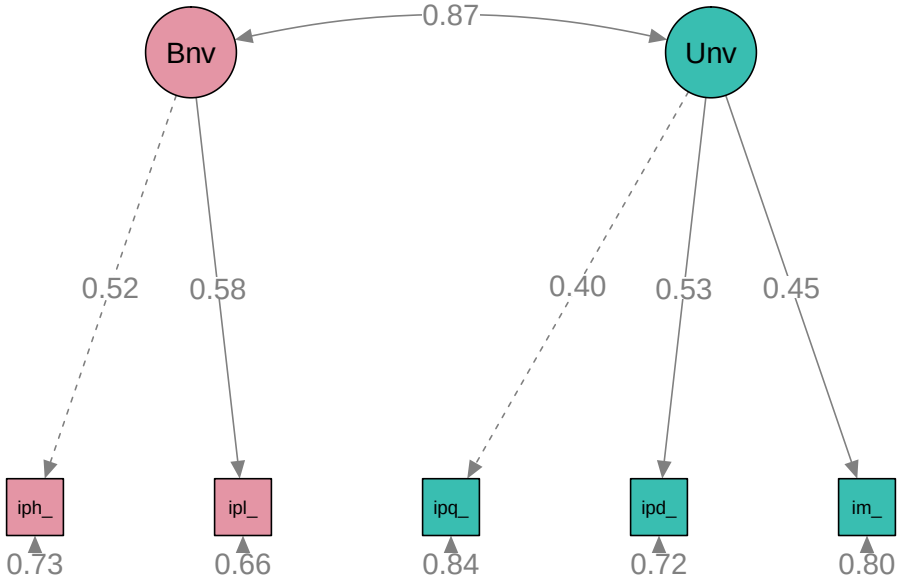
4


Bnv
Unv
0.93
0.62
0.63
0.36
0.49
0.50
iph_
ipl_
ipq_
ipd_
im_
0.62
0.60
0.87
0.76
0.75

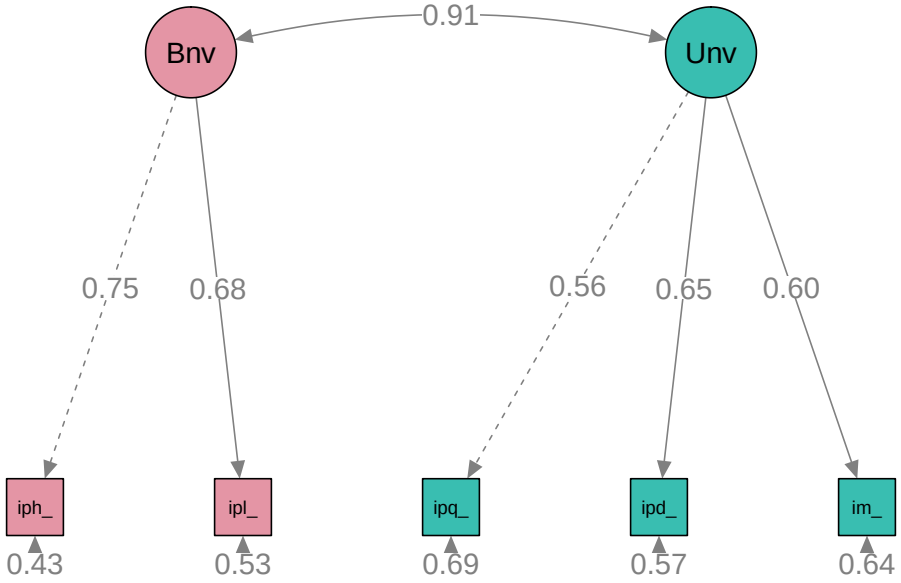
5


Bnv
Unv
0.82
0.66
0.67
0.55
0.58
0.52
iph_
ipl_
ipq_
ipd_
im_
0.56
0.55
0.69
0.66
0.73

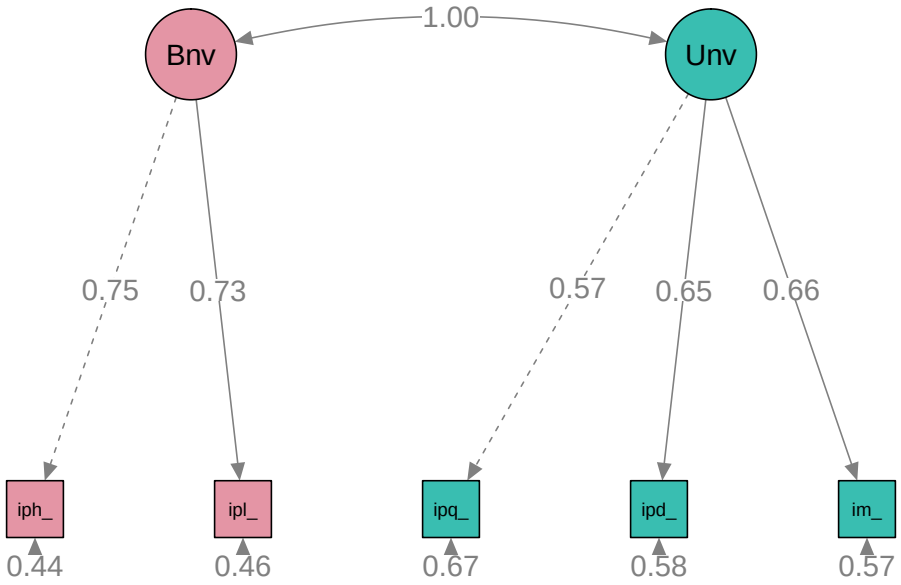
6


Bnv
Unv
0.87
0.52
0.58
0.40
0.53
0.45
iph_
ipl_
ipq_
ipd_
im_
0.73
0.66
0.84
0.72
0.80

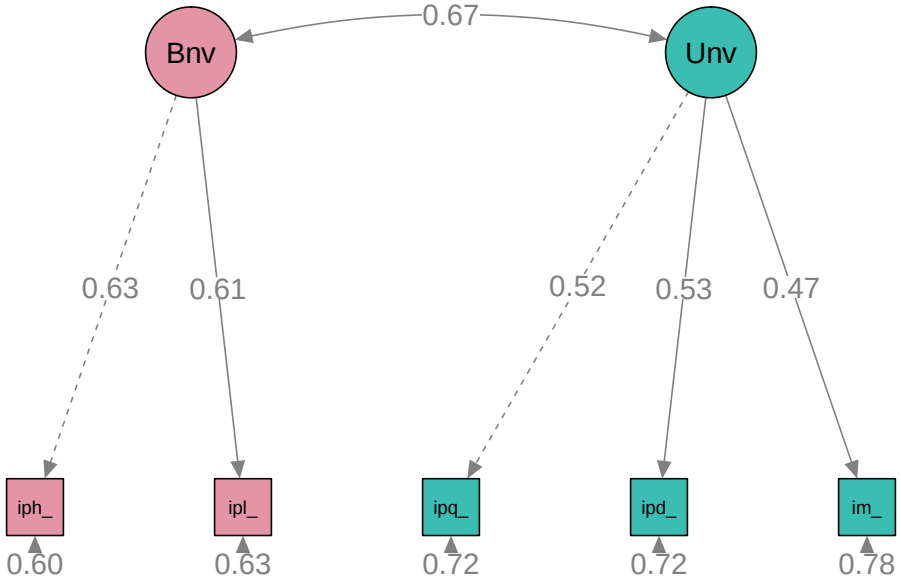
7


Bnv
Unv
0.91
0.75
0.68
0.56
0.65
0.60
iph_
ipl_
ipq_
ipd_
im_
0.43
0.53
0.69
0.57
0.64

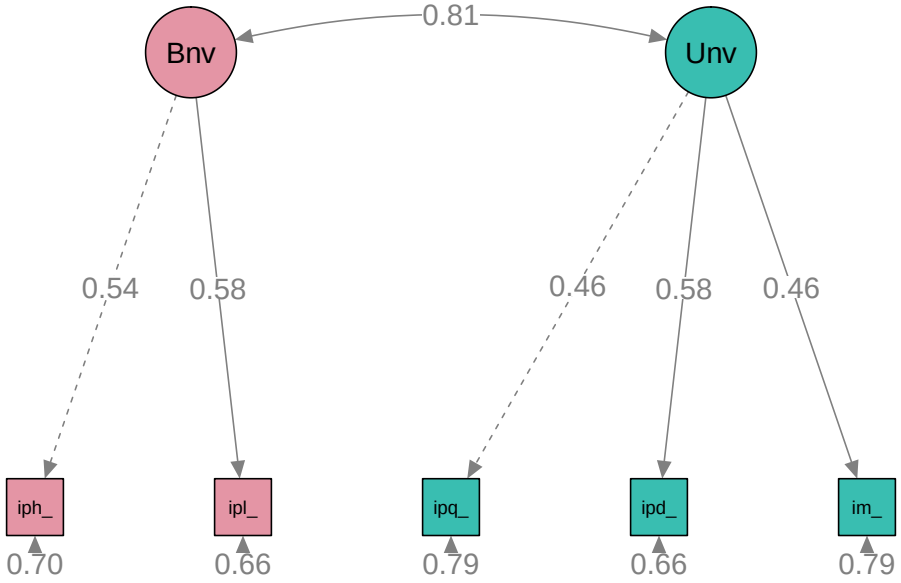
8


Bnv
Unv
1.00
0.75
0.73
0.57
0.65
0.66
iph_
ipl_
ipq_
ipd_
im_
0.44
0.46
0.67
0.58
0.57

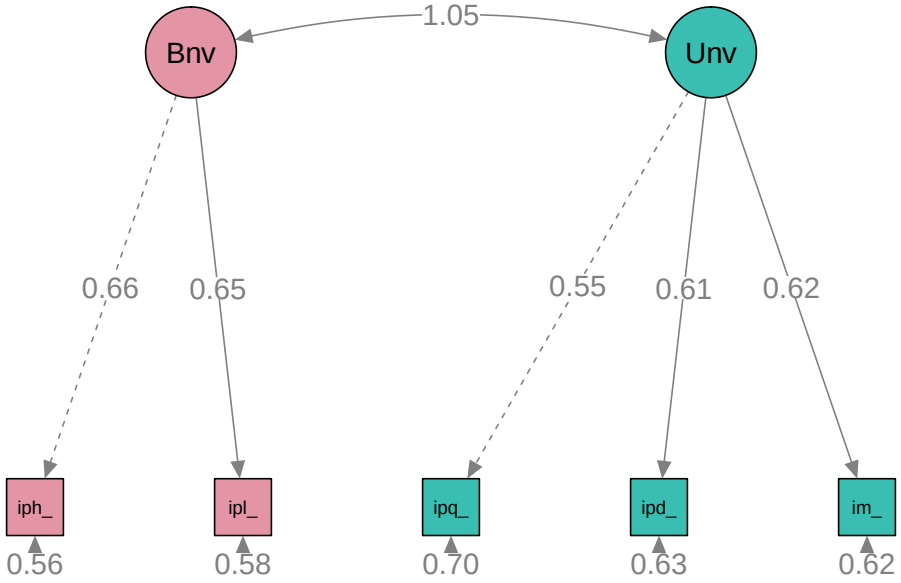
9


Bnv
Unv
0.67
0.63
0.61
0.52
0.53
0.47
iph_
ipl_
ipq_
ipd_
im_
0.60
0.63
0.72
0.72
0.78

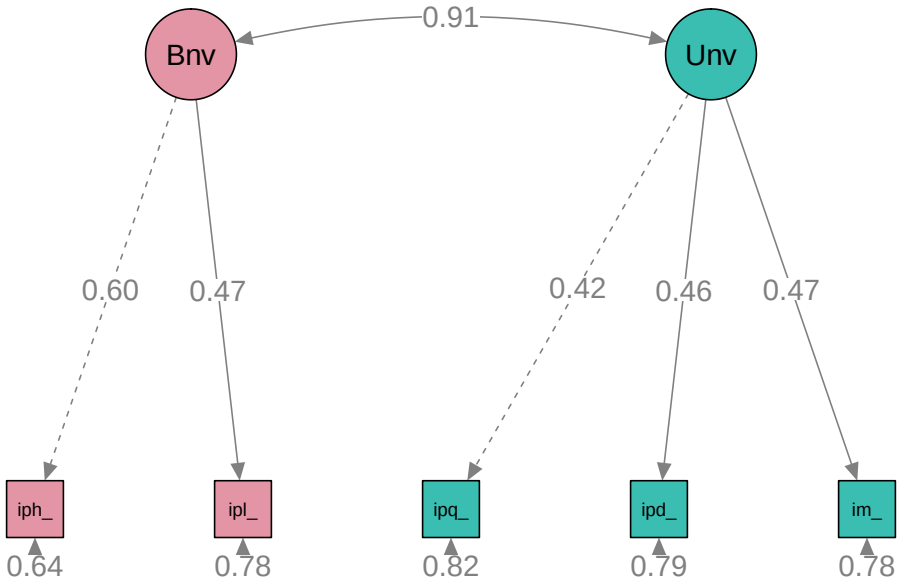
10


Bnv
Unv
0.81
0.54
0.58
0.46
0.58
0.46
iph_
ipl_
ipq_
ipd_
im_
0.70
0.66
0.79
0.66
0.79

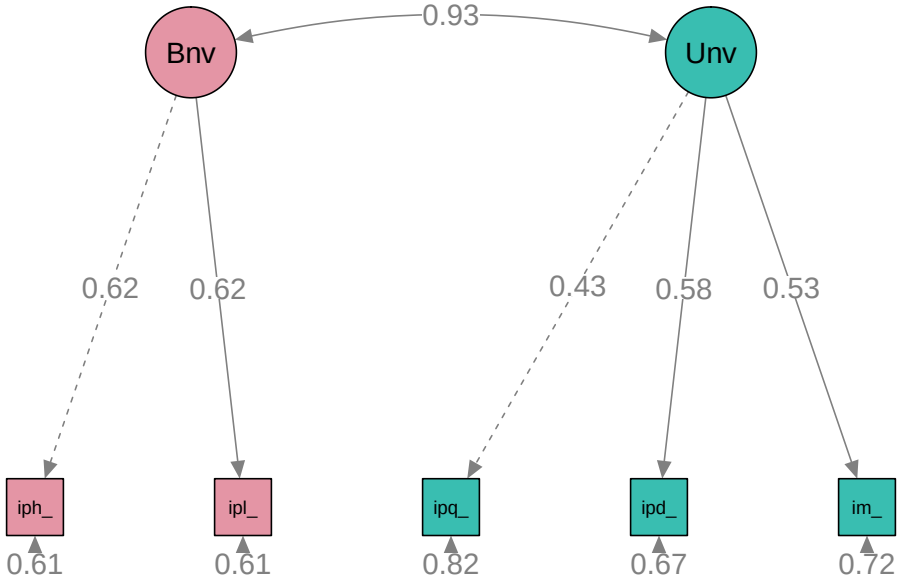
11


Bnv
Unv
1.05
0.66
0.65
0.55
0.61
0.62
iph_
ipl_
ipq_
ipd_
im_
0.56
0.58
0.70
0.63
0.62

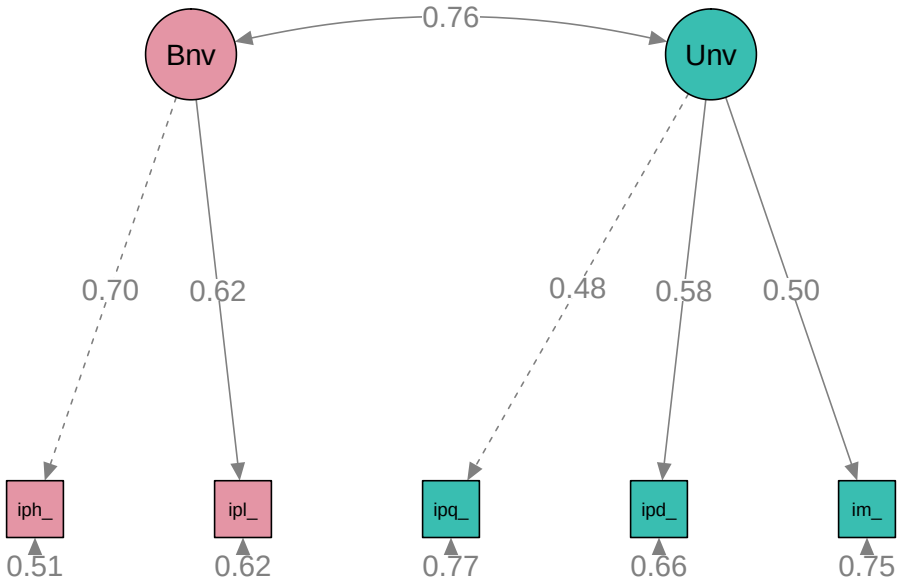
12


Bnv
Unv
0.91
0.60
0.47
0.42
0.46
0.47
iph_
ipl_
ipq_
ipd_
im_
0.64
0.78
0.82
0.79
0.78

13


Bnv
Unv
0.93
0.62
0.62
0.43
0.58
0.53
iph_
ipl_
ipq_
ipd_
im_
0.61
0.61
0.82
0.67
0.72

14

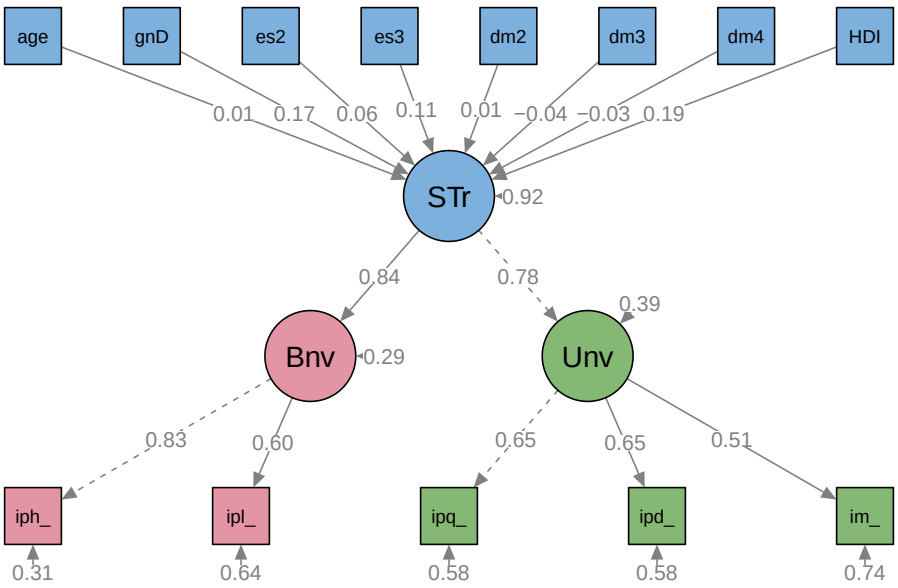


Model SEM

```
semmodel21 <-'
Benev =~ iphlppl_r + iplylfr_r
Unive =~ ipeqopt_r + ipudrst_r + impenv_r
STrasc =~ Unive + Benev
STrasc ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4 + HDI
Unive ~~ 0.2*Unive
Benev ~~ 0.2*Benev
'


for (r in c(8,9)) {
  ds_filtrada2 <- ds_filtradaAll %>% filter(essround == r)
  survey.design2 <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada2)

  lavaan.semfit <- lavaan(semmodel21, data=ds_filtrada2,
                          auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                          int.ov.free=TRUE,     #intercepts not fixed to 0
                          meanstructure=TRUE,   #the means of the observed variables enter the model, n
                          auto.var=TRUE,        #residual variances and variances of exogeneous latent
                          auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                          estimator="MLM",
                          cluster = "cntry")
  survey.semfit <- lavaan.survey(lavaan.fit=lavaan.semfit,survey.design=survey.design2)
```

```
  assign(paste0("survey.semfit",r),survey.semfit)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.semfit, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
  print(modindices(survey.semfit,sort=T)[1:10,])
  invisible(semPaths(survey.semfit,"model","std","lisrel", edge.label.cex = 0.8, intercepts = FALSE, la
                     groups = "latent", pastel = TRUE, exoCov = FALSE, optimizeLatRes = TRUE))

  print(summary(survey.semfit, standardized=T, rsquare=T, fit.measures=T))

}
```

```
## [1] "ESS round:  8"
##         chisq        pvalue           cfi           tli         rmsea
##      3831.896         0.000         0.866         0.819         0.061
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.031      1344.495         0.000         0.868         0.821
##  rmsea.robust  srmr_bentler
##         0.061         0.031
##          lhs op       rhs       mi    epc sepc.lv sepc.all sepc.nox
## 80     Unive =~ iplylfr_r 1165.808  0.577   0.414    0.459    0.459
## 96     Benev ~~     Unive 1124.187  0.189   0.947    0.947    0.947
## 82    STrasc =~ iplylfr_r 1098.172  1.739   0.977    1.083    1.083
## 81    STrasc =~ iphlppl_r 1098.156 -2.685  -1.509   -1.510   -1.510
## 1      Benev =~ iphlppl_r 1098.145 -1.076  -0.895   -0.895   -0.895
## 17     Benev ~~     Benev 1098.135 -0.431  -0.289   -0.289   -0.289
## 86 iphlppl_r ~~ iplylfr_r 1098.135 -0.279  -0.279   -0.695   -0.695
## 16     Unive ~~     Unive  834.631 -0.243  -0.388   -0.388   -0.388
## 3      Unive =~ ipeqopt_r  834.629 -0.608  -0.437   -0.393   -0.393
## 83    STrasc =~ ipeqopt_r  832.442 -0.926  -0.521   -0.469   -0.469
```




```
## lavaan 0.6-5 ended normally after 88 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         23
##
##   Number of observations                        27310
##
## Model Test User Model:
##                                                   Standard      Robust
##   Test Statistic                                3831.896    1344.495
##   Degrees of freedom                                  37          37
##   P-value (Chi-square)                             0.000       0.000
##   Scaling correction factor                                    2.850
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                               28331.529   10978.076
##   Degrees of freedom                                  50          50
##   P-value                                          0.000       0.000
##   Scaling correction factor                                    2.581
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                      0.866       0.880
```

```
##   Tucker-Lewis Index (TLI)                       0.819       0.838
##
##   Robust Comparative Fit Index (CFI)                         0.868
##   Robust Tucker-Lewis Index (TLI)                            0.821
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)           -322799.479 -322799.479
##   Loglikelihood unrestricted model (H1)   -320883.531 -320883.531
##
##   Akaike (AIC)                             645644.957  645644.957
##   Bayesian (BIC)                           645833.902  645833.902
##   Sample-size adjusted Bayesian (BIC)      645760.809  645760.809
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.061       0.036
##   90 Percent confidence interval - lower         0.060       0.035
##   90 Percent confidence interval - upper         0.063       0.037
##   P-value RMSEA <= 0.05                          0.000       1.000
##
##   Robust RMSEA                                               0.061
##   90 Percent confidence interval - lower                     0.058
##   90 Percent confidence interval - upper                     0.064
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                           0.031       0.031
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r        1.000                               0.831    0.832
##     iplylfr_r        0.648    0.013   48.784    0.000    0.538    0.597
##   Unive =~
##     ipeqopt_r        1.000                               0.718    0.647
##     ipudrst_r        0.948    0.017   54.191    0.000    0.681    0.650
##     impenv_r         0.735    0.016   45.581    0.000    0.528    0.510
##   STrasc =~
##     Unive            1.000                               0.783    0.783
##     Benev            1.247    0.035   35.594    0.000    0.843    0.843
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc ~
##     agea             0.000    0.000    0.656    0.512    0.000    0.006
##     gndrD            0.191    0.010   18.342    0.000    0.340    0.170
##     eisced2          0.070    0.012    5.953    0.000    0.124    0.057
```

```
##     eisced3           0.142    0.012   11.844    0.000    0.252    0.106
##     domicil2          0.017    0.011    1.504    0.132    0.030    0.014
##     domicil3         -0.074    0.017   -4.404    0.000   -0.132   -0.041
##     domicil4         -0.052    0.016   -3.317    0.001   -0.093   -0.035
##     HDI               4.083    0.199   20.564    0.000    7.265    0.192
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -0.007    0.200   -0.035    0.972   -0.007   -0.007
##    .iplylfr_r         1.946    0.137   14.164    0.000    1.946    2.157
##    .ipeqopt_r         0.938    0.181    5.174    0.000    0.938    0.846
##    .ipudrst_r         0.982    0.163    6.042    0.000    0.982    0.937
##    .impenv_r          1.993    0.125   15.925    0.000    1.993    1.925
##    .Benev             0.000                              0.000    0.000
##    .Unive             0.000                              0.000    0.000
##    .STrasc            0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .Unive             0.200                              0.388    0.388
##    .Benev             0.200                              0.289    0.289
##    .iphlppl_r         0.308    0.012   25.467    0.000    0.308    0.308
##    .iplylfr_r         0.524    0.009   57.740    0.000    0.524    0.644
##    .ipeqopt_r         0.715    0.014   50.422    0.000    0.715    0.581
##    .ipudrst_r         0.635    0.013   50.552    0.000    0.635    0.578
##    .impenv_r          0.793    0.013   62.318    0.000    0.793    0.740
##    .STrasc            0.291    0.012   24.475    0.000    0.923    0.923
##
## R-Square:
##                    Estimate
##     Unive             0.612
##     Benev             0.711
##     iphlppl_r         0.692
##     iplylfr_r         0.356
##     ipeqopt_r         0.419
##     ipudrst_r         0.422
##     impenv_r          0.260
##     STrasc            0.077
##
## $FIT
##                          npar                          fmin
##                        23.000                         0.070
##                         chisq                           df
##                      3831.896                       37.000
##                        pvalue                  chisq.scaled
##                         0.000                      1344.495
##                    df.scaled                 pvalue.scaled
##                        37.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         2.850                     28331.529
##                   baseline.df               baseline.pvalue
##                        50.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     10978.076                        50.000
```

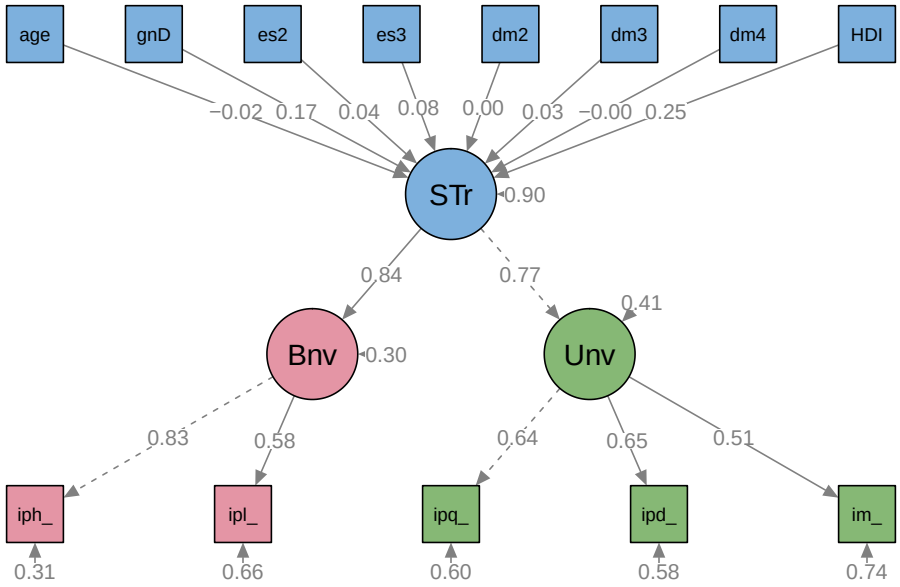
```
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         2.581
##                           cfi                           tli
##                         0.866                         0.819
##                    cfi.scaled                    tli.scaled
##                         0.880                         0.838
##                    cfi.robust                    tli.robust
##                         0.868                         0.821
##                          logl            unrestricted.logl
##                    -322799.479                   -320883.531
##                           aic                           bic
##                    645644.957                    645833.902
##                        ntotal                          bic2
##                     27310.000                    645760.809
##                         rmsea                rmsea.ci.lower
##                         0.061                         0.060
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.063                         0.000
##                   rmsea.scaled         rmsea.ci.lower.scaled
##                         0.036                         0.035
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.037                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.061                         0.058
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.064                            NA
##                          srmr
##                         0.031
##
## $PE
##          lhs op       rhs exo           est          se           z
## 1      Benev =~ iphlppl_r   0  1.000000e+00 0.000000000          NA
## 2      Benev =~ iplylfr_r   0  6.476682e-01 0.013276124 48.78443471
## 3      Unive =~ ipeqopt_r   0  1.000000e+00 0.000000000          NA
## 4      Unive =~ ipudrst_r   0  9.480916e-01 0.017495368 54.19100896
## 5      Unive =~  impenv_r   0  7.349787e-01 0.016124523 45.58141976
## 6     STrasc =~     Unive   0  1.000000e+00 0.000000000          NA
## 7     STrasc =~     Benev   0  1.247058e+00 0.035035338 35.59428838
## 8     STrasc  ~      agea   0  1.749558e-04 0.000266728  0.65593330
## 9     STrasc  ~     gndrD   0  1.911547e-01 0.010421720 18.34195744
## 10    STrasc  ~   eisced2   0  6.965654e-02 0.011700643  5.95322336
## 11    STrasc  ~   eisced3   0  1.419086e-01 0.011981097 11.84437254
## 12    STrasc  ~  domicil2   0  1.671623e-02 0.011111154  1.50445443
## 13    STrasc  ~  domicil3   0 -7.396456e-02 0.016794454 -4.40410665
## 14    STrasc  ~  domicil4   0 -5.227920e-02 0.015761332 -3.31692806
## 15    STrasc  ~       HDI   0  4.083276e+00 0.198567823 20.56363539
## 16     Unive ~~     Unive   0  2.000000e-01 0.000000000          NA
## 17     Benev ~~     Benev   0  2.000000e-01 0.000000000          NA
## 18 iphlppl_r ~~ iphlppl_r   0  3.075509e-01 0.012076230 25.46745808
## 19 iplylfr_r ~~ iplylfr_r   0  5.237545e-01 0.009070931 57.73988826
## 20 ipeqopt_r ~~ ipeqopt_r   0  7.150089e-01 0.014180504 50.42196858
## 21 ipudrst_r ~~ ipudrst_r   0  6.351541e-01 0.012564269 50.55241269
## 22  impenv_r ~~  impenv_r   0  7.933726e-01 0.012731035 62.31800120
## 23    STrasc ~~    STrasc   0  2.914627e-01 0.011908702 24.47476537
```

```
## 24      agea ~~      agea   1  3.427142e+02 0.000000000          NA
## 25      agea ~~     gndrD   1  3.514386e-01 0.000000000          NA
## 26      agea ~~   eisced2   1 -8.641592e-01 0.000000000          NA
## 27      agea ~~   eisced3   1 -5.996190e-01 0.000000000          NA
## 28      agea ~~  domicil2   1 -1.137346e-01 0.000000000          NA
## 29      agea ~~  domicil3   1  1.829517e-02 0.000000000          NA
## 30      agea ~~  domicil4   1 -3.808200e-01 0.000000000          NA
## 31      agea ~~       HDI   1  1.074974e-02 0.000000000          NA
## 32     gndrD ~~     gndrD   1  2.495591e-01 0.000000000          NA
## 33     gndrD ~~   eisced2   1  1.601448e-03 0.000000000          NA
## 34     gndrD ~~   eisced3   1  1.828659e-03 0.000000000          NA
## 35     gndrD ~~  domicil2   1  4.841410e-03 0.000000000          NA
## 36     gndrD ~~  domicil3   1 -1.962916e-03 0.000000000          NA
## 37     gndrD ~~  domicil4   1  5.687496e-04 0.000000000          NA
## 38     gndrD ~~       HDI   1 -4.143478e-04 0.000000000          NA
## 39   eisced2 ~~   eisced2   1  2.117499e-01 0.000000000          NA
## 40   eisced2 ~~   eisced3   1 -6.869942e-02 0.000000000          NA
## 41   eisced2 ~~  domicil2   1  4.305092e-03 0.000000000          NA
## 42   eisced2 ~~  domicil3   1 -5.878843e-07 0.000000000          NA
## 43   eisced2 ~~  domicil4   1  1.699807e-03 0.000000000          NA
## 44   eisced2 ~~       HDI   1 -1.290770e-03 0.000000000          NA
## 45   eisced3 ~~   eisced3   1  1.747430e-01 0.000000000          NA
## 46   eisced3 ~~  domicil2   1 -4.430363e-03 0.000000000          NA
## 47   eisced3 ~~  domicil3   1  7.532168e-03 0.000000000          NA
## 48   eisced3 ~~  domicil4   1  1.751050e-02 0.000000000          NA
## 49   eisced3 ~~       HDI   1  1.084568e-03 0.000000000          NA
## 50  domicil2 ~~  domicil2   1  2.196542e-01 0.000000000          NA
## 51  domicil2 ~~  domicil3   1 -3.463694e-02 0.000000000          NA
## 52  domicil2 ~~  domicil4   1 -5.555368e-02 0.000000000          NA
## 53  domicil2 ~~       HDI   1 -1.246387e-05 0.000000000          NA
## 54  domicil3 ~~  domicil3   1  9.501091e-02 0.000000000          NA
## 55  domicil3 ~~  domicil4   1 -1.812802e-02 0.000000000          NA
## 56  domicil3 ~~       HDI   1  9.243921e-04 0.000000000          NA
## 57  domicil4 ~~  domicil4   1  1.414393e-01 0.000000000          NA
## 58  domicil4 ~~       HDI   1 -1.005859e-03 0.000000000          NA
## 59       HDI ~~       HDI   1  6.960898e-04 0.000000000          NA
## 60 iphlppl_r ~1             0 -6.916957e-03 0.200234738 -0.03454424
## 61 iplylfr_r ~1             0  1.945664e+00 0.137365590 14.16413043
## 62 ipeqopt_r ~1             0  9.384392e-01 0.181390910  5.17357352
## 63 ipudrst_r ~1             0  9.819569e-01 0.162533661  6.04156003
## 64  impenv_r ~1             0  1.993176e+00 0.125163371 15.92459414
## 65      agea ~1             1  5.015694e+01 0.000000000          NA
## 66     gndrD ~1             1  5.209922e-01 0.000000000          NA
## 67   eisced2 ~1             1  3.044242e-01 0.000000000          NA
## 68   eisced3 ~1             1  2.256703e-01 0.000000000          NA
## 69  domicil2 ~1             1  3.258001e-01 0.000000000          NA
## 70  domicil3 ~1             1  1.063136e-01 0.000000000          NA
## 71  domicil4 ~1             1  1.705148e-01 0.000000000          NA
## 72       HDI ~1             1  9.089486e-01 0.000000000          NA
## 73     Benev ~1             0  0.000000e+00 0.000000000          NA
## 74     Unive ~1             0  0.000000e+00 0.000000000          NA
## 75    STrasc ~1             0  0.000000e+00 0.000000000          NA
## 76     Unive r2     Unive   0  6.123365e-01          NA          NA
## 77     Benev r2     Benev   0  7.106861e-01          NA          NA
```

```
## 78 iphlppl_r r2 iphlppl_r   0  6.920924e-01          NA          NA
## 79 iplylfr_r r2 iplylfr_r   0  3.563558e-01          NA          NA
## 80 ipeqopt_r r2 ipeqopt_r   0  4.191265e-01          NA          NA
## 81 ipudrst_r r2 ipudrst_r   0  4.220067e-01          NA          NA
## 82  impenv_r r2  impenv_r   0  2.599582e-01          NA          NA
## 83    STrasc r2    STrasc   0  7.739078e-02          NA          NA
##          pvalue        std.lv       std.all       std.nox
## 1            NA  8.314389e-01  8.319209e-01  8.319209e-01
## 2  0.000000e+00  5.384965e-01  5.969555e-01  5.969555e-01
## 3            NA  7.182697e-01  6.473998e-01  6.473998e-01
## 4  0.000000e+00  6.809855e-01  6.496204e-01  6.496204e-01
## 5  0.000000e+00  5.279129e-01  5.098610e-01  5.098610e-01
## 6            NA  7.825193e-01  7.825193e-01  7.825193e-01
## 7  0.000000e+00  8.430220e-01  8.430220e-01  8.430220e-01
## 8  5.118670e-01  3.112761e-04  5.762511e-03  3.112761e-04
## 9  0.000000e+00  3.400968e-01  1.698984e-01  3.400968e-01
## 10 2.629121e-09  1.239308e-01  5.702836e-02  1.239308e-01
## 11 0.000000e+00  2.524795e-01  1.055422e-01  2.524795e-01
## 12 1.324644e-01  2.974100e-02  1.393880e-02  2.974100e-02
## 13 1.062207e-05 -1.315955e-01 -4.056279e-02 -1.315955e-01
## 14 9.101305e-04 -9.301358e-02 -3.498094e-02 -9.301358e-02
## 15 0.000000e+00  7.264842e+00  1.916721e-01  7.264842e+00
## 16           NA  3.876635e-01  3.876635e-01  3.876635e-01
## 17           NA  2.893139e-01  2.893139e-01  2.893139e-01
## 18 0.000000e+00  3.075509e-01  3.079076e-01  3.079076e-01
## 19 0.000000e+00  5.237545e-01  6.436442e-01  6.436442e-01
## 20 0.000000e+00  7.150089e-01  5.808735e-01  5.808735e-01
## 21 0.000000e+00  6.351541e-01  5.779933e-01  5.779933e-01
## 22 0.000000e+00  7.933726e-01  7.400418e-01  7.400418e-01
## 23 0.000000e+00  9.226092e-01  9.226092e-01  9.226092e-01
## 24           NA  3.427142e+02  1.000000e+00  3.427142e+02
## 25           NA  3.514386e-01  3.800115e-02  3.514386e-01
## 26           NA -8.641592e-01 -1.014416e-01 -8.641592e-01
## 27           NA -5.996190e-01 -7.748354e-02 -5.996190e-01
## 28           NA -1.137346e-01 -1.310861e-02 -1.137346e-01
## 29           NA  1.829517e-02  3.206149e-03  1.829517e-02
## 30           NA -3.808200e-01 -5.469765e-02 -3.808200e-01
## 31           NA  1.074974e-02  2.200894e-02  1.074974e-02
## 32           NA  2.495591e-01  1.000000e+00  2.495591e-01
## 33           NA  1.601448e-03  6.966499e-03  1.601448e-03
## 34           NA  1.828659e-03  8.756814e-03  1.828659e-03
## 35           NA  4.841410e-03  2.067833e-02  4.841410e-03
## 36           NA -1.962916e-03 -1.274759e-02 -1.962916e-03
## 37           NA  5.687496e-04  3.027257e-03  5.687496e-04
## 38           NA -4.143478e-04 -3.143734e-02 -4.143478e-04
## 39           NA  2.117499e-01  1.000000e+00  2.117499e-01
## 40           NA -6.869942e-02 -3.571425e-01 -6.869942e-02
## 41           NA  4.305092e-03  1.996187e-02  4.305092e-03
## 42           NA -5.878843e-07 -4.144704e-06 -5.878843e-07
## 43           NA  1.699807e-03  9.822065e-03  1.699807e-03
## 44           NA -1.290770e-03 -1.063175e-01 -1.290770e-03
## 45           NA  1.747430e-01  1.000000e+00  1.747430e-01
## 46           NA -4.430363e-03 -2.261360e-02 -4.430363e-03
## 47           NA  7.532168e-03  5.845657e-02  7.532168e-03
```

```
## 48           NA  1.751050e-02  1.113816e-01  1.751050e-02
## 49           NA  1.084568e-03  9.833867e-02  1.084568e-03
## 50           NA  2.196542e-01  1.000000e+00  2.196542e-01
## 51           NA -3.463694e-02 -2.397635e-01 -3.463694e-02
## 52           NA -5.555368e-02 -3.151795e-01 -5.555368e-02
## 53           NA -1.246387e-05 -1.007976e-03 -1.246387e-05
## 54           NA  9.501091e-02  1.000000e+00  9.501091e-02
## 55           NA -1.812802e-02 -1.563790e-01 -1.812802e-02
## 56           NA  9.243921e-04  1.136676e-01  9.243921e-04
## 57           NA  1.414393e-01  1.000000e+00  1.414393e-01
## 58           NA -1.005859e-03 -1.013723e-01 -1.005859e-03
## 59           NA  6.960898e-04  1.000000e+00  6.960898e-04
## 60 9.724432e-01 -6.916957e-03 -6.920967e-03 -6.920967e-03
## 61 0.000000e+00  1.945664e+00  2.156885e+00  2.156885e+00
## 62 2.296587e-07  9.384392e-01  8.458458e-01  8.458458e-01
## 63 1.526312e-09  9.819569e-01  9.367296e-01  9.367296e-01
## 64 0.000000e+00  1.993176e+00  1.925020e+00  1.925020e+00
## 65           NA  5.015694e+01  2.709350e+00  5.015694e+01
## 66           NA  5.209922e-01  1.042905e+00  5.209922e-01
## 67           NA  3.044242e-01  6.615574e-01  3.044242e-01
## 68           NA  2.256703e-01  5.398517e-01  2.256703e-01
## 69           NA  3.258001e-01  6.951548e-01  3.258001e-01
## 70           NA  1.063136e-01  3.449070e-01  1.063136e-01
## 71           NA  1.705148e-01  4.533952e-01  1.705148e-01
## 72           NA  9.089486e-01  3.445139e+01  9.089486e-01
## 73           NA  0.000000e+00  0.000000e+00  0.000000e+00
## 74           NA  0.000000e+00  0.000000e+00  0.000000e+00
## 75           NA  0.000000e+00  0.000000e+00  0.000000e+00
## 76           NA            NA            NA            NA
## 77           NA            NA            NA            NA
## 78           NA            NA            NA            NA
## 79           NA            NA            NA            NA
## 80           NA            NA            NA            NA
## 81           NA            NA            NA            NA
## 82           NA            NA            NA            NA
## 83           NA            NA            NA            NA
##
## [1] "ESS round:  9"
##         chisq        pvalue           cfi           tli         rmsea
##      3758.780         0.000         0.859         0.810         0.062
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.032      1614.891         0.000         0.861         0.812
##  rmsea.robust  srmr_bentler
##         0.061         0.032
##          lhs op       rhs       mi    epc sepc.lv sepc.all sepc.nox
## 96     Benev ~~     Unive 1360.166  0.213   1.067    1.067    1.067
## 80     Unive =~ iplylfr_r 1315.090  0.604   0.421    0.477    0.477
## 81    STrasc =~ iphlppl_r 1252.066 -3.016  -1.614   -1.639   -1.639
## 1      Benev =~ iphlppl_r 1252.064 -1.176  -0.963   -0.978   -0.978
## 86 iphlppl_r ~~ iplylfr_r 1252.062 -0.296  -0.296   -0.756   -0.756
## 17     Benev ~~     Benev 1252.062 -0.470  -0.298   -0.298   -0.298
## 82    STrasc =~ iplylfr_r 1252.043  1.896   1.015    1.151    1.151
## 16     Unive ~~     Unive  973.354 -0.256  -0.411   -0.411   -0.411
## 3      Unive =~ ipeqopt_r  973.351 -0.641  -0.447   -0.408   -0.408
```

```
## 92 iplylfr_r ~~  impenv_r  914.717  0.131   0.131    0.215    0.215
```




```
## lavaan 0.6-5 ended normally after 97 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         23
##
##   Number of observations                         26525
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             3758.780    1614.891
##   Degrees of freedom                           37          37
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 2.328
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                            26486.419   12297.479
##   Degrees of freedom                           50          50
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 2.154
##
## User Model versus Baseline Model:
```

```
##
##   Comparative Fit Index (CFI)                    0.859       0.871
##   Tucker-Lewis Index (TLI)                       0.810       0.826
##
##   Robust Comparative Fit Index (CFI)                         0.861
##   Robust Tucker-Lewis Index (TLI)                            0.812
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -311112.889 -311112.889
##   Loglikelihood unrestricted model (H1)    -309233.498 -309233.498
##
##   Akaike (AIC)                              622271.777  622271.777
##   Bayesian (BIC)                            622460.052  622460.052
##   Sample-size adjusted Bayesian (BIC)       622386.958  622386.958
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.062       0.040
##   90 Percent confidence interval - lower         0.060       0.039
##   90 Percent confidence interval - upper         0.063       0.041
##   P-value RMSEA <= 0.05                          0.000       1.000
##
##   Robust RMSEA                                               0.061
##   90 Percent confidence interval - lower                     0.059
##   90 Percent confidence interval - upper                     0.064
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                           0.032       0.032
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r         1.000                               0.819    0.832
##     iplylfr_r         0.629    0.012   53.090    0.000    0.515    0.584
##   Unive =~
##     ipeqopt_r         1.000                               0.697    0.636
##     ipudrst_r         0.959    0.017   57.404    0.000    0.669    0.645
##     impenv_r          0.723    0.014   50.530    0.000    0.504    0.509
##   STrasc =~
##     Unive             1.000                               0.767    0.767
##     Benev             1.282    0.033   39.147    0.000    0.838    0.838
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc ~
##     agea             -0.001    0.000   -2.415    0.016   -0.001   -0.020
```

```
##     gndrD             0.184    0.009   19.967    0.000    0.344    0.171
##     eisced2           0.048    0.010    4.597    0.000    0.090    0.042
##     eisced3           0.096    0.011    8.800    0.000    0.180    0.077
##     domicil2          0.001    0.010    0.074    0.941    0.001    0.001
##     domicil3          0.054    0.015    3.719    0.000    0.101    0.032
##     domicil4         -0.005    0.013   -0.400    0.689   -0.010   -0.004
##     HDI               5.349    0.193   27.746    0.000    9.997    0.247
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -1.555    0.212   -7.323    0.000   -1.555   -1.579
##    .iplylfr_r         1.082    0.140    7.744    0.000    1.082    1.227
##    .ipeqopt_r        -0.165    0.179   -0.923    0.356   -0.165   -0.151
##    .ipudrst_r        -0.120    0.164   -0.736    0.461   -0.120   -0.116
##    .impenv_r          1.397    0.128   10.883    0.000    1.397    1.410
##    .Benev             0.000                             0.000    0.000
##    .Unive             0.000                             0.000    0.000
##    .STrasc            0.000                             0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .Unive             0.200                             0.411    0.411
##    .Benev             0.200                             0.298    0.298
##    .iphlppl_r         0.299    0.011   26.335    0.000    0.299    0.308
##    .iplylfr_r         0.512    0.008   60.521    0.000    0.512    0.659
##    .ipeqopt_r         0.715    0.013   53.900    0.000    0.715    0.595
##    .ipudrst_r         0.627    0.012   53.436    0.000    0.627    0.584
##    .impenv_r          0.729    0.011   68.381    0.000    0.729    0.741
##    .STrasc            0.258    0.010   26.003    0.000    0.902    0.902
##
## R-Square:
##                    Estimate
##     Unive             0.589
##     Benev             0.702
##     iphlppl_r         0.692
##     iplylfr_r         0.341
##     ipeqopt_r         0.405
##     ipudrst_r         0.416
##     impenv_r          0.259
##     STrasc            0.098
##
## $FIT
##                          npar                          fmin
##                        23.000                         0.071
##                         chisq                            df
##                      3758.780                        37.000
##                        pvalue                  chisq.scaled
##                         0.000                      1614.891
##                    df.scaled                 pvalue.scaled
##                        37.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         2.328                     26486.419
##                   baseline.df              baseline.pvalue
##                        50.000                         0.000
```

```
##         baseline.chisq.scaled            baseline.df.scaled
##                     12297.479                        50.000
##       baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         2.154
##                           cfi                           tli
##                         0.859                         0.810
##                     cfi.scaled                    tli.scaled
##                         0.871                         0.826
##                    cfi.robust                    tli.robust
##                         0.861                         0.812
##                          logl             unrestricted.logl
##                   -311112.889                  -309233.498
##                           aic                           bic
##                    622271.777                    622460.052
##                        ntotal                          bic2
##                     26525.000                    622386.958
##                         rmsea                rmsea.ci.lower
##                         0.062                         0.060
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.063                         0.000
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.040                         0.039
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.041                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.061                         0.059
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.064                            NA
##                          srmr
##                         0.032
##
## $PE
##          lhs op       rhs exo           est           se           z
## 1      Benev =~ iphlppl_r   0  1.000000e+00 0.0000000000          NA
## 2      Benev =~ iplylfr_r   0  6.288398e-01 0.0118448265 53.08982374
## 3      Unive =~ ipeqopt_r   0  1.000000e+00 0.0000000000          NA
## 4      Unive =~ ipudrst_r   0  9.586873e-01 0.0167005634 57.40448893
## 5      Unive =~  impenv_r   0  7.232728e-01 0.0143136153 50.53040956
## 6     STrasc =~     Unive   0  1.000000e+00 0.0000000000          NA
## 7     STrasc =~     Benev   0  1.282179e+00 0.0327526886 39.14728655
## 8     STrasc  ~      agea   0 -5.718666e-04 0.0002367768 -2.41521366
## 9     STrasc  ~     gndrD   0  1.838383e-01 0.0092070020 19.96722313
## 10    STrasc  ~   eisced2   0  4.810490e-02 0.0104633949  4.59744706
## 11    STrasc  ~   eisced3   0  9.624658e-02 0.0109375590  8.79963995
## 12    STrasc  ~  domicil2   0  7.760814e-04 0.0104236032  0.07445423
## 13    STrasc  ~  domicil3   0  5.404865e-02 0.0145324812  3.71916202
## 14    STrasc  ~  domicil4   0 -5.125741e-03 0.0128018791 -0.40038974
## 15    STrasc  ~       HDI   0  5.349207e+00 0.1927943730 27.74566053
## 16     Unive ~~     Unive   0  2.000000e-01 0.0000000000          NA
## 17     Benev ~~     Benev   0  2.000000e-01 0.0000000000          NA
## 18 iphlppl_r ~~ iphlppl_r   0  2.988274e-01 0.0113473437 26.33456673
## 19 iplylfr_r ~~ iplylfr_r   0  5.124787e-01 0.0084678011 60.52087113
## 20 ipeqopt_r ~~ ipeqopt_r   0  7.150453e-01 0.0132661737 53.89988689
## 21 ipudrst_r ~~ ipudrst_r   0  6.267135e-01 0.0117283348 53.43584594
```

```
## 22  impenv_r ~~  impenv_r   0  7.285857e-01 0.0106547427 68.38135561
## 23    STrasc ~~    STrasc   0  2.583604e-01 0.0099356700 26.00332179
## 24      agea ~~      agea   1  3.512025e+02 0.0000000000          NA
## 25      agea ~~     gndrD   1  3.753336e-01 0.0000000000          NA
## 26      agea ~~   eisced2   1 -7.056186e-01 0.0000000000          NA
## 27      agea ~~   eisced3   1 -6.766041e-01 0.0000000000          NA
## 28      agea ~~  domicil2   1 -2.465282e-02 0.0000000000          NA
## 29      agea ~~  domicil3   1  1.011899e-01 0.0000000000          NA
## 30      agea ~~  domicil4   1 -3.280675e-01 0.0000000000          NA
## 31      agea ~~       HDI   1 -5.391844e-03 0.0000000000          NA
## 32     gndrD ~~     gndrD   1  2.488967e-01 0.0000000000          NA
## 33     gndrD ~~   eisced2   1  2.946780e-03 0.0000000000          NA
## 34     gndrD ~~   eisced3   1  1.490203e-03 0.0000000000          NA
## 35     gndrD ~~  domicil2   1  6.028328e-03 0.0000000000          NA
## 36     gndrD ~~  domicil3   1  3.920998e-04 0.0000000000          NA
## 37     gndrD ~~  domicil4   1  1.157523e-03 0.0000000000          NA
## 38     gndrD ~~       HDI   1 -5.210685e-04 0.0000000000          NA
## 39   eisced2 ~~   eisced2   1  2.161873e-01 0.0000000000          NA
## 40   eisced2 ~~   eisced3   1 -7.523850e-02 0.0000000000          NA
## 41   eisced2 ~~  domicil2   1  6.072798e-03 0.0000000000          NA
## 42   eisced2 ~~  domicil3   1 -1.758815e-03 0.0000000000          NA
## 43   eisced2 ~~  domicil4   1  3.915938e-03 0.0000000000          NA
## 44   eisced2 ~~       HDI   1 -1.109088e-03 0.0000000000          NA
## 45   eisced3 ~~   eisced3   1  1.813597e-01 0.0000000000          NA
## 46   eisced3 ~~  domicil2   1 -3.350745e-03 0.0000000000          NA
## 47   eisced3 ~~  domicil3   1  9.776459e-03 0.0000000000          NA
## 48   eisced3 ~~  domicil4   1  1.321128e-02 0.0000000000          NA
## 49   eisced3 ~~       HDI   1  9.247940e-04 0.0000000000          NA
## 50  domicil2 ~~  domicil2   1  2.168749e-01 0.0000000000          NA
## 51  domicil2 ~~  domicil3   1 -3.637234e-02 0.0000000000          NA
## 52  domicil2 ~~  domicil4   1 -5.640179e-02 0.0000000000          NA
## 53  domicil2 ~~       HDI   1 -2.078426e-04 0.0000000000          NA
## 54  domicil3 ~~  domicil3   1  1.012966e-01 0.0000000000          NA
## 55  domicil3 ~~  domicil4   1 -2.028695e-02 0.0000000000          NA
## 56  domicil3 ~~       HDI   1  8.963800e-04 0.0000000000          NA
## 57  domicil4 ~~  domicil4   1  1.459069e-01 0.0000000000          NA
## 58  domicil4 ~~       HDI   1 -1.068151e-03 0.0000000000          NA
## 59       HDI ~~       HDI   1  6.101580e-04 0.0000000000          NA
## 60 iphlppl_r ~1            0 -1.554777e+00 0.2123220931 -7.32272680
## 61 iplylfr_r ~1            0  1.081808e+00 0.1397051554  7.74350845
## 62 ipeqopt_r ~1            0 -1.652404e-01 0.1789450623 -0.92341391
## 63 ipudrst_r ~1            0 -1.204873e-01 0.1636150472 -0.73640718
## 64  impenv_r ~1            0  1.397466e+00 0.1284110762 10.88275608
## 65      agea ~1            1  5.093217e+01 0.0000000000          NA
## 66     gndrD ~1            1  5.332113e-01 0.0000000000          NA
## 67   eisced2 ~1            1  3.161185e-01 0.0000000000          NA
## 68   eisced3 ~1            1  2.380076e-01 0.0000000000          NA
## 69  domicil2 ~1            1  3.179977e-01 0.0000000000          NA
## 70  domicil3 ~1            1  1.143794e-01 0.0000000000          NA
## 71  domicil4 ~1            1  1.773657e-01 0.0000000000          NA
## 72       HDI ~1            1  9.125401e-01 0.0000000000          NA
## 73     Benev ~1            0  0.000000e+00 0.0000000000          NA
## 74     Unive ~1            0  0.000000e+00 0.0000000000          NA
## 75    STrasc ~1            0  0.000000e+00 0.0000000000          NA
```

```
## 76     Unive r2     Unive   0  5.887473e-01           NA          NA
## 77     Benev r2     Benev   0  7.018057e-01           NA          NA
## 78 iphlppl_r r2 iphlppl_r   0  6.917815e-01           NA          NA
## 79 iplylfr_r r2 iplylfr_r   0  3.410341e-01           NA          NA
## 80 ipeqopt_r r2 ipeqopt_r   0  4.048056e-01           NA          NA
## 81 ipudrst_r r2 ipudrst_r   0  4.162941e-01           NA          NA
## 82  impenv_r r2  impenv_r   0  2.588071e-01           NA          NA
## 83    STrasc r2    STrasc   0  9.764849e-02           NA          NA
##          pvalue        std.lv       std.all       std.nox
## 1            NA  8.189649e-01  0.8317340267  8.317340e-01
## 2  0.000000e+00  5.149977e-01  0.5839812072  5.839812e-01
## 3            NA  6.973658e-01  0.6362433805  6.362434e-01
## 4  0.000000e+00  6.685557e-01  0.6452085784  6.452086e-01
## 5  0.000000e+00  5.043857e-01  0.5087308664  5.087309e-01
## 6            NA  7.672987e-01  0.7672987307  7.672987e-01
## 7  0.000000e+00  8.377384e-01  0.8377384237  8.377384e-01
## 8  1.572598e-02 -1.068734e-03 -0.0200284982 -1.068734e-03
## 9  0.000000e+00  3.435665e-01  0.1714037531  3.435665e-01
## 10 4.276993e-06  8.990094e-02  0.0418002924  8.990094e-02
## 11 0.000000e+00  1.798706e-01  0.0766003268  1.798706e-01
## 12 9.406490e-01  1.450381e-03  0.0006754399  1.450381e-03
## 13 1.998848e-04  1.010089e-01  0.0321482424  1.010089e-01
## 14 6.888695e-01 -9.579251e-03 -0.0036590592 -9.579251e-03
## 15 0.000000e+00  9.996876e+00  0.2469366039  9.996876e+00
## 16           NA  4.112527e-01  0.4112526578  4.112527e-01
## 17           NA  2.981943e-01  0.2981943334  2.981943e-01
## 18 0.000000e+00  2.988274e-01  0.3082185088  3.082185e-01
## 19 0.000000e+00  5.124787e-01  0.6589659496  6.589659e-01
## 20 0.000000e+00  7.150453e-01  0.5951943608  5.951944e-01
## 21 0.000000e+00  6.267135e-01  0.5837058903  5.837059e-01
## 22 0.000000e+00  7.285857e-01  0.7411929056  7.411929e-01
## 23 0.000000e+00  9.023515e-01  0.9023515104  9.023515e-01
## 24           NA  3.512025e+02  1.0000000000  3.512025e+02
## 25           NA  3.753336e-01  0.0401447846  3.753336e-01
## 26           NA -7.056186e-01 -0.0809796973 -7.056186e-01
## 27           NA -6.766041e-01 -0.0847784376 -6.766041e-01
## 28           NA -2.465282e-02 -0.0028247707 -2.465282e-02
## 29           NA  1.011899e-01  0.0169652681  1.011899e-01
## 30           NA -3.280675e-01 -0.0458296442 -3.280675e-01
## 31           NA -5.391844e-03 -0.0116476235 -5.391844e-03
## 32           NA  2.488967e-01  1.0000000000  2.488967e-01
## 33           NA  2.946780e-03  0.0127034896  2.946780e-03
## 34           NA  1.490203e-03  0.0070139956  1.490203e-03
## 35           NA  6.028328e-03  0.0259467342  6.028328e-03
## 36           NA  3.920998e-04  0.0024693894  3.920998e-04
## 37           NA  1.157523e-03  0.0060741049  1.157523e-03
## 38           NA -5.210685e-04 -0.0422828331 -5.210685e-04
## 39           NA  2.161873e-01  1.0000000000  2.161873e-01
## 40           NA -7.523850e-02 -0.3799746527 -7.523850e-02
## 41           NA  6.072798e-03  0.0280458859  6.072798e-03
## 42           NA -1.758815e-03 -0.0118852281 -1.758815e-03
## 43           NA  3.915938e-03  0.0220486914  3.915938e-03
## 44           NA -1.109088e-03 -0.0965672158 -1.109088e-03
## 45           NA  1.813597e-01  1.0000000000  1.813597e-01
```

```
## 46           NA -3.350745e-03 -0.0168953169 -3.350745e-03
## 47           NA  9.776459e-03  0.0721296240  9.776459e-03
## 48           NA  1.321128e-02  0.0812150351  1.321128e-02
## 49           NA  9.247940e-04  0.0879130603  9.247940e-04
## 50           NA  2.168749e-01  1.0000000000  2.168749e-01
## 51           NA -3.637234e-02 -0.2453969333 -3.637234e-02
## 52           NA -5.640179e-02 -0.3170665299 -5.640179e-02
## 53           NA -2.078426e-04 -0.0180679497 -2.078426e-04
## 54           NA  1.012966e-01  1.0000000000  1.012966e-01
## 55           NA -2.028695e-02 -0.1668712195 -2.028695e-02
## 56           NA  8.963800e-04  0.1140180231  8.963800e-04
## 57           NA  1.459069e-01  1.0000000000  1.459069e-01
## 58           NA -1.068151e-03 -0.1132071138 -1.068151e-03
## 59           NA  6.101580e-04  1.0000000000  6.101580e-04
## 60 2.429168e-13 -1.554777e+00 -1.5790183711 -1.579018e+00
## 61 9.769963e-15  1.081808e+00  1.2267153162  1.226715e+00
## 62 3.557915e-01 -1.652404e-01 -0.1507574456 -1.507574e-01
## 63 4.614829e-01 -1.204873e-01 -0.1162796654 -1.162797e-01
## 64 0.000000e+00  1.397466e+00  1.4095051653  1.409505e+00
## 65           NA  5.093217e+01  2.7177744054  5.093217e+01
## 66           NA  5.332113e-01  1.0687836358  5.332113e-01
## 67           NA  3.161185e-01  0.6798840274  3.161185e-01
## 68           NA  2.380076e-01  0.5588823466  2.380076e-01
## 69           NA  3.179977e-01  0.6828406186  3.179977e-01
## 70           NA  1.143794e-01  0.3593770897  1.143794e-01
## 71           NA  1.773657e-01  0.4643352516  1.773657e-01
## 72           NA  9.125401e-01 36.9428816993  9.125401e-01
## 73           NA  0.000000e+00  0.0000000000  0.000000e+00
## 74           NA  0.000000e+00  0.0000000000  0.000000e+00
## 75           NA  0.000000e+00  0.0000000000  0.000000e+00
## 76           NA            NA            NA            NA
## 77           NA            NA            NA            NA
## 78           NA            NA            NA            NA
## 79           NA            NA            NA            NA
## 80           NA            NA            NA            NA
## 81           NA            NA            NA            NA
## 82           NA            NA            NA            NA
## 83           NA            NA            NA            NA
```

```
#
# sum1 <-full_join(parameterEstimates(survey.fit3r8),
#                  parameterEstimates(survey.fit3r9),
#                  by=c("lhs", "op", "rhs"))
# sum2 <-full_join(parameterEstimates(survey.scalfit3r8),
#                  parameterEstimates(survey.scalfit3r9),
#                  by=c("lhs", "op", "rhs", "block", "group"))
# sum2$block <- as.character(sum2$block)
#
# sum3 <-full_join(parameterEstimates(survey.semfit8),
#                  parameterEstimates(survey.semfit9),
#                  by=c("lhs", "op", "rhs"))
# sum4 <-full_join(parameterEstimates(survey.semscalfit3r8),
#                   parameterEstimates(survey.semscalfit3r9),
#                   by=c("lhs", "op", "rhs", "block", "group"))
```

```
# sum2 <- sum2 %>%  mutate(est.x = ifelse(pvalue.x > 0.05, NA, round(est.x,3)),
#                          est.y = ifelse(pvalue.y > 0.05, NA, round(est.y,3)))
#
# val_lab(sum2$block) <- cntrylabels
# sum2$block <- as.character(sum2$block)
#
# sum4 <- sum4 %>%  mutate(est.x = ifelse(pvalue.x > 0.05, NA, round(est.x,3)),
#                          est.x = ifelse(rhs == "agea", est.x*10, est.x),
#                          est.y = ifelse(pvalue.y > 0.05, NA, round(est.y,3)),
#                          est.y = ifelse(rhs == "agea", est.y*10, est.y),
#                          rhs1 = ifelse(rhs == "gndrD", "Gender (Female / Male)",
#                                 ifelse(rhs == "agea", "Age (10 years increment)",
#                                 ifelse(rhs == "eisced2", "Highest level of education, (Upper secondar
#                                 ifelse(rhs == "eisced3", "Highest level of education, (Bachelor or hi
#                                 ifelse(rhs == "domicil2", "Domicile (Town or small city/Countryside)"
#                                 ifelse(rhs == "domicil3", "Domicile (Suburbs or outskirts of big city
#                                 ifelse(rhs == "domicil4", "Domicile (A big city/Countryside)",
#                                 ifelse(rhs == "HDI_i", "Human Development Index", rhs)))))))))
# val_lab(sum4$block) <- cntrylabels
# sum4$block <- as.character(sum4$block)
#
# dir <- "G:/My Drive/Master in Statistics/Structural equations/Paper/"
# write.table(sum1,paste0(dir,"Parametersfit.csv"), sep = ",", row.names = FALSE)
# write.table(sum2,paste0(dir,"ParametersScalfit.csv"), sep = ",", row.names = FALSE)
#
# write.table(sum3,paste0(dir,"ParametersSemfit.csv"), sep = ",", row.names = FALSE)
# write.table(sum4,paste0(dir,"ParametersSemScalfit.csv"), sep = ",", row.names = FALSE)
```

Ordered variables

The model with categorical variables is undefined, only 5 variables and too many parameters to estimate.

```
for (r in c(8,9)) {
  ds_filtrada <- ds_filtradaAll %>% filter(essround == r)
  survey.design <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada)

  lavaan.Ordfit3 <- lavaan(model13, data=ds_filtrada, estimator = "WLSMV",
                       cluster = "cntry",
                      ordered = c("iphlppl_r", "iplylfr_r", "ipeqopt_r", "ipudrst_r", "impenv_r"))
  survey.Ordfit3 <- lavaan.Ordfit3
  #survey.Ordfit3 <- lavaan.survey(lavaan.fit=lavaan.Ordfit3,survey.design=survey.design)
  assign(paste0("survey.Ordfit3r",r),survey.Ordfit3)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.Ordfit3, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
                                      "chisq.scaled","pvalue.scaled","cfi.robust","tli.robust","rmsea.r
  #print(modindices(survey.Ordfit3,sort=T)[1:10,])

  # cov <- round(cov(ds_filtrada[,items], use="complete.obs"),3)
  # print(lowerMat(cov, digits=3))
  # print(round(colMeans(ds_filtrada[,items], na.rm = TRUE),3))
  # print(fitted(survey.Ordfit3))
  # invisible(semPaths(survey.Ordfit3,"model","stand", style = "lisrel", rainbowStart = 0.8))
  #
```

```
  print(summary(survey.Ordfit3, standardized=T, rsquare=T, fit.measures=T))
}

for (r in c(8,9)) {
  ds_filtrada <- ds_filtradaAll %>% filter(essround == r)
  survey.design <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada)

  lavaan.Ordfit3 <- lavaan(model13, data=ds_filtrada, estimator = "WLSMV",
                           ordered = c("iphlppl_r", "iplylfr_r", "ipeqopt_r", "ipudrst_r", "impenv_r"))
  survey.Ordfit3 <- lavaan.Ordfit3
  assign(paste0("survey.Ordfit3r",r),survey.Ordfit3)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.Ordfit3, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
                                      "chisq.scaled","pvalue.scaled","cfi.robust","tli.robust","rmsea.r
  #print(modindices(survey.Ordfit3,sort=T)[1:10,])

  # cov <- round(cov(ds_filtrada[,items], use="complete.obs"),3)
  # print(lowerMat(cov, digits=3))
  # print(round(colMeans(ds_filtrada[,items], na.rm = TRUE),3))
  # print(fitted(survey.Ordfit3))
  # invisible(semPaths(survey.Ordfit3,"model","stand", style = "lisrel", rainbowStart = 0.8))
  #
  print(summary(survey.Ordfit3, standardized=T, rsquare=T, fit.measures=T))
}
```

Multilevel CFA

```
mmodel31<-'
level: 1
Benev_w =~ iphlppl_r + iplylfr_r
Unive_w =~ ipeqopt_r + ipudrst_r + impenv_r
Unive_w ~~ Benev_w
Unive_w ~~ 0.3*Unive_w
Benev_w ~~ 0.4*Benev_w
level: 2
Benev_b =~ iphlppl_r + iplylfr_r
Unive_b =~ ipeqopt_r + ipudrst_r
Unive_b ~~ Benev_b
Unive_b ~~ 0.03*Unive_b
Benev_b ~~ 0.04*Benev_b
'


#+ impenv_r
for (r in c(8,9)) {
  ds_filtrada <- ds_filtradaAll %>% filter(essround == r)

  lavaan.mfit3 <- lavaan(mmodel31, data=ds_filtrada, auto.fix.first=TRUE, sampling.weights = "dweight",
                         auto.var=TRUE, int.ov.free=TRUE, auto.cov.lv.x=TRUE,
                         cluster = "cntry", meanstructure=TRUE)
  survey.mfit3 <- lavaan.mfit3
  assign(paste0("survey.mfit3r",r),survey.mfit3)
```

```
  print(paste("ESS round: ", r))

  print(fitMeasures(survey.mfit3, c("chisq","pvalue","cfi", "tli","rmsea", "srmr")))
  print(modindices(survey.mfit3,sort=T)[1:10,])

  cov <- round(cov(ds_filtrada[,items], use="complete.obs"),3)
  print(lowerMat(cov, digits=3))
  print(round(colMeans(ds_filtrada[,items], na.rm = TRUE),3))
  print(fitted(survey.mfit3))

  print(summary(survey.mfit3, standardized=T, rsquare=T, fit.measures=T))

 invisible(semPaths(paste0("C:\\Users\\pamel\\Documents\\ESS\\MPLUS\\mcfa",r,".out"), "model", "std", n
           style = "lisrel",  edge.label.cex = 0.8, intercepts = FALSE, layout = "tree",
                     groups = "latent", pastel = TRUE, exoCov = FALSE, optimizeLatRes = TRUE, ask = FALS

}
```

```
## [1] "ESS round:  8"
##   chisq  pvalue     cfi     tli   rmsea    srmr
## 302.126   0.000   0.987   0.977   0.034   0.077
##          lhs op       rhs block group level      mi    epc sepc.lv
## 49 iplylfr_r ~~  impenv_r     1     1     1 164.703  0.062   0.062
## 52 ipudrst_r ~~  impenv_r     1     1     1 147.447 -0.081  -0.081
## 40   Benev_w =~  impenv_r     1     1     1 107.544  0.787   0.498
## 50 ipeqopt_r ~~ ipudrst_r     1     1     1 104.797  0.060   0.060
## 47 iplylfr_r ~~ ipeqopt_r     1     1     1  82.852 -0.043  -0.043
## 45 iphlppl_r ~~ ipudrst_r     1     1     1  40.620  0.034   0.034
## 48 iplylfr_r ~~ ipudrst_r     1     1     1  34.843 -0.029  -0.029
## 46 iphlppl_r ~~  impenv_r     1     1     1  10.466 -0.017  -0.017
## 41   Unive_w =~ iphlppl_r     1     1     1   9.554  0.036   0.020
## 1    Benev_w =~ iphlppl_r     1     1     1   9.535  0.031   0.020
##    sepc.all sepc.nox
## 49    0.111    0.111
## 52   -0.116   -0.116
## 40    0.486    0.486
## 50    0.084    0.084
## 47   -0.073   -0.073
## 45    0.061    0.061
## 48   -0.054   -0.054
## 46   -0.029   -0.029
## 41    0.021    0.021
## 1     0.021    0.021
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.944
## iplylfr_r 0.401  0.791
## ipeqopt_r 0.354  0.276  1.124
## ipudrst_r 0.409  0.329  0.398  1.069
## impenv_r  0.332  0.318  0.321  0.318  1.052
##  [1] 0.401 0.354 0.409 0.332 0.276 0.329 0.318 0.398 0.321 0.318
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.813     5.062     4.806     4.645     4.827
## $within
```

```
## $within$cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.873
## iplylfr_r 0.352  0.744
## ipeqopt_r 0.310  0.273  1.072
## ipudrst_r 0.340  0.299  0.329  1.022
## impenv_r  0.320  0.282  0.310  0.340  1.048
##
## $within$mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##      0.00      0.00      0.00      0.00      4.83
##
##
## $cntry
## $cntry$cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_
## iphlppl_r 0.052
## iplylfr_r 0.034  0.044
## ipeqopt_r 0.039  0.033  0.052
## ipudrst_r 0.041  0.035  0.032  0.038
##
## $cntry$mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r
##     4.832     5.073     4.826     4.659
##
##
## lavaan 0.6-5 ended normally after 105 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         21
##
##                                                   Used       Total
##   Number of observations                         27533       28080
##   Number of clusters [cntry]                        14
##   Sampling weights variable                     dweight
##
## Model Test User Model:
##                                                Standard      Robust
##   Test Statistic                                302.126      62.270
##   Degrees of freedom                                  9           9
##   P-value (Chi-square)                            0.000       0.000
##   Scaling correction factor                                   4.852
##     for the Yuan-Bentler correction (Mplus variant)
##
## Model Test Baseline Model:
##
##   Test statistic                             22877.617    4733.238
##   Degrees of freedom                                 16          16
##   P-value                                         0.000       0.000
##   Scaling correction factor                                   4.833
##
## User Model versus Baseline Model:
##
```

```
##   Comparative Fit Index (CFI)                    0.987       0.989
##   Tucker-Lewis Index (TLI)                       0.977       0.980
##
##   Robust Comparative Fit Index (CFI)                         0.989
##   Robust Tucker-Lewis Index (TLI)                            0.980
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -180486.917 -180486.917
##   Scaling correction factor                                15.074
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)    -180335.854 -180335.854
##   Scaling correction factor                                12.007
##       for the MLR correction
##
##   Akaike (AIC)                              361015.833  361015.833
##   Bayesian (BIC)                            361188.519  361188.519
##   Sample-size adjusted Bayesian (BIC)       361121.782  361121.782
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.034       0.015
##   90 Percent confidence interval - lower         0.031       0.013
##   90 Percent confidence interval - upper         0.038       0.016
##   P-value RMSEA <= 0.05                          1.000       1.000
##
##   Robust RMSEA                                               0.032
##   90 Percent confidence interval - lower                     0.025
##   90 Percent confidence interval - upper                     0.040
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)                0.018       0.018
##   SRMR (between covariance matrix)               0.059       0.059
##
## Parameter Estimates:
##
##   Information                                 Observed
##   Observed information based on                Hessian
##   Standard errors                    Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.632    0.677
##     iplylfr_r         0.881    0.048   18.338    0.000    0.557    0.646
##   Unive_w =~
##     ipeqopt_r         1.000                               0.548    0.529
##     ipudrst_r         1.097    0.036   30.526    0.000    0.601    0.594
##     impenv_r          1.032    0.052   19.788    0.000    0.565    0.552
##
```

```
## Covariances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w ~~
##     Unive_w          0.310    0.010   32.550    0.000    0.895    0.895
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        0.000                               0.000    0.000
##    .iplylfr_r        0.000                               0.000    0.000
##    .ipeqopt_r        0.000                               0.000    0.000
##    .ipudrst_r        0.000                               0.000    0.000
##    .impenv_r         4.830    0.043  111.744    0.000    4.830    4.717
##     Benev_w          0.000                               0.000    0.000
##     Unive_w          0.000                               0.000    0.000
##
## Variances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##     Unive_w          0.300                               1.000    1.000
##     Benev_w          0.400                               1.000    1.000
##    .iphlppl_r        0.473    0.034   14.119    0.000    0.473    0.542
##    .iplylfr_r        0.434    0.023   18.989    0.000    0.434    0.583
##    .ipeqopt_r        0.772    0.043   17.997    0.000    0.772    0.720
##    .ipudrst_r        0.661    0.026   25.074    0.000    0.661    0.647
##    .impenv_r         0.729    0.062   11.743    0.000    0.729    0.695
##
## R-Square:
##                   Estimate
##     iphlppl_r        0.458
##     iplylfr_r        0.417
##     ipeqopt_r        0.280
##     ipudrst_r        0.353
##     impenv_r         0.305
##
##
## Level 2 [cntry]:
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r        1.000                               0.200    0.880
##     iplylfr_r        0.854    0.138    6.184    0.000    0.171    0.819
##   Unive_b =~
##     ipeqopt_r        1.000                               0.173    0.759
##     ipudrst_r        1.066    0.180    5.938    0.000    0.185    0.949
##
## Covariances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b ~~
##     Unive_b          0.039    0.002   16.799    0.000    1.116    1.116
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        4.832    0.063   76.182    0.000    4.832   21.263
##    .iplylfr_r        5.073    0.055   91.918    0.000    5.073   24.321
```

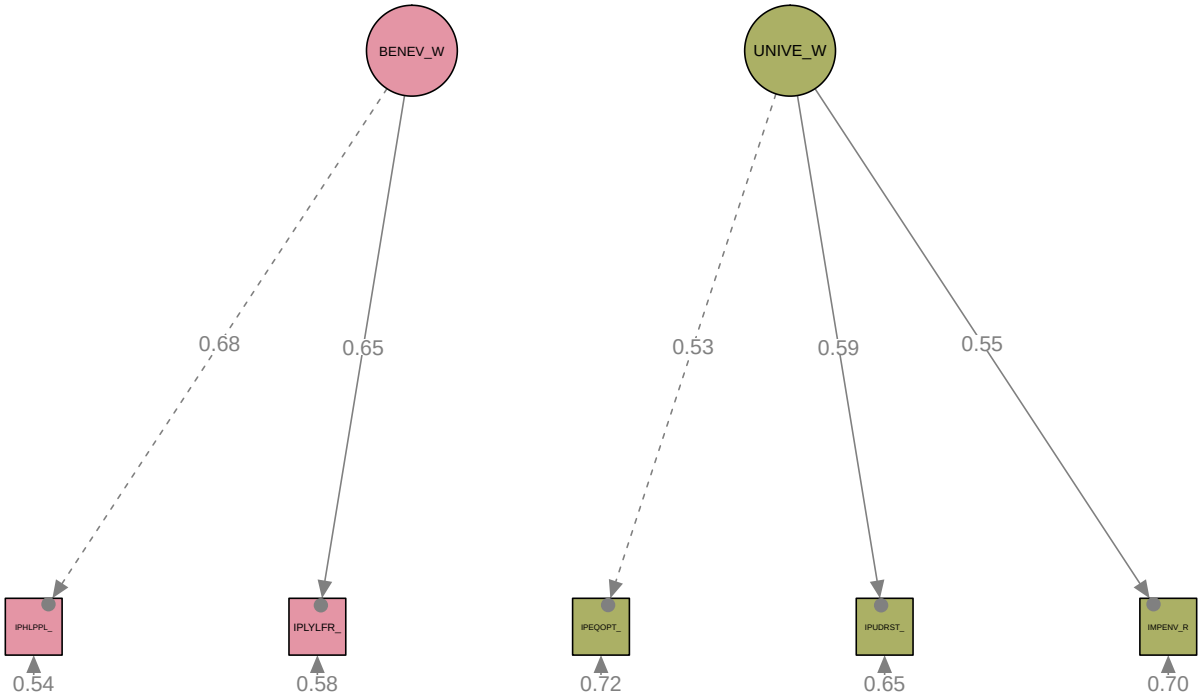
```
##    .ipeqopt_r         4.826    0.058   82.614    0.000    4.826   21.138
##    .ipudrst_r         4.659    0.056   83.642    0.000    4.659   23.936
##     Benev_b           0.000                               0.000    0.000
##     Unive_b           0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##     Unive_b           0.030                               1.000    1.000
##     Benev_b           0.040                               1.000    1.000
##    .iphlppl_r         0.012    0.004    3.140    0.002    0.012    0.226
##    .iplylfr_r         0.014    0.007    2.196    0.028    0.014    0.330
##    .ipeqopt_r         0.022    0.009    2.363    0.018    0.022    0.424
##    .ipudrst_r         0.004    0.004    0.922    0.357    0.004    0.100
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.774
##     iplylfr_r         0.670
##     ipeqopt_r         0.576
##     ipudrst_r         0.900
##
## $FIT
##                          npar                          fmin
##                        21.000                         1.961
##                         chisq                            df
##                       302.126                         9.000
##                        pvalue                  chisq.scaled
##                         0.000                        62.270
##                     df.scaled                 pvalue.scaled
##                         9.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         4.852                      22877.617
##                   baseline.df                baseline.pvalue
##                        16.000                         0.000
##         baseline.chisq.scaled             baseline.df.scaled
##                      4733.238                        16.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         4.833
##                           cfi                           tli
##                         0.987                         0.977
##                    cfi.scaled                    tli.scaled
##                         0.989                         0.980
##                    cfi.robust                    tli.robust
##                         0.989                         0.980
##                          logl              unrestricted.logl
##                    -180486.917                   -180335.854
##                           aic                           bic
##                    361015.833                    361188.519
##                        ntotal                          bic2
##                     27533.000                    361121.782
##              scaling.factor.h1             scaling.factor.h0
##                        12.007                        15.074
##                         rmsea                rmsea.ci.lower
##                         0.034                         0.031
```

```
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.038                         1.000
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.015                         0.013
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.016                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.032                         0.025
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.040                           NA
##                          srmr                  srmr_within
##                         0.077                         0.018
##                 srmr_between
##                         0.059
##
## $PE
##          lhs op       rhs block level exo         est          se
## 1    Benev_w =~ iphlppl_r     1     1   0 1.000000000 0.000000000
## 2    Benev_w =~ iplylfr_r     1     1   0 0.880662110 0.048023239
## 3    Unive_w =~ ipeqopt_r     1     1   0 1.000000000 0.000000000
## 4    Unive_w =~ ipudrst_r     1     1   0 1.096615048 0.035923583
## 5    Unive_w =~  impenv_r     1     1   0 1.032032740 0.052154831
## 6    Benev_w ~~   Unive_w     1     1   0 0.309910904 0.009521019
## 7    Unive_w ~~   Unive_w     1     1   0 0.300000000 0.000000000
## 8    Benev_w ~~   Benev_w     1     1   0 0.400000000 0.000000000
## 9  iphlppl_r ~~ iphlppl_r     1     1   0 0.473045754 0.033503931
## 10 iplylfr_r ~~ iplylfr_r     1     1   0 0.434203876 0.022865805
## 11 ipeqopt_r ~~ ipeqopt_r     1     1   0 0.772200301 0.042908046
## 12 ipudrst_r ~~ ipudrst_r     1     1   0 0.660762747 0.026352885
## 13  impenv_r ~~  impenv_r     1     1   0 0.728961566 0.062076669
## 14 iphlppl_r ~1               1     1   0 0.000000000 0.000000000
## 15 iplylfr_r ~1               1     1   0 0.000000000 0.000000000
## 16 ipeqopt_r ~1               1     1   0 0.000000000 0.000000000
## 17 ipudrst_r ~1               1     1   0 0.000000000 0.000000000
## 18  impenv_r ~1               1     1   0 4.830421618 0.043227663
## 19   Benev_w ~1               1     1   0 0.000000000 0.000000000
## 20   Unive_w ~1               1     1   0 0.000000000 0.000000000
## 21   Benev_b =~ iphlppl_r     2     2   0 1.000000000 0.000000000
## 22   Benev_b =~ iplylfr_r     2     2   0 0.853861565 0.138068908
## 23   Unive_b =~ ipeqopt_r     2     2   0 1.000000000 0.000000000
## 24   Unive_b =~ ipudrst_r     2     2   0 1.066069140 0.179532779
## 25   Benev_b ~~   Unive_b     2     2   0 0.038644002 0.002300400
## 26   Unive_b ~~   Unive_b     2     2   0 0.030000000 0.000000000
## 27   Benev_b ~~   Benev_b     2     2   0 0.040000000 0.000000000
## 28 iphlppl_r ~~ iphlppl_r     2     2   0 0.011647583 0.003709926
## 29 iplylfr_r ~~ iplylfr_r     2     2   0 0.014342563 0.006530918
## 30 ipeqopt_r ~~ ipeqopt_r     2     2   0 0.022127304 0.009365314
## 31 ipudrst_r ~~ ipudrst_r     2     2   0 0.003786523 0.004106944
## 32 iphlppl_r ~1               2     2   0 4.832242342 0.063430248
## 33 iplylfr_r ~1               2     2   0 5.072877440 0.055188882
## 34 ipeqopt_r ~1               2     2   0 4.826099553 0.058417168
## 35 ipudrst_r ~1               2     2   0 4.658740581 0.055698758
## 36   Benev_b ~1               2     2   0 0.000000000 0.000000000
## 37   Unive_b ~1               2     2   0 0.000000000 0.000000000
```

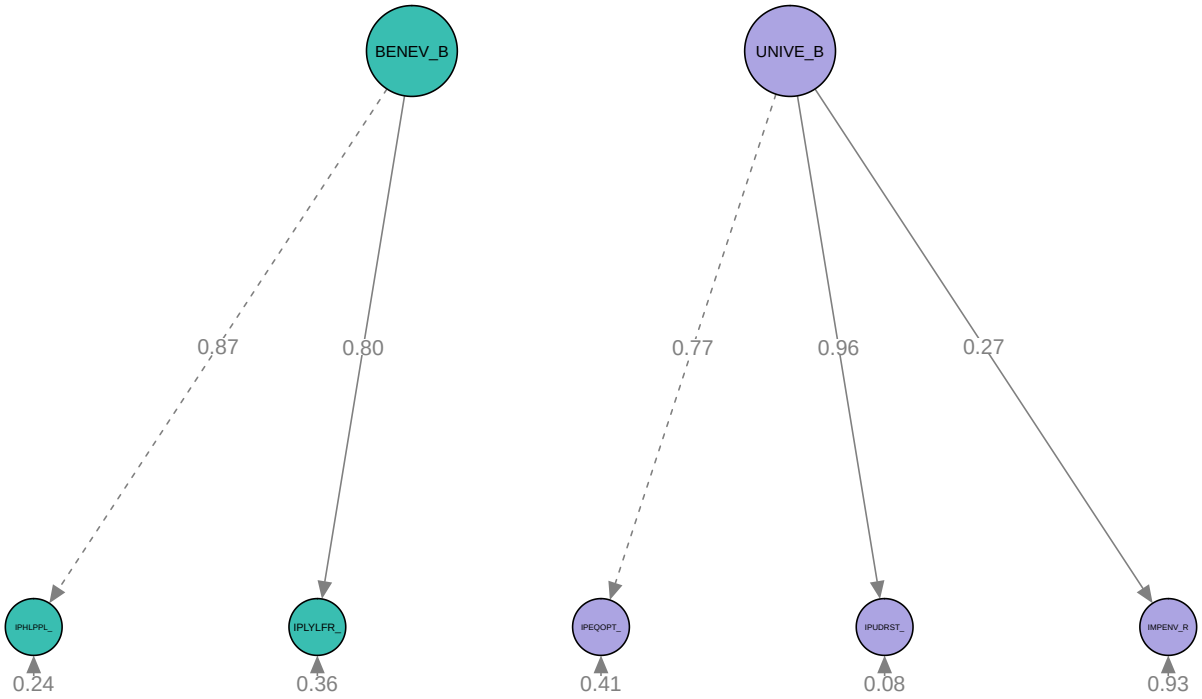
```
## 38 iphlppl_r r2 iphlppl_r     1     1   0 0.458166136          NA
## 39 iplylfr_r r2 iplylfr_r     1     1   0 0.416729883          NA
## 40 ipeqopt_r r2 ipeqopt_r     1     1   0 0.279798467          NA
## 41 ipudrst_r r2 ipudrst_r     1     1   0 0.353164980          NA
## 42  impenv_r r2  impenv_r     1     1   0 0.304750418          NA
## 43 iphlppl_r r2 iphlppl_r     2     2   0 0.774479618          NA
## 44 iplylfr_r r2 iplylfr_r     2     2   0 0.670329454          NA
## 45 ipeqopt_r r2 ipeqopt_r     2     2   0 0.575514127          NA
## 46 ipudrst_r r2 ipudrst_r     2     2   0 0.900043279          NA
##              z       pvalue      std.lv     std.all     std.nox
## 1           NA           NA 0.632455532  0.67687971  0.67687971
## 2   18.3382489 0.000000e+00 0.556979623  0.64554619  0.64554619
## 3           NA           NA 0.547722558  0.52895980  0.52895980
## 4   30.5263270 0.000000e+00 0.600640799  0.59427685  0.59427685
## 5   19.7878647 0.000000e+00 0.565267612  0.55204204  0.55204204
## 6   32.5501813 0.000000e+00 0.894635721  0.89463572  0.89463572
## 7           NA           NA 1.000000000  1.00000000  1.00000000
## 8           NA           NA 1.000000000  1.00000000  1.00000000
## 9   14.1191120 0.000000e+00 0.473045754  0.54183386  0.54183386
## 10  18.9892233 0.000000e+00 0.434203876  0.58327012  0.58327012
## 11  17.9966317 0.000000e+00 0.772200301  0.72020153  0.72020153
## 12  25.0736402 0.000000e+00 0.660762747  0.64683502  0.64683502
## 13  11.7429234 0.000000e+00 0.728961566  0.69524958  0.69524958
## 14          NA           NA 0.000000000  0.00000000  0.00000000
## 15          NA           NA 0.000000000  0.00000000  0.00000000
## 16          NA           NA 0.000000000  0.00000000  0.00000000
## 17          NA           NA 0.000000000  0.00000000  0.00000000
## 18 111.7437608 0.000000e+00 4.830421618  4.71740423  4.71740423
## 19          NA           NA 0.000000000  0.00000000  0.00000000
## 20          NA           NA 0.000000000  0.00000000  0.00000000
## 21          NA           NA 0.200000000  0.88004524  0.88004524
## 22   6.1843146 6.237286e-10 0.170772313  0.81873650  0.81873650
## 23          NA           NA 0.173205081  0.75862647  0.75862647
## 24   5.9380195 2.884857e-09 0.184648592  0.94870611  0.94870611
## 25  16.7988209 0.000000e+00 1.115556242  1.11555624  1.11555624
## 26          NA           NA 1.000000000  1.00000000  1.00000000
## 27          NA           NA 1.000000000  1.00000000  1.00000000
## 28   3.1395729 1.691943e-03 0.011647583  0.22552038  0.22552038
## 29   2.1961022 2.808463e-02 0.014342563  0.32967055  0.32967055
## 30   2.3626869 1.814299e-02 0.022127304  0.42448587  0.42448587
## 31   0.9219807 3.565387e-01 0.003786523  0.09995672  0.09995672
## 32  76.1819875 0.000000e+00 4.832242342 21.26295928 21.26295928
## 33  91.9184676 0.000000e+00 5.072877440 24.32097943 24.32097943
## 34  82.6144048 0.000000e+00 4.826099553 21.13798782 21.13798782
## 35  83.6417317 0.000000e+00 4.658740581 23.93614599 23.93614599
## 36          NA           NA 0.000000000  0.00000000  0.00000000
## 37          NA           NA 0.000000000  0.00000000  0.00000000
## 38          NA           NA          NA          NA          NA
## 39          NA           NA          NA          NA          NA
## 40          NA           NA          NA          NA          NA
## 41          NA           NA          NA          NA          NA
## 42          NA           NA          NA          NA          NA
## 43          NA           NA          NA          NA          NA
## 44          NA           NA          NA          NA          NA
```

```
## 45          NA           NA           NA           NA           NA
## 46          NA           NA           NA           NA           NA
##
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mcfa8.out
```

Within



Between




```
## [1] "ESS round:  9"
##   chisq  pvalue     cfi     tli   rmsea    srmr
## 343.920   0.000   0.984   0.972   0.037   0.053
##          lhs op       rhs block group level      mi    epc sepc.lv
## 49 iplylfr_r ~~  impenv_r     1     1     1 288.795  0.081   0.081
## 40   Benev_w =~  impenv_r     1     1     1 157.709  1.131   0.716
## 47 iplylfr_r ~~ ipeqopt_r     1     1     1  94.255 -0.045  -0.045
## 50 ipeqopt_r ~~ ipudrst_r     1     1     1  82.317  0.053   0.053
## 52 ipudrst_r ~~  impenv_r     1     1     1  81.749 -0.058  -0.058
## 48 iplylfr_r ~~ ipudrst_r     1     1     1  36.650 -0.029  -0.029
## 46 iphlppl_r ~~  impenv_r     1     1     1  29.750 -0.028  -0.028
## 38   Benev_w =~ ipeqopt_r     1     1     1  29.312 -0.061  -0.038
## 45 iphlppl_r ~~ ipudrst_r     1     1     1  27.002  0.028   0.028
## 7    Unive_w ~~   Unive_w     1     1     1  18.908 -0.034  -1.000
##    sepc.all sepc.nox
## 49    0.150    0.150
## 40    0.723    0.723
## 47   -0.079   -0.079
## 50    0.074    0.074
## 52   -0.086   -0.086
## 48   -0.055   -0.055
## 46   -0.051   -0.051
## 38   -0.037   -0.037
## 45    0.050    0.050
## 7    -1.000   -1.000
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
```

```
## iphlppl_r 0.917
## iplylfr_r 0.373  0.763
## ipeqopt_r 0.337  0.257  1.100
## ipudrst_r 0.389  0.306  0.366  1.044
## impenv_r  0.315  0.321  0.280  0.305  0.974
##  [1] 0.373 0.337 0.389 0.315 0.257 0.306 0.321 0.366 0.280 0.305
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     4.847     5.099     4.821     4.667     4.996
## $within
## $within$cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_ impnv_
## iphlppl_r 0.864
## iplylfr_r 0.347  0.729
## ipeqopt_r 0.316  0.274  1.073
## ipudrst_r 0.336  0.291  0.319  1.003
## impenv_r  0.320  0.278  0.304  0.323  0.979
##
## $within$mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r  impenv_r
##     0.000     0.000     0.000     0.000     5.002
##
##
## $cntry
## $cntry$cov
##           iphlp_ iplyl_ ipqpt_ ipdrs_
## iphlppl_r 0.050
## iplylfr_r 0.024  0.033
## ipeqopt_r 0.040  0.024  0.054
## ipudrst_r 0.037  0.022  0.028  0.032
##
## $cntry$mean
## iphlppl_r iplylfr_r ipeqopt_r ipudrst_r
##     4.864     5.110     4.837     4.685
##
##
## lavaan 0.6-5 ended normally after 110 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         21
##
##                                                   Used       Total
##   Number of observations                         26814       27540
##   Number of clusters [cntry]                        14
##   Sampling weights variable                     dweight
##
## Model Test User Model:
##                                                Standard      Robust
##   Test Statistic                                343.920      99.503
##   Degrees of freedom                                  9           9
##   P-value (Chi-square)                            0.000       0.000
##   Scaling correction factor                                   3.456
##     for the Yuan-Bentler correction (Mplus variant)
##
```

```
## Model Test Baseline Model:
##
##   Test statistic                                21178.786    3377.792
##   Degrees of freedom                               16          16
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 6.270
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                    0.984       0.973
##   Tucker-Lewis Index (TLI)                       0.972       0.952
##
##   Robust Comparative Fit Index (CFI)                         0.985
##   Robust Tucker-Lewis Index (TLI)                            0.974
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -173636.322 -173636.322
##   Scaling correction factor                                 13.957
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)    -173464.362 -173464.362
##   Scaling correction factor                                 10.807
##       for the MLR correction
##
##   Akaike (AIC)                              347314.645  347314.645
##   Bayesian (BIC)                            347486.775  347486.775
##   Sample-size adjusted Bayesian (BIC)       347420.037  347420.037
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.037       0.019
##   90 Percent confidence interval - lower         0.034       0.018
##   90 Percent confidence interval - upper         0.041       0.021
##   P-value RMSEA <= 0.05                          1.000       1.000
##
##   Robust RMSEA                                               0.036
##   90 Percent confidence interval - lower                     0.030
##   90 Percent confidence interval - upper                     0.043
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)                0.021       0.021
##   SRMR (between covariance matrix)               0.032       0.032
##
## Parameter Estimates:
##
##   Information                                 Observed
##   Observed information based on                Hessian
##   Standard errors                    Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
```

```
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.632    0.680
##     iplylfr_r         0.868    0.050   17.318    0.000    0.549    0.643
##   Unive_w =~
##     ipeqopt_r         1.000                               0.548    0.529
##     ipudrst_r         1.063    0.033   32.606    0.000    0.582    0.581
##     impenv_r          1.014    0.063   16.156    0.000    0.556    0.561
##
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w ~~
##     Unive_w           0.316    0.014   23.026    0.000    0.912    0.912
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                               0.000    0.000
##    .iplylfr_r         0.000                               0.000    0.000
##    .ipeqopt_r         0.000                               0.000    0.000
##    .ipudrst_r         0.000                               0.000    0.000
##    .impenv_r          5.002    0.036  137.441    0.000    5.002    5.056
##     Benev_w           0.000                               0.000    0.000
##     Unive_w           0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##     Unive_w           0.300                               1.000    1.000
##     Benev_w           0.400                               1.000    1.000
##    .iphlppl_r         0.464    0.037   12.471    0.000    0.464    0.537
##    .iplylfr_r         0.427    0.023   18.685    0.000    0.427    0.586
##    .ipeqopt_r         0.773    0.043   17.933    0.000    0.773    0.720
##    .ipudrst_r         0.665    0.031   21.777    0.000    0.665    0.662
##    .impenv_r          0.670    0.047   14.254    0.000    0.670    0.685
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.463
##     iplylfr_r         0.414
##     ipeqopt_r         0.280
##     ipudrst_r         0.338
##     impenv_r          0.315
##
##
## Level 2 [cntry]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r         1.000                               0.200    0.897
##     iplylfr_r         0.611    0.147    4.163    0.000    0.122    0.670
##   Unive_b =~
##     ipeqopt_r         1.000                               0.173    0.748
##     ipudrst_r         0.919    0.218    4.216    0.000    0.159    0.886
##
```

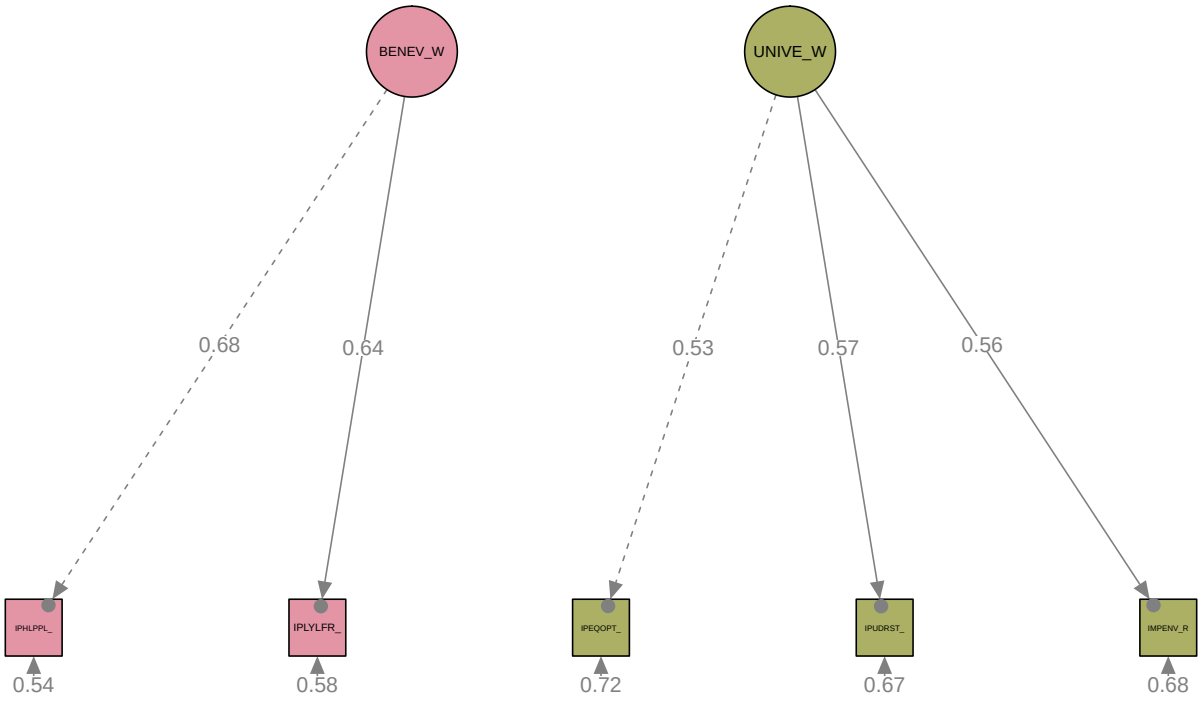
```
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b ~~
##     Unive_b           0.040    0.003   13.548    0.000    1.147    1.147
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         4.864    0.068   71.915    0.000    4.864   21.815
##    .iplylfr_r         5.110    0.053   96.924    0.000    5.110   28.030
##    .ipeqopt_r         4.837    0.062   78.282    0.000    4.837   20.891
##    .ipudrst_r         4.685    0.057   82.072    0.000    4.685   26.080
##     Benev_b           0.000                              0.000    0.000
##     Unive_b           0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##     Unive_b           0.030                              1.000    1.000
##     Benev_b           0.040                              1.000    1.000
##    .iphlppl_r         0.010    0.004    2.475    0.013    0.010    0.195
##    .iplylfr_r         0.018    0.006    3.167    0.002    0.018    0.551
##    .ipeqopt_r         0.024    0.011    2.105    0.035    0.024    0.440
##    .ipudrst_r         0.007    0.005    1.328    0.184    0.007    0.214
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.805
##     iplylfr_r         0.449
##     ipeqopt_r         0.560
##     ipudrst_r         0.786
##
## $FIT
##                          npar                          fmin
##                        21.000                         1.881
##                         chisq                           df
##                       343.920                         9.000
##                        pvalue                  chisq.scaled
##                         0.000                        99.503
##                    df.scaled                pvalue.scaled
##                         9.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         3.456                     21178.786
##                   baseline.df              baseline.pvalue
##                        16.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     3377.792                        16.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         6.270
##                           cfi                           tli
##                         0.984                         0.972
##                    cfi.scaled                    tli.scaled
##                         0.973                         0.952
##                    cfi.robust                    tli.robust
##                         0.985                         0.974
##                          logl             unrestricted.logl
```

```
##                   -173636.322                   -173464.362
##                           aic                           bic
##                    347314.645                    347486.775
##                        ntotal                          bic2
##                     26814.000                    347420.037
##             scaling.factor.h1             scaling.factor.h0
##                        10.807                        13.957
##                         rmsea                rmsea.ci.lower
##                         0.037                         0.034
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.041                         1.000
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.019                         0.018
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.021                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.036                         0.030
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.043                           NA
##                          srmr                  srmr_within
##                         0.053                         0.021
##                 srmr_between
##                         0.032
##
## $PE
##          lhs op       rhs block level exo         est          se
## 1    Benev_w =~ iphlppl_r     1     1   0 1.000000000 0.000000000
## 2    Benev_w =~ iplylfr_r     1     1   0 0.868109816 0.050127112
## 3    Unive_w =~ ipeqopt_r     1     1   0 1.000000000 0.000000000
## 4    Unive_w =~ ipudrst_r     1     1   0 1.062500608 0.032585941
## 5    Unive_w =~  impenv_r     1     1   0 1.014274273 0.062779262
## 6    Benev_w ~~   Unive_w     1     1   0 0.315845474 0.013717048
## 7    Unive_w ~~   Unive_w     1     1   0 0.300000000 0.000000000
## 8    Benev_w ~~   Benev_w     1     1   0 0.400000000 0.000000000
## 9  iphlppl_r ~~ iphlppl_r     1     1   0 0.464476877 0.037244654
## 10 iplylfr_r ~~ iplylfr_r     1     1   0 0.427100360 0.022858096
## 11 ipeqopt_r ~~ ipeqopt_r     1     1   0 0.772809083 0.043095326
## 12 ipudrst_r ~~ ipudrst_r     1     1   0 0.664548306 0.030515601
## 13  impenv_r ~~  impenv_r     1     1   0 0.670278893 0.047022795
## 14 iphlppl_r ~1               1     1   0 0.000000000 0.000000000
## 15 iplylfr_r ~1               1     1   0 0.000000000 0.000000000
## 16 ipeqopt_r ~1               1     1   0 0.000000000 0.000000000
## 17 ipudrst_r ~1               1     1   0 0.000000000 0.000000000
## 18  impenv_r ~1               1     1   0 5.002200396 0.036395291
## 19   Benev_w ~1               1     1   0 0.000000000 0.000000000
## 20   Unive_w ~1               1     1   0 0.000000000 0.000000000
## 21   Benev_b =~ iphlppl_r     2     2   0 1.000000000 0.000000000
## 22   Benev_b =~ iplylfr_r     2     2   0 0.610749989 0.146710903
## 23   Unive_b =~ ipeqopt_r     2     2   0 1.000000000 0.000000000
## 24   Unive_b =~ ipudrst_r     2     2   0 0.919311967 0.218052726
## 25   Benev_b ~~   Unive_b     2     2   0 0.039716304 0.002931592
## 26   Unive_b ~~   Unive_b     2     2   0 0.030000000 0.000000000
## 27   Benev_b ~~   Benev_b     2     2   0 0.040000000 0.000000000
## 28 iphlppl_r ~~ iphlppl_r     2     2   0 0.009709824 0.003923913
```

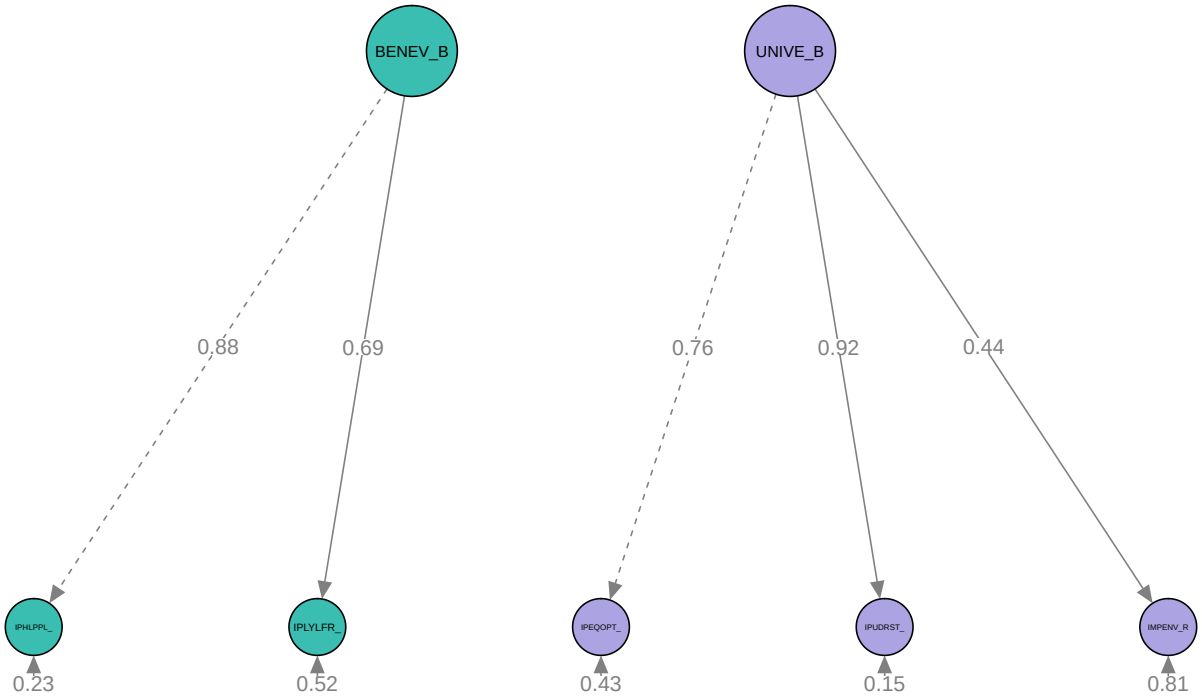
```
## 29 iplylfr_r ~~ iplylfr_r     2     2   0 0.018310167 0.005781952
## 30 ipeqopt_r ~~ ipeqopt_r     2     2   0 0.023610711 0.011218702
## 31 ipudrst_r ~~ ipudrst_r     2     2   0 0.006911964 0.005203792
## 32 iphlppl_r ~1               2     2   0 4.863767299 0.067632332
## 33 iplylfr_r ~1               2     2   0 5.109629383 0.052717855
## 34 ipeqopt_r ~1               2     2   0 4.837155557 0.061791366
## 35 ipudrst_r ~1               2     2   0 4.684769827 0.057081236
## 36   Benev_b ~1               2     2   0 0.000000000 0.000000000
## 37   Unive_b ~1               2     2   0 0.000000000 0.000000000
## 38 iphlppl_r r2 iphlppl_r     1     1   0 0.462707576          NA
## 39 iplylfr_r r2 iplylfr_r     1     1   0 0.413763537          NA
## 40 ipeqopt_r r2 ipeqopt_r     1     1   0 0.279639691          NA
## 41 ipudrst_r r2 ipudrst_r     1     1   0 0.337585047          NA
## 42  impenv_r r2  impenv_r     1     1   0 0.315276581          NA
## 43 iphlppl_r r2 iphlppl_r     2     2   0 0.804669919          NA
## 44 iplylfr_r r2 iplylfr_r     2     2   0 0.448999927          NA
## 45 ipeqopt_r r2 ipeqopt_r     2     2   0 0.559589666          NA
## 46 ipudrst_r r2 ipudrst_r     2     2   0 0.785781803          NA
##             z       pvalue      std.lv    std.all    std.nox
## 1          NA           NA 0.632455532  0.6802261  0.6802261
## 2   17.318169 0.000000e+00 0.549040856  0.6432445  0.6432445
## 3          NA           NA 0.547722558  0.5288097  0.5288097
## 4   32.606105 0.000000e+00 0.581955550  0.5810207  0.5810207
## 5   16.156199 0.000000e+00 0.555540899  0.5614950  0.5614950
## 6   23.025761 0.000000e+00 0.911767347  0.9117673  0.9117673
## 7          NA           NA 1.000000000  1.0000000  1.0000000
## 8          NA           NA 1.000000000  1.0000000  1.0000000
## 9   12.470968 0.000000e+00 0.464476877  0.5372924  0.5372924
## 10  18.684861 0.000000e+00 0.427100360  0.5862365  0.5862365
## 11  17.932550 0.000000e+00 0.772809083  0.7203603  0.7203603
## 12  21.777330 0.000000e+00 0.664548306  0.6624150  0.6624150
## 13  14.254340 0.000000e+00 0.670278893  0.6847234  0.6847234
## 14         NA           NA 0.000000000  0.0000000  0.0000000
## 15         NA           NA 0.000000000  0.0000000  0.0000000
## 16         NA           NA 0.000000000  0.0000000  0.0000000
## 17         NA           NA 0.000000000  0.0000000  0.0000000
## 18 137.440869 0.000000e+00 5.002200396  5.0558119  5.0558119
## 19         NA           NA 0.000000000  0.0000000  0.0000000
## 20         NA           NA 0.000000000  0.0000000  0.0000000
## 21         NA           NA 0.200000000  0.8970340  0.8970340
## 22   4.162949 3.141637e-05 0.122149998  0.6700746  0.6700746
## 23         NA           NA 0.173205081  0.7480573  0.7480573
## 24   4.216008 2.486653e-05 0.159229504  0.8864433  0.8864433
## 25  13.547692 0.000000e+00 1.146510931  1.1465109  1.1465109
## 26         NA           NA 1.000000000  1.0000000  1.0000000
## 27         NA           NA 1.000000000  1.0000000  1.0000000
## 28   2.474526 1.334132e-02 0.009709824  0.1953301  0.1953301
## 29   3.166779 1.541372e-03 0.018310167  0.5510001  0.5510001
## 30   2.104585 3.532745e-02 0.023610711  0.4404103  0.4404103
## 31   1.328255 1.840938e-01 0.006911964  0.2142182  0.2142182
## 32  71.914825 0.000000e+00 4.863767299 21.8148221 21.8148221
## 33  96.924075 0.000000e+00 5.109629383 28.0297402 28.0297402
## 34  78.282062 0.000000e+00 4.837155557 20.8912425 20.8912425
## 35  82.071976 0.000000e+00 4.684769827 26.0804872 26.0804872
```

```
## 36          NA           NA 0.000000000  0.0000000  0.0000000
## 37          NA           NA 0.000000000  0.0000000  0.0000000
## 38          NA           NA           NA         NA         NA
## 39          NA           NA           NA         NA         NA
## 40          NA           NA           NA         NA         NA
## 41          NA           NA           NA         NA         NA
## 42          NA           NA           NA         NA         NA
## 43          NA           NA           NA         NA         NA
## 44          NA           NA           NA         NA         NA
## 45          NA           NA           NA         NA         NA
## 46          NA           NA           NA         NA         NA
##
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mcfa9.out
```

Within



Between



Multilevel SEM

```
# Msemmodel <-'
# level: 1
# STrasc_w =~ iphlppl_r + iplylfr_r + ipeqopt_r + ipudrst_r + impenv_r
# STrasc_w ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4
# level: 2
# STrasc_b =~ iphlppl_r + iplylfr_r + ipeqopt_r + ipudrst_r + impenv_r
# STrasc_b ~  HDI
# '
Msemmodel<-'
level: 1
Benev_w =~ iphlppl_r + iplylfr_r
Unive_w =~ ipeqopt_r + ipudrst_r + impenv_r
STrasc_w =~ 1*Unive_w + 1*Benev_w
STrasc_w ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4
STrasc_w ~~ 0.3*STrasc_w
Benev_w ~~ 0.2*Benev_w
Unive_w ~~ 0.2*Unive_w
level: 2
Benev_b =~ iphlppl_r + iplylfr_r
Unive_b =~ ipeqopt_r + ipudrst_r + impenv_r
STrasc_b =~ Unive_b + Benev_b
STrasc_b ~  HDI
iphlppl_r ~ 0
```

```
impenv_r ~ 0
ipudrst_r ~ 0
iplylfr_r ~ 0
ipeqopt_r ~ 0
STrasc_b ~~ 0.04*STrasc_b
Benev_b ~~ 0.03*Benev_b
Unive_b ~~ 0.03*Unive_b
'


for (r in c(8,9)) {
  ds_filtrada2 <- ds_filtradaAll %>% filter(essround == r)

  lavaan.Msemfit <- lavaan(Msemmodel, data=ds_filtrada2, sampling.weights = "dweight",
                           auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                           int.ov.free=TRUE,     #intercepts not fixed to 0
                           meanstructure=TRUE,   #the means of the observed variables enter the model, n
                           auto.var=TRUE,        #residual variances and variances of exogeneous latent
                           auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                           cluster = "cntry")
  assign(paste0("survey.Msemfit",r),lavaan.Msemfit)

  print(paste("ESS round: ", r))
  print(fitMeasures(lavaan.Msemfit, c("chisq","pvalue","cfi", "tli","rmsea", "srmr")))
  print(modindices(lavaan.Msemfit,sort=T)[1:10,])

  print(summary(lavaan.Msemfit, standardized=T, rsquare=T, fit.measures=T))
  invisible(semPaths(paste0("C:\\Users\\pamel\\Documents\\ESS\\MPLUS\\msem",r,".out"), "model", "std", r
           style = "lisrel",  edge.label.cex = 0.8, intercepts = FALSE, layout = "tree",
                     groups = "latent", pastel = TRUE, exoCov = FALSE, optimizeLatRes = TRUE, ask = FALS



}
```

```
## Warning in lav_model_vcov(lavmodel = lavmodel2, lavsamplestats = lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= -1.499183e-18) is smaller than zero. This may be a symptom that
##     the model is not identified.
```

```
## [1] "ESS round:  8"
##    chisq   pvalue      cfi      tli    rmsea     srmr
## 3681.955    0.000    0.944    0.933    0.052    0.282
##           lhs op       rhs block group level       mi    epc sepc.lv
## 17    Unive_w ~~   Unive_w     1     1     1 1157.664 -0.284  -0.389
## 112   Benev_w ~~   Unive_w     1     1     1  818.326  0.112   0.561
## 94    Benev_w =~  impenv_r     1     1     1  624.146  0.374   0.268
## 101  STrasc_w =~  impenv_r     1     1     1  580.172  0.932   0.523
## 108 iplylfr_r ~~  impenv_r     1     1     1  575.755  0.102   0.102
## 100  STrasc_w =~ ipudrst_r     1     1     1  575.184  0.928   0.521
## 96    Unive_w =~ iplylfr_r     1     1     1  549.454  0.307   0.220
## 93    Benev_w =~ ipudrst_r     1     1     1  523.289  0.342   0.245
## 98   STrasc_w =~ iplylfr_r     1     1     1  495.413  0.754   0.423
```

```
## 102 iphlppl_r ~~ iplylfr_r     1     1     1  495.405 -0.151  -0.151
##     sepc.all sepc.nox
## 17    -0.389   -0.389
## 112    0.561    0.561
## 94     0.265    0.265
## 101    0.516    0.516
## 108    0.175    0.175
## 100    0.513    0.513
## 96     0.256    0.256
## 93     0.242    0.242
## 98     0.492    0.492
## 102   -0.366   -0.366
## lavaan 0.6-5 ended normally after 236 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         25
##
##                                                   Used       Total
##   Number of observations                          27310       28080
##   Number of clusters [cntry]                         14
##   Sampling weights variable                      dweight
##
## Model Test User Model:
##                                                Standard      Robust
##   Test Statistic                               3681.955    1209.374
##   Degrees of freedom                                 50          50
##   P-value (Chi-square)                            0.000       0.000
##   Scaling correction factor                                   3.045
##     for the Yuan-Bentler correction (Mplus variant)
##
## Model Test Baseline Model:
##
##   Test statistic                              65249.164   20489.016
##   Degrees of freedom                                 60          60
##   P-value                                         0.000       0.000
##   Scaling correction factor                                   3.185
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                     0.944       0.943
##   Tucker-Lewis Index (TLI)                        0.933       0.932
##
##   Robust Comparative Fit Index (CFI)                          0.946
##   Robust Tucker-Lewis Index (TLI)                             0.935
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -380638.344 -380638.344
##   Scaling correction factor                                  10.986
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)    -378797.367 -378797.367
##   Scaling correction factor                                   5.692
##       for the MLR correction
```

```
##
##   Akaike (AIC)                               761326.688  761326.688
##   Bayesian (BIC)                             761532.063  761532.063
##   Sample-size adjusted Bayesian (BIC)        761452.613  761452.613
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.052       0.029
##   90 Percent confidence interval - lower         0.050       0.028
##   90 Percent confidence interval - upper         0.053       0.030
##   P-value RMSEA <= 0.05                          0.033       1.000
##
##   Robust RMSEA                                               0.051
##   90 Percent confidence interval - lower                     0.048
##   90 Percent confidence interval - upper                     0.053
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)                0.035       0.035
##   SRMR (between covariance matrix)               0.247       0.247
##
## Parameter Estimates:
##
##   Information                                 Observed
##   Observed information based on                Hessian
##   Standard errors                    Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.717    0.764
##     iplylfr_r         0.732    0.051   14.477    0.000    0.525    0.611
##   Unive_w =~
##     ipeqopt_r         1.000                               0.717    0.662
##     ipudrst_r         0.861    0.038   22.866    0.000    0.617    0.609
##     impenv_r          0.748    0.038   19.549    0.000    0.537    0.530
##   STrasc_w =~
##     Unive_w           1.000                               0.782    0.782
##     Benev_w           1.000                               0.782    0.782
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc_w ~
##     agea              0.001    0.001    0.738    0.460    0.001    0.017
##     gndrD             0.188    0.015   12.844    0.000    0.335    0.167
##     eisced2           0.109    0.021    5.126    0.000    0.195    0.090
##     eisced3           0.165    0.030    5.545    0.000    0.294    0.124
##     domicil2          0.045    0.015    3.027    0.002    0.080    0.037
##     domicil3         -0.051    0.043   -1.193    0.233   -0.091   -0.028
##     domicil4          0.005    0.033    0.161    0.872    0.009    0.003
##
```

```
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                              0.000    0.000
##    .iplylfr_r         0.000                              0.000    0.000
##    .ipeqopt_r         0.000                              0.000    0.000
##    .ipudrst_r         0.000                              0.000    0.000
##    .impenv_r          0.000                              0.000    0.000
##    .Benev_w           0.000                              0.000    0.000
##    .Unive_w           0.000                              0.000    0.000
##    .STrasc_w          0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .STrasc_w          0.300                              0.953    0.953
##    .Benev_w           0.200                              0.389    0.389
##    .Unive_w           0.200                              0.389    0.389
##    .iphlppl_r         0.367    0.038    9.709    0.000    0.367    0.416
##    .iplylfr_r         0.463    0.020   23.103    0.000    0.463    0.627
##    .ipeqopt_r         0.659    0.043   15.462    0.000    0.659    0.562
##    .ipudrst_r         0.648    0.020   32.733    0.000    0.648    0.630
##    .impenv_r          0.739    0.058   12.644    0.000    0.739    0.719
##
## R-Square:
##                    Estimate
##     STrasc_w          0.047
##     Benev_w           0.611
##     Unive_w           0.611
##     iphlppl_r         0.584
##     iplylfr_r         0.373
##     ipeqopt_r         0.438
##     ipudrst_r         0.370
##     impenv_r          0.281
##
##
## Level 2 [cntry]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r         1.000                              0.299    0.901
##     iplylfr_r         1.063    0.011   98.149    0.000    0.318    0.977
##   Unive_b =~
##     ipeqopt_r         1.000                              0.299    0.885
##     ipudrst_r         0.969    0.010   99.554    0.000    0.290    0.988
##     impenv_r          1.011    0.014   72.714    0.000    0.302    0.821
##   STrasc_b =~
##     Unive_b           1.000                              0.815    0.815
##     Benev_b           1.001    0.008  124.204    0.000    0.815    0.815
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc_b ~
##     HDI               5.096    0.075   68.273    0.000   20.934    0.570
##
```

```
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                               0.000    0.000
##    .impenv_r          0.000                               0.000    0.000
##    .ipudrst_r         0.000                               0.000    0.000
##    .iplylfr_r         0.000                               0.000    0.000
##    .ipeqopt_r         0.000                               0.000    0.000
##    .Benev_b           0.000                               0.000    0.000
##    .Unive_b           0.000                               0.000    0.000
##    .STrasc_b          0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .STrasc_b          0.040                               0.675    0.675
##    .Benev_b           0.030                               0.336    0.336
##    .Unive_b           0.030                               0.336    0.336
##    .iphlppl_r         0.021    0.019    1.116    0.265    0.021    0.189
##    .iplylfr_r         0.005    0.017    0.295    0.768    0.005    0.046
##    .ipeqopt_r         0.025    0.021    1.159    0.246    0.025    0.217
##    .ipudrst_r         0.002    0.010    0.193    0.847    0.002    0.023
##    .impenv_r          0.044    0.019    2.305    0.021    0.044    0.325
##
## R-Square:
##                    Estimate
##     STrasc_b          0.325
##     Benev_b           0.664
##     Unive_b           0.664
##     iphlppl_r         0.811
##     iplylfr_r         0.954
##     ipeqopt_r         0.783
##     ipudrst_r         0.977
##     impenv_r          0.675
##
## $FIT
##                         npar                         fmin
##                       25.000                        2.910
##                        chisq                           df
##                     3681.955                       50.000
##                       pvalue                  chisq.scaled
##                        0.000                     1209.374
##                   df.scaled                 pvalue.scaled
##                       50.000                        0.000
##          chisq.scaling.factor                baseline.chisq
##                        3.045                     65249.164
##                   baseline.df               baseline.pvalue
##                       60.000                        0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                    20489.016                       60.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                        0.000                        3.185
##                          cfi                          tli
##                        0.944                        0.933
##                   cfi.scaled                   tli.scaled
##                        0.943                        0.932
```

```
##                    cfi.robust                    tli.robust
##                         0.946                         0.935
##                          logl             unrestricted.logl
##                    -380638.344                   -378797.367
##                           aic                           bic
##                    761326.688                    761532.063
##                        ntotal                          bic2
##                     27310.000                    761452.613
##             scaling.factor.h1             scaling.factor.h0
##                         5.692                        10.986
##                         rmsea                rmsea.ci.lower
##                         0.052                         0.050
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.053                         0.033
##                  rmsea.scaled         rmsea.ci.lower.scaled
##                         0.029                         0.028
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.030                         1.000
##                  rmsea.robust         rmsea.ci.lower.robust
##                         0.051                         0.048
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.053                            NA
##                          srmr                  srmr_within
##                         0.282                         0.035
##                 srmr_between
##                         0.247
##
## $PE
##           lhs op       rhs block level exo           est           se
## 1     Benev_w =~ iphlppl_r     1     1   0  1.000000e+00 0.0000000000
## 2     Benev_w =~ iplylfr_r     1     1   0  7.317608e-01 0.0505464479
## 3     Unive_w =~ ipeqopt_r     1     1   0  1.000000e+00 0.0000000000
## 4     Unive_w =~ ipudrst_r     1     1   0  8.606780e-01 0.0376404912
## 5     Unive_w =~  impenv_r     1     1   0  7.484913e-01 0.0382886123
## 6    STrasc_w =~   Unive_w     1     1   0  1.000000e+00 0.0000000000
## 7    STrasc_w =~   Benev_w     1     1   0  1.000000e+00 0.0000000000
## 8    STrasc_w  ~      agea     1     1   0  5.120689e-04 0.0006936479
## 9    STrasc_w  ~     gndrD     1     1   0  1.879364e-01 0.0146323219
## 10   STrasc_w  ~   eisced2     1     1   0  1.094385e-01 0.0213499135
## 11   STrasc_w  ~   eisced3     1     1   0  1.650486e-01 0.0297663359
## 12   STrasc_w  ~  domicil2     1     1   0  4.483230e-02 0.0148104398
## 13   STrasc_w  ~  domicil3     1     1   0 -5.087385e-02 0.0426418745
## 14   STrasc_w  ~  domicil4     1     1   0  5.241221e-03 0.0325963050
## 15   STrasc_w ~~  STrasc_w     1     1   0  3.000000e-01 0.0000000000
## 16    Benev_w ~~   Benev_w     1     1   0  2.000000e-01 0.0000000000
## 17    Unive_w ~~   Unive_w     1     1   0  2.000000e-01 0.0000000000
## 18  iphlppl_r ~~ iphlppl_r     1     1   0  3.673493e-01 0.0378356964
## 19  iplylfr_r ~~ iplylfr_r     1     1   0  4.629101e-01 0.0200371158
## 20  ipeqopt_r ~~ ipeqopt_r     1     1   0  6.591475e-01 0.0426310336
## 21  ipudrst_r ~~ ipudrst_r     1     1   0  6.479532e-01 0.0197949345
## 22   impenv_r ~~  impenv_r     1     1   0  7.389357e-01 0.0584399461
## 23       agea ~~      agea     1     1   1  3.410479e+02 0.0000000000
## 24       agea ~~     gndrD     1     1   1  2.198374e-01 0.0000000000
## 25       agea ~~   eisced2     1     1   1 -7.871643e-01 0.0000000000
```

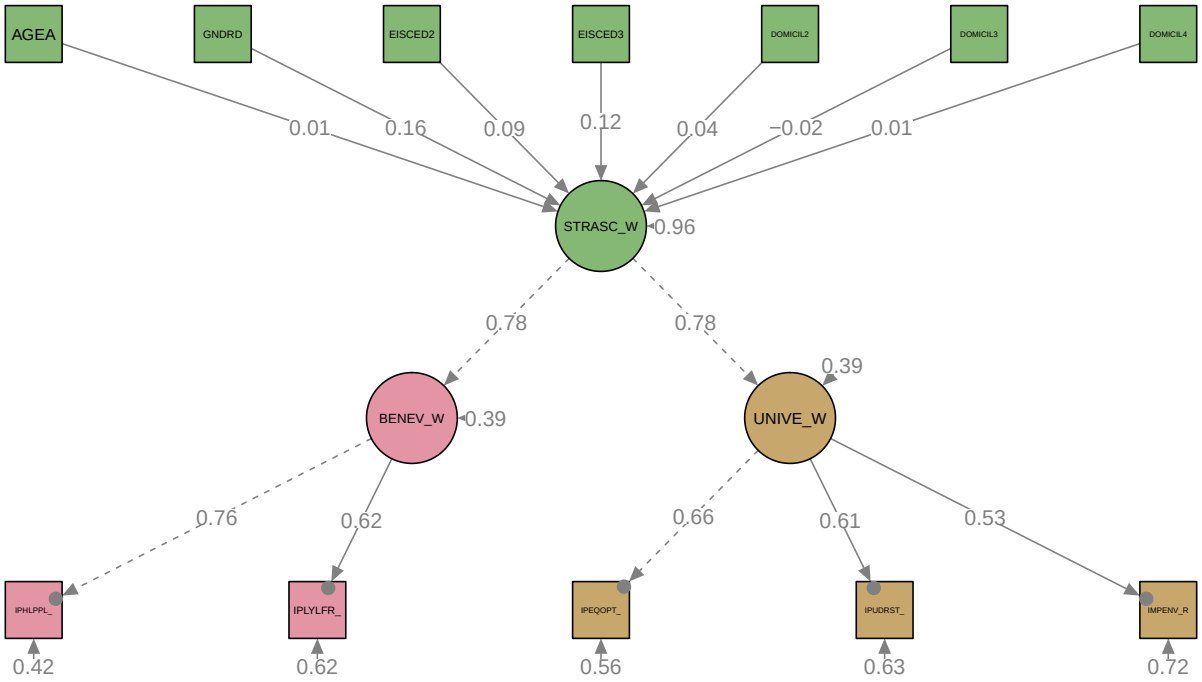
```
## 26       agea ~~   eisced3     1     1   1 -4.428063e-01 0.0000000000
## 27       agea ~~  domicil2     1     1   1 -1.265644e-01 0.0000000000
## 28       agea ~~  domicil3     1     1   1  1.319128e-02 0.0000000000
## 29       agea ~~  domicil4     1     1   1 -3.595062e-01 0.0000000000
## 30      gndrD ~~     gndrD     1     1   1  2.497038e-01 0.0000000000
## 31      gndrD ~~   eisced2     1     1   1  7.219213e-04 0.0000000000
## 32      gndrD ~~   eisced3     1     1   1  3.103269e-03 0.0000000000
## 33      gndrD ~~  domicil2     1     1   1  4.278976e-03 0.0000000000
## 34      gndrD ~~  domicil3     1     1   1 -2.766908e-03 0.0000000000
## 35      gndrD ~~  domicil4     1     1   1  1.353776e-03 0.0000000000
## 36    eisced2 ~~   eisced2     1     1   1  2.139681e-01 0.0000000000
## 37    eisced2 ~~   eisced3     1     1   1 -7.144008e-02 0.0000000000
## 38    eisced2 ~~  domicil2     1     1   1  5.272074e-03 0.0000000000
## 39    eisced2 ~~  domicil3     1     1   1 -3.777640e-04 0.0000000000
## 40    eisced2 ~~  domicil4     1     1   1  1.122347e-03 0.0000000000
## 41    eisced3 ~~   eisced3     1     1   1  1.772719e-01 0.0000000000
## 42    eisced3 ~~  domicil2     1     1   1 -4.220485e-03 0.0000000000
## 43    eisced3 ~~  domicil3     1     1   1  8.044033e-03 0.0000000000
## 44    eisced3 ~~  domicil4     1     1   1  1.710203e-02 0.0000000000
## 45   domicil2 ~~  domicil2     1     1   1  2.162388e-01 0.0000000000
## 46   domicil2 ~~  domicil3     1     1   1 -3.335124e-02 0.0000000000
## 47   domicil2 ~~  domicil4     1     1   1 -5.284087e-02 0.0000000000
## 48   domicil3 ~~  domicil3     1     1   1  9.433493e-02 0.0000000000
## 49   domicil3 ~~  domicil4     1     1   1 -1.761974e-02 0.0000000000
## 50   domicil4 ~~  domicil4     1     1   1  1.391654e-01 0.0000000000
## 51  iphlppl_r ~1              1     1   0  0.000000e+00 0.0000000000
## 52  iplylfr_r ~1              1     1   0  0.000000e+00 0.0000000000
## 53  ipeqopt_r ~1              1     1   0  0.000000e+00 0.0000000000
## 54  ipudrst_r ~1              1     1   0  0.000000e+00 0.0000000000
## 55   impenv_r ~1              1     1   0  0.000000e+00 0.0000000000
## 56       agea ~1              1     1   1  4.892179e+01 0.0000000000
## 57      gndrD ~1              1     1   1  5.172098e-01 0.0000000000
## 58    eisced2 ~1              1     1   1  3.101794e-01 0.0000000000
## 59    eisced3 ~1              1     1   1  2.303186e-01 0.0000000000
## 60   domicil2 ~1              1     1   1  3.162578e-01 0.0000000000
## 61   domicil3 ~1              1     1   1  1.054559e-01 0.0000000000
## 62   domicil4 ~1              1     1   1  1.670817e-01 0.0000000000
## 63    Benev_w ~1              1     1   0  0.000000e+00 0.0000000000
## 64    Unive_w ~1              1     1   0  0.000000e+00 0.0000000000
## 65   STrasc_w ~1              1     1   0  0.000000e+00 0.0000000000
## 66    Benev_b =~ iphlppl_r    2     2   0  1.000000e+00 0.0000000000
## 67    Benev_b =~ iplylfr_r    2     2   0  1.063192e+00 0.0108323960
## 68    Unive_b =~ ipeqopt_r    2     2   0  1.000000e+00 0.0000000000
## 69    Unive_b =~ ipudrst_r    2     2   0  9.693905e-01 0.0097373252
## 70    Unive_b =~  impenv_r    2     2   0  1.011297e+00 0.0139078807
## 71   STrasc_b =~   Unive_b    2     2   0  1.000000e+00 0.0000000000
## 72   STrasc_b =~   Benev_b    2     2   0  1.000622e+00 0.0080562950
## 73   STrasc_b  ~       HDI    2     2   0  5.095710e+00 0.0746371647
## 74  iphlppl_r ~1              2     2   0  0.000000e+00 0.0000000000
## 75   impenv_r ~1              2     2   0  0.000000e+00 0.0000000000
## 76  ipudrst_r ~1              2     2   0  0.000000e+00 0.0000000000
## 77  iplylfr_r ~1              2     2   0  0.000000e+00 0.0000000000
## 78  ipeqopt_r ~1              2     2   0  0.000000e+00 0.0000000000
## 79   STrasc_b ~~  STrasc_b    2     2   0  4.000000e-02 0.0000000000
```

```
## 80    Benev_b ~~   Benev_b     2     2   0  3.000000e-02 0.0000000000
## 81    Unive_b ~~   Unive_b     2     2   0  3.000000e-02 0.0000000000
## 82  iphlppl_r ~~ iphlppl_r     2     2   0  2.076872e-02 0.0186171278
## 83  iplylfr_r ~~ iplylfr_r     2     2   0  4.874043e-03 0.0165160122
## 84  ipeqopt_r ~~ ipeqopt_r     2     2   0  2.476449e-02 0.0213598475
## 85  ipudrst_r ~~ ipudrst_r     2     2   0  1.991354e-03 0.0103062913
## 86   impenv_r ~~  impenv_r     2     2   0  4.398812e-02 0.0190876118
## 87        HDI ~~       HDI     2     2   1  7.415306e-04 0.0000000000
## 88        HDI ~1            2     2   1  9.084286e-01 0.0000000000
## 89    Benev_b ~1            2     2   0  0.000000e+00 0.0000000000
## 90    Unive_b ~1            2     2   0  0.000000e+00 0.0000000000
## 91   STrasc_b ~1            2     2   0  0.000000e+00 0.0000000000
## 92   STrasc_w r2  STrasc_w     1     1   0  4.655723e-02           NA
## 93    Benev_w r2   Benev_w     1     1   0  6.113858e-01           NA
## 94    Unive_w r2   Unive_w     1     1   0  6.113858e-01           NA
## 95  iphlppl_r r2 iphlppl_r     1     1   0  5.835035e-01           NA
## 96  iplylfr_r r2 iplylfr_r     1     1   0  3.731678e-01           NA
## 97  ipeqopt_r r2 ipeqopt_r     1     1   0  4.384483e-01           NA
## 98  ipudrst_r r2 ipudrst_r     1     1   0  3.704230e-01           NA
## 99   impenv_r r2  impenv_r     1     1   0  2.806748e-01           NA
## 100  STrasc_b r2  STrasc_b     2     2   0  3.249490e-01           NA
## 101   Benev_b r2   Benev_b     2     2   0  6.641611e-01           NA
## 102   Unive_b r2   Unive_b     2     2   0  6.638835e-01           NA
## 103 iphlppl_r r2 iphlppl_r     2     2   0  8.113602e-01           NA
## 104 iplylfr_r r2 iplylfr_r     2     2   0  9.539529e-01           NA
## 105 ipeqopt_r r2 ipeqopt_r     2     2   0  7.828043e-01           NA
## 106 ipudrst_r r2 ipudrst_r     2     2   0  9.768085e-01           NA
## 107  impenv_r r2  impenv_r     2     2   0  6.748146e-01           NA
##                z       pvalue        std.lv      std.all       std.nox
## 1             NA           NA  7.173905e-01  0.763874008  7.638740e-01
## 2    14.4769983 0.000000e+00  5.249583e-01  0.610874648  6.108746e-01
## 3             NA           NA  7.173905e-01  0.662154307  6.621543e-01
## 4    22.8657475 0.000000e+00  6.174422e-01  0.608623836  6.086238e-01
## 5    19.5486666 0.000000e+00  5.369606e-01  0.529787518  5.297875e-01
## 6             NA           NA  7.819116e-01  0.781911614  7.819116e-01
## 7             NA           NA  7.819116e-01  0.781911614  7.819116e-01
## 8     0.7382260 4.603772e-01  9.128829e-04  0.016858648  9.128829e-04
## 9    12.8439239 0.000000e+00  3.350408e-01  0.167421124  3.350408e-01
## 10    5.1259471 2.960458e-07  1.950998e-01  0.090246733  1.950998e-01
## 11    5.5448078 2.942772e-08  2.942379e-01  0.123884948  2.942379e-01
## 12    3.0270739 2.469336e-03  7.992408e-02  0.037165884  7.992408e-02
## 13   -1.1930490 2.328502e-01 -9.069456e-02 -0.027855922 -9.069456e-02
## 14    0.1607919 8.722573e-01  9.343707e-03  0.003485658  9.343707e-03
## 15            NA           NA  9.534428e-01  0.953442767  9.534428e-01
## 16            NA           NA  3.886142e-01  0.388614228  3.886142e-01
## 17            NA           NA  3.886142e-01  0.388614228  3.886142e-01
## 18    9.7090661 0.000000e+00  3.673493e-01  0.416496499  4.164965e-01
## 19   23.1026337 0.000000e+00  4.629101e-01  0.626832165  6.268322e-01
## 20   15.4616823 0.000000e+00  6.591475e-01  0.561551673  5.615517e-01
## 21   32.7332825 0.000000e+00  6.479532e-01  0.629577026  6.295770e-01
## 22   12.6443598 0.000000e+00  7.389357e-01  0.719325185  7.193252e-01
## 23            NA           NA  3.410479e+02  1.000000000  3.410479e+02
## 24            NA           NA  2.198374e-01  0.023822173  2.198374e-01
## 25            NA           NA -7.871643e-01 -0.092147415 -7.871643e-01
```

```
## 26           NA           NA -4.428063e-01 -0.056949004 -4.428063e-01
## 27           NA           NA -1.265644e-01 -0.014737949 -1.265644e-01
## 28           NA           NA  1.319128e-02  0.002325642  1.319128e-02
## 29           NA           NA -3.595062e-01 -0.052183487 -3.595062e-01
## 30           NA           NA  2.497038e-01  1.000000000  2.497038e-01
## 31           NA           NA  7.219213e-04  0.003123221  7.219213e-04
## 32           NA           NA  3.103269e-03  0.014749824  3.103269e-03
## 33           NA           NA  4.278976e-03  0.018414523  4.278976e-03
## 34           NA           NA -2.766908e-03 -0.018027930 -2.766908e-03
## 35           NA           NA  1.353776e-03  0.007262207  1.353776e-03
## 36           NA           NA  2.139681e-01  1.000000000  2.139681e-01
## 37           NA           NA -7.144008e-02 -0.366815252 -7.144008e-02
## 38           NA           NA  5.272074e-03  0.024509820  5.272074e-03
## 39           NA           NA -3.777640e-04 -0.002658947 -3.777640e-04
## 40           NA           NA  1.122347e-03  0.006504097  1.122347e-03
## 41           NA           NA  1.772719e-01  1.000000000  1.772719e-01
## 42           NA           NA -4.220485e-03 -0.021556367 -4.220485e-03
## 43           NA           NA  8.044033e-03  0.062203894  8.044033e-03
## 44           NA           NA  1.710203e-02  0.108883492  1.710203e-02
## 45           NA           NA  2.162388e-01  1.000000000  2.162388e-01
## 46           NA           NA -3.335124e-02 -0.233511848 -3.335124e-02
## 47           NA           NA -5.284087e-02 -0.304605388 -5.284087e-02
## 48           NA           NA  9.433493e-02  1.000000000  9.433493e-02
## 49           NA           NA -1.761974e-02 -0.153779230 -1.761974e-02
## 50           NA           NA  1.391654e-01  1.000000000  1.391654e-01
## 51           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 52           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 53           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 54           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 55           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 56           NA           NA  4.892179e+01  2.649077414  4.892179e+01
## 57           NA           NA  5.172098e-01  1.035032915  5.172098e-01
## 58           NA           NA  3.101794e-01  0.670561196  3.101794e-01
## 59           NA           NA  2.303186e-01  0.547027257  2.303186e-01
## 60           NA           NA  3.162578e-01  0.680102563  3.162578e-01
## 61           NA           NA  1.054559e-01  0.343347991  1.054559e-01
## 62           NA           NA  1.670817e-01  0.447881548  1.670817e-01
## 63           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 64           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 65           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 66           NA           NA  2.988788e-01  0.900755358  9.007554e-01
## 67   98.1492830 0.000000e+00  3.177655e-01  0.976705102  9.767051e-01
## 68           NA           NA  2.987554e-01  0.884762290  8.847623e-01
## 69   99.5540815 0.000000e+00  2.896106e-01  0.988336225  9.883362e-01
## 70   72.7139474 0.000000e+00  3.021304e-01  0.821470992  8.214710e-01
## 71           NA           NA  8.147905e-01  0.814790490  8.147905e-01
## 72  124.2037681 0.000000e+00  8.149608e-01  0.814960783  8.149608e-01
## 73   68.2730950 0.000000e+00  2.093356e+01  0.570042946  2.093356e+01
## 74           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 75           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 76           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 77           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 78           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 79           NA           NA  6.750510e-01  0.675051039  6.750510e-01
```

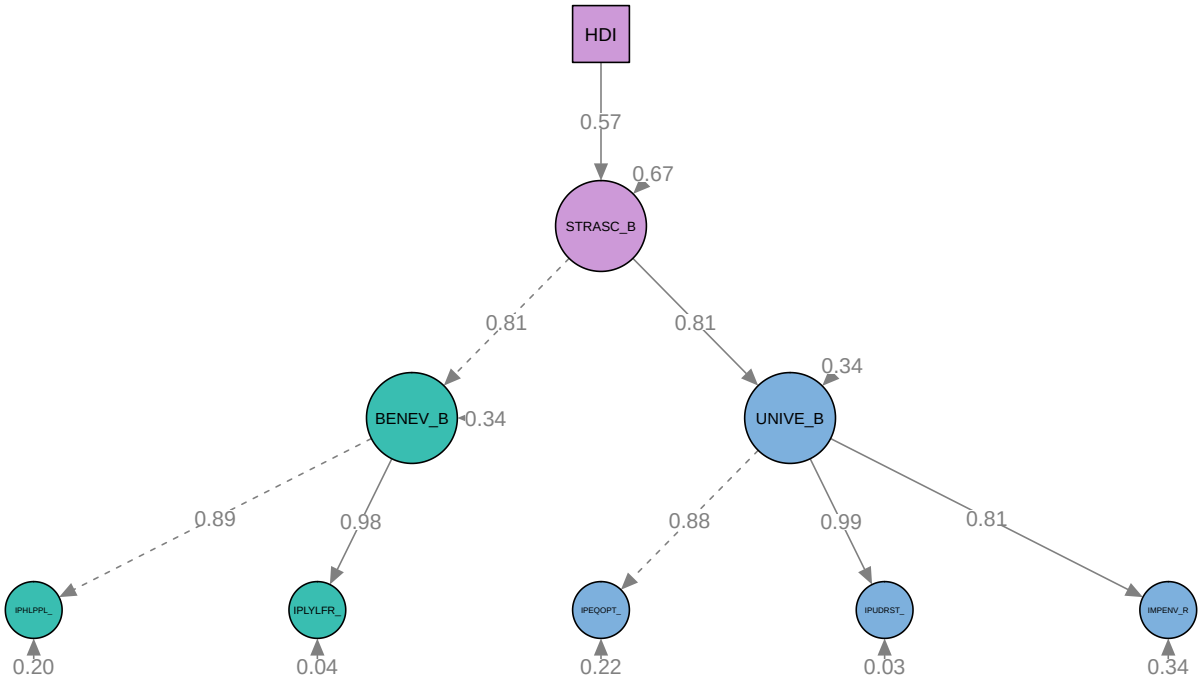
```
## 80           NA           NA  3.358389e-01  0.335838923  3.358389e-01
## 81           NA           NA  3.361165e-01  0.336116457  3.361165e-01
## 82    1.1155708 2.646059e-01  2.076872e-02  0.188639785  1.886398e-01
## 83    0.2951101 7.679097e-01  4.874043e-03  0.046047143  4.604714e-02
## 84    1.1593947 2.462953e-01  2.476449e-02  0.217195690  2.171957e-01
## 85    0.1932173 8.467888e-01  1.991354e-03  0.023191507  2.319151e-02
## 86    2.3045377 2.119248e-02  4.398812e-02  0.325185409  3.251854e-01
## 87           NA           NA  7.415306e-04  1.000000000  7.415306e-04
## 88           NA           NA  9.084286e-01 33.360015421  9.084286e-01
## 89           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 90           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 91           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 92           NA           NA            NA           NA            NA
## 93           NA           NA            NA           NA            NA
## 94           NA           NA            NA           NA            NA
## 95           NA           NA            NA           NA            NA
## 96           NA           NA            NA           NA            NA
## 97           NA           NA            NA           NA            NA
## 98           NA           NA            NA           NA            NA
## 99           NA           NA            NA           NA            NA
## 100          NA           NA            NA           NA            NA
## 101          NA           NA            NA           NA            NA
## 102          NA           NA            NA           NA            NA
## 103          NA           NA            NA           NA            NA
## 104          NA           NA            NA           NA            NA
## 105          NA           NA            NA           NA            NA
## 106          NA           NA            NA           NA            NA
## 107          NA           NA            NA           NA            NA
##
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\msem8.out
```

Within




```
## Warning in lav_model_vcov(lavmodel = lavmodel2, lavsamplestats = lavsamplestats, : lavaan WARNING:
##     The variance-covariance matrix of the estimated parameters (vcov)
##     does not appear to be positive definite! The smallest eigenvalue
##     (= -9.695622e-19) is smaller than zero. This may be a symptom that
##     the model is not identified.
```

Between




```
## [1] "ESS round:  9"
##    chisq   pvalue      cfi      tli    rmsea     srmr
## 3578.805    0.000    0.942    0.931    0.052    0.244
##           lhs op       rhs block group level       mi    epc sepc.lv
## 17    Unive_w ~~   Unive_w     1     1     1 1388.262 -0.318  -0.389
## 108 iplylfr_r ~~  impenv_r     1     1     1  789.173  0.116   0.116
## 112   Benev_w ~~   Unive_w     1     1     1  781.832  0.112   0.560
## 94    Benev_w =~  impenv_r     1     1     1  717.980  0.394   0.283
## 96    Unive_w =~ iplylfr_r     1     1     1  659.040  0.336   0.241
## 101  STrasc_w =~  impenv_r     1     1     1  654.118  0.974   0.546
## 16    Benev_w ~~   Benev_w     1     1     1  627.538 -0.241  -0.389
## 102 iphlppl_r ~~ iplylfr_r     1     1     1  627.534 -0.170  -0.170
## 98   STrasc_w =~ iplylfr_r     1     1     1  627.529  0.849   0.476
## 3     Unive_w =~ ipeqopt_r     1     1     1  626.815 -0.277  -0.198
##     sepc.all sepc.nox
## 17    -0.389   -0.389
## 108    0.206    0.206
## 112    0.560    0.560
## 94     0.288    0.288
## 96     0.285    0.285
## 101    0.557    0.557
## 16    -0.389   -0.389
## 102   -0.423   -0.423
## 98     0.562    0.562
## 3     -0.183   -0.183
## lavaan 0.6-5 ended normally after 236 iterations
```

```
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         25
##
##                                                   Used       Total
##   Number of observations                         26525       27540
##   Number of clusters [cntry]                        14
##   Sampling weights variable                     dweight
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             3578.805    1235.377
##   Degrees of freedom                               50          50
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 2.897
##     for the Yuan-Bentler correction (Mplus variant)
##
## Model Test Baseline Model:
##
##   Test statistic                            61286.099   19448.415
##   Degrees of freedom                               60          60
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 3.151
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                   0.942       0.939
##   Tucker-Lewis Index (TLI)                      0.931       0.927
##
##   Robust Comparative Fit Index (CFI)                        0.944
##   Robust Tucker-Lewis Index (TLI)                           0.933
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)           -369563.987 -369563.987
##   Scaling correction factor                                 9.569
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)   -367774.585 -367774.585
##   Scaling correction factor                                 5.121
##       for the MLR correction
##
##   Akaike (AIC)                             739177.975  739177.975
##   Bayesian (BIC)                           739382.621  739382.621
##   Sample-size adjusted Bayesian (BIC)      739303.171  739303.171
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                         0.052       0.030
##   90 Percent confidence interval - lower        0.050       0.029
##   90 Percent confidence interval - upper        0.053       0.031
##   P-value RMSEA <= 0.05                         0.034       1.000
##
##   Robust RMSEA                                              0.051
```

```
##   90 Percent confidence interval - lower                    0.048
##   90 Percent confidence interval - upper                    0.053
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)               0.035       0.035
##   SRMR (between covariance matrix)              0.209       0.209
##
## Parameter Estimates:
##
##   Information                                     Observed
##   Observed information based on                    Hessian
##   Standard errors                        Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.717    0.771
##     iplylfr_r         0.706    0.049   14.305    0.000    0.506    0.598
##   Unive_w =~
##     ipeqopt_r         1.000                               0.717    0.662
##     ipudrst_r         0.839    0.035   23.953    0.000    0.602    0.599
##     impenv_r          0.723    0.044   16.494    0.000    0.518    0.529
##   STrasc_w =~
##     Unive_w           1.000                               0.781    0.781
##     Benev_w           1.000                               0.781    0.781
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc_w ~
##     agea             -0.001    0.001   -1.412    0.158   -0.002   -0.028
##     gndrD             0.193    0.017   11.452    0.000    0.344    0.172
##     eisced2           0.084    0.017    4.868    0.000    0.149    0.070
##     eisced3           0.135    0.024    5.552    0.000    0.241    0.103
##     domicil2          0.023    0.018    1.333    0.182    0.042    0.019
##     domicil3          0.057    0.027    2.084    0.037    0.101    0.032
##     domicil4          0.044    0.023    1.950    0.051    0.079    0.030
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                               0.000    0.000
##    .iplylfr_r         0.000                               0.000    0.000
##    .ipeqopt_r         0.000                               0.000    0.000
##    .ipudrst_r         0.000                               0.000    0.000
##    .impenv_r          0.000                               0.000    0.000
##    .Benev_w           0.000                               0.000    0.000
##    .Unive_w           0.000                               0.000    0.000
##    .STrasc_w          0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
```

```
##    .STrasc_w          0.300                                  0.956    0.956
##    .Benev_w           0.200                                  0.389    0.389
##    .Unive_w           0.200                                  0.389    0.389
##    .iphlppl_r         0.350    0.039    8.972    0.000    0.350    0.405
##    .iplylfr_r         0.460    0.023   20.421    0.000    0.460    0.642
##    .ipeqopt_r         0.660    0.041   16.114    0.000    0.660    0.562
##    .ipudrst_r         0.646    0.024   27.122    0.000    0.646    0.641
##    .impenv_r          0.692    0.045   15.551    0.000    0.692    0.721
##
## R-Square:
##                   Estimate
##     STrasc_w         0.044
##     Benev_w          0.611
##     Unive_w          0.611
##     iphlppl_r        0.595
##     iplylfr_r        0.358
##     ipeqopt_r        0.438
##     ipudrst_r        0.359
##     impenv_r         0.279
##
##
## Level 2 [cntry]:
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r         1.000                                0.297    0.890
##     iplylfr_r         1.060    0.013   84.247    0.000    0.315    0.958
##   Unive_b =~
##     ipeqopt_r         1.000                                0.296    0.871
##     ipudrst_r         0.971    0.010   96.397    0.000    0.288    0.978
##     impenv_r          1.041    0.015   70.043    0.000    0.309    0.872
##   STrasc_b =~
##     Unive_b           1.000                                0.812    0.812
##     Benev_b           1.004    0.009  117.584    0.000    0.813    0.813
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   STrasc_b ~
##     HDI               5.151    0.086   59.921    0.000   21.408    0.556
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                                0.000    0.000
##    .impenv_r          0.000                                0.000    0.000
##    .ipudrst_r         0.000                                0.000    0.000
##    .iplylfr_r         0.000                                0.000    0.000
##    .ipeqopt_r         0.000                                0.000    0.000
##    .Benev_b           0.000                                0.000    0.000
##    .Unive_b           0.000                                0.000    0.000
##    .STrasc_b          0.000                                0.000    0.000
##
## Variances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
```

```
##    .STrasc_b          0.040                                0.691    0.691
##    .Benev_b           0.030                                0.339    0.339
##    .Unive_b           0.030                                0.341    0.341
##    .iphlppl_r         0.023    0.023    0.995    0.320    0.023    0.209
##    .iplylfr_r         0.009    0.021    0.421    0.674    0.009    0.082
##    .ipeqopt_r         0.028    0.021    1.328    0.184    0.028    0.241
##    .ipudrst_r         0.004    0.008    0.451    0.652    0.004    0.043
##    .impenv_r          0.030    0.007    4.292    0.000    0.030    0.240
##
## R-Square:
##                    Estimate
##     STrasc_b          0.309
##     Benev_b           0.661
##     Unive_b           0.659
##     iphlppl_r         0.791
##     iplylfr_r         0.918
##     ipeqopt_r         0.759
##     ipudrst_r         0.957
##     impenv_r          0.760
##
## $FIT
##                          npar                          fmin
##                        25.000                         2.905
##                         chisq                           df
##                      3578.805                       50.000
##                        pvalue                  chisq.scaled
##                         0.000                      1235.377
##                    df.scaled                 pvalue.scaled
##                        50.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         2.897                      61286.099
##                   baseline.df               baseline.pvalue
##                        60.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     19448.415                         60.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         3.151
##                           cfi                           tli
##                         0.942                         0.931
##                    cfi.scaled                    tli.scaled
##                         0.939                         0.927
##                    cfi.robust                    tli.robust
##                         0.944                         0.933
##                          logl              unrestricted.logl
##                    -369563.987                   -367774.585
##                           aic                           bic
##                    739177.975                    739382.621
##                        ntotal                         bic2
##                     26525.000                    739303.171
##             scaling.factor.h1             scaling.factor.h0
##                         5.121                         9.569
##                         rmsea                rmsea.ci.lower
##                         0.052                         0.050
##                rmsea.ci.upper                  rmsea.pvalue
```

```
##                       0.053                       0.034
##                rmsea.scaled       rmsea.ci.lower.scaled
##                       0.030                       0.029
##       rmsea.ci.upper.scaled         rmsea.pvalue.scaled
##                       0.031                       1.000
##                rmsea.robust       rmsea.ci.lower.robust
##                       0.051                       0.048
##       rmsea.ci.upper.robust         rmsea.pvalue.robust
##                       0.053                          NA
##                        srmr                srmr_within
##                       0.244                       0.035
##                srmr_between
##                       0.209
##
## $PE
##           lhs op       rhs block level exo           est           se
## 1     Benev_w =~ iphlppl_r     1     1   0  1.000000e+00 0.0000000000
## 2     Benev_w =~ iplylfr_r     1     1   0  7.061688e-01 0.0493642097
## 3     Unive_w =~ ipeqopt_r     1     1   0  1.000000e+00 0.0000000000
## 4     Unive_w =~ ipudrst_r     1     1   0  8.392263e-01 0.0350364627
## 5     Unive_w =~  impenv_r     1     1   0  7.229147e-01 0.0438294352
## 6    STrasc_w =~   Unive_w     1     1   0  1.000000e+00 0.0000000000
## 7    STrasc_w =~   Benev_w     1     1   0  1.000000e+00 0.0000000000
## 8    STrasc_w  ~      agea     1     1   0 -8.488482e-04 0.0006013095
## 9    STrasc_w  ~     gndrD     1     1   0  1.927589e-01 0.0168314593
## 10   STrasc_w  ~   eisced2     1     1   0  8.372235e-02 0.0171987330
## 11   STrasc_w  ~   eisced3     1     1   0  1.348866e-01 0.0242970848
## 12   STrasc_w  ~  domicil2     1     1   0  2.348628e-02 0.0176127594
## 13   STrasc_w  ~  domicil3     1     1   0  5.673031e-02 0.0272203220
## 14   STrasc_w  ~  domicil4     1     1   0  4.447262e-02 0.0228097763
## 15   STrasc_w ~~  STrasc_w     1     1   0  3.000000e-01 0.0000000000
## 16    Benev_w ~~   Benev_w     1     1   0  2.000000e-01 0.0000000000
## 17    Unive_w ~~   Unive_w     1     1   0  2.000000e-01 0.0000000000
## 18  iphlppl_r ~~ iphlppl_r     1     1   0  3.503005e-01 0.0390425603
## 19  iplylfr_r ~~ iplylfr_r     1     1   0  4.603465e-01 0.0225423608
## 20  ipeqopt_r ~~ ipeqopt_r     1     1   0  6.601316e-01 0.0409667743
## 21  ipudrst_r ~~ ipudrst_r     1     1   0  6.457592e-01 0.0238095609
## 22   impenv_r ~~  impenv_r     1     1   0  6.922019e-01 0.0445130614
## 23       agea ~~      agea     1     1   1  3.476750e+02 0.0000000000
## 24       agea ~~     gndrD     1     1   1  2.426912e-01 0.0000000000
## 25       agea ~~   eisced2     1     1   1 -6.507168e-01 0.0000000000
## 26       agea ~~   eisced3     1     1   1 -5.406374e-01 0.0000000000
## 27       agea ~~  domicil2     1     1   1 -4.031874e-02 0.0000000000
## 28       agea ~~  domicil3     1     1   1  7.142469e-02 0.0000000000
## 29       agea ~~  domicil4     1     1   1 -3.147939e-01 0.0000000000
## 30      gndrD ~~     gndrD     1     1   1  2.492865e-01 0.0000000000
## 31      gndrD ~~   eisced2     1     1   1  2.435458e-03 0.0000000000
## 32      gndrD ~~   eisced3     1     1   1  1.850434e-03 0.0000000000
## 33      gndrD ~~  domicil2     1     1   1  5.429576e-03 0.0000000000
## 34      gndrD ~~  domicil3     1     1   1  2.237286e-05 0.0000000000
## 35      gndrD ~~  domicil4     1     1   1  1.692725e-04 0.0000000000
## 36    eisced2 ~~   eisced2     1     1   1  2.174369e-01 0.0000000000
## 37    eisced2 ~~   eisced3     1     1   1 -7.776361e-02 0.0000000000
## 38    eisced2 ~~  domicil2     1     1   1  5.859252e-03 0.0000000000
```

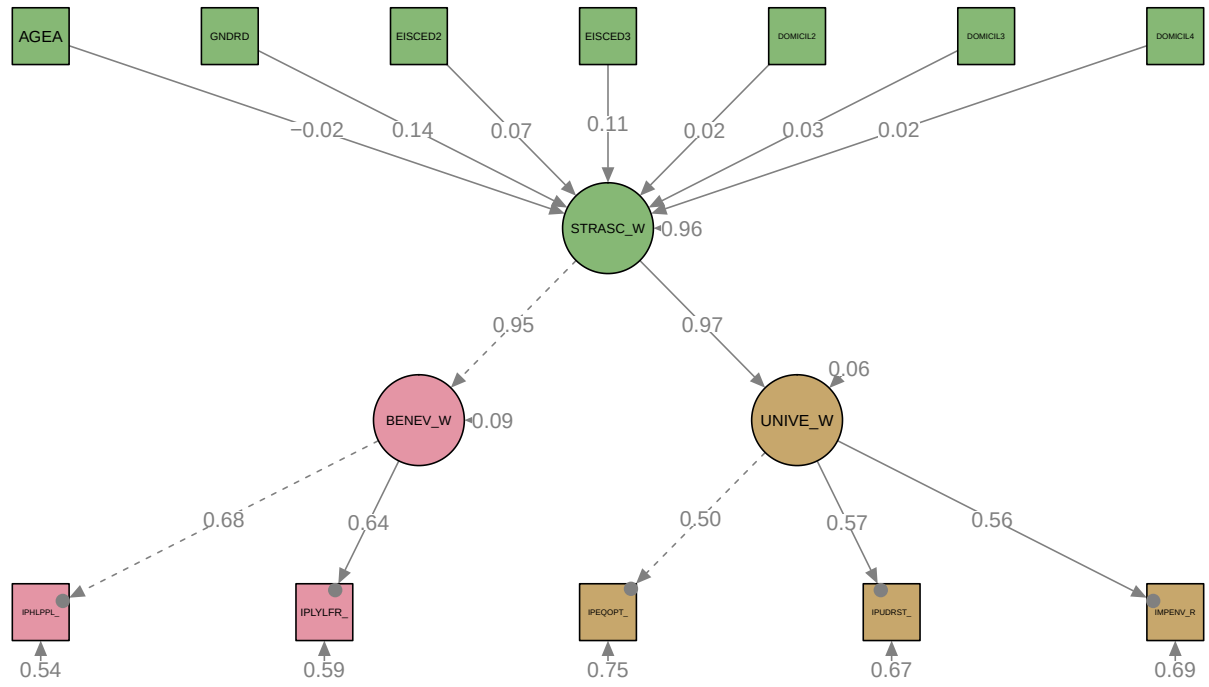
```
## 39    eisced2 ~~  domicil3     1     1   1 -1.655407e-03 0.0000000000
## 40    eisced2 ~~  domicil4     1     1   1  3.408555e-03 0.0000000000
## 41    eisced3 ~~   eisced3     1     1   1  1.841335e-01 0.0000000000
## 42    eisced3 ~~  domicil2     1     1   1 -2.470509e-03 0.0000000000
## 43    eisced3 ~~  domicil3     1     1   1  1.013673e-02 0.0000000000
## 44    eisced3 ~~  domicil4     1     1   1  1.310933e-02 0.0000000000
## 45   domicil2 ~~  domicil2     1     1   1  2.156720e-01 0.0000000000
## 46   domicil2 ~~  domicil3     1     1   1 -3.593941e-02 0.0000000000
## 47   domicil2 ~~  domicil4     1     1   1 -5.486425e-02 0.0000000000
## 48   domicil3 ~~  domicil3     1     1   1  1.011539e-01 0.0000000000
## 49   domicil3 ~~  domicil4     1     1   1 -1.990702e-02 0.0000000000
## 50   domicil4 ~~  domicil4     1     1   1  1.439365e-01 0.0000000000
## 51  iphlppl_r ~1              1     1   0  0.000000e+00 0.0000000000
## 52  iplylfr_r ~1              1     1   0  0.000000e+00 0.0000000000
## 53  ipeqopt_r ~1              1     1   0  0.000000e+00 0.0000000000
## 54  ipudrst_r ~1              1     1   0  0.000000e+00 0.0000000000
## 55   impenv_r ~1              1     1   0  0.000000e+00 0.0000000000
## 56       agea ~1              1     1   1  4.992818e+01 0.0000000000
## 57      gndrD ~1              1     1   1  5.267107e-01 0.0000000000
## 58    eisced2 ~1              1     1   1  3.195476e-01 0.0000000000
## 59    eisced3 ~1              1     1   1  2.433553e-01 0.0000000000
## 60   domicil2 ~1              1     1   1  3.147220e-01 0.0000000000
## 61   domicil3 ~1              1     1   1  1.141942e-01 0.0000000000
## 62   domicil4 ~1              1     1   1  1.743261e-01 0.0000000000
## 63    Benev_w ~1              1     1   0  0.000000e+00 0.0000000000
## 64    Unive_w ~1              1     1   0  0.000000e+00 0.0000000000
## 65   STrasc_w ~1              1     1   0  0.000000e+00 0.0000000000
## 66    Benev_b =~ iphlppl_r    2     2   0  1.000000e+00 0.0000000000
## 67    Benev_b =~ iplylfr_r    2     2   0  1.060132e+00 0.0125836902
## 68    Unive_b =~ ipeqopt_r    2     2   0  1.000000e+00 0.0000000000
## 69    Unive_b =~ ipudrst_r    2     2   0  9.714103e-01 0.0100772265
## 70    Unive_b =~  impenv_r    2     2   0  1.041295e+00 0.0148664161
## 71   STrasc_b =~   Unive_b    2     2   0  1.000000e+00 0.0000000000
## 72   STrasc_b =~   Benev_b    2     2   0  1.004372e+00 0.0085417733
## 73   STrasc_b  ~       HDI    2     2   0  5.150837e+00 0.0859607274
## 74  iphlppl_r ~1              2     2   0  0.000000e+00 0.0000000000
## 75   impenv_r ~1              2     2   0  0.000000e+00 0.0000000000
## 76  ipudrst_r ~1              2     2   0  0.000000e+00 0.0000000000
## 77  iplylfr_r ~1              2     2   0  0.000000e+00 0.0000000000
## 78  ipeqopt_r ~1              2     2   0  0.000000e+00 0.0000000000
## 79   STrasc_b ~~  STrasc_b    2     2   0  4.000000e-02 0.0000000000
## 80    Benev_b ~~   Benev_b    2     2   0  3.000000e-02 0.0000000000
## 81    Unive_b ~~   Unive_b    2     2   0  3.000000e-02 0.0000000000
## 82  iphlppl_r ~~ iphlppl_r    2     2   0  2.329496e-02 0.0234209441
## 83  iplylfr_r ~~ iplylfr_r    2     2   0  8.827815e-03 0.0209618120
## 84  ipeqopt_r ~~ ipeqopt_r    2     2   0  2.787580e-02 0.0209900840
## 85  ipudrst_r ~~ ipudrst_r    2     2   0  3.739157e-03 0.0082872227
## 86   impenv_r ~~  impenv_r    2     2   0  3.004670e-02 0.0070005264
## 87       HDI ~~       HDI    2     2   1  6.743929e-04 0.0000000000
## 88       HDI ~1              2     2   1  9.135000e-01 0.0000000000
## 89    Benev_b ~1              2     2   0  0.000000e+00 0.0000000000
## 90    Unive_b ~1              2     2   0  0.000000e+00 0.0000000000
## 91   STrasc_b ~1              2     2   0  0.000000e+00 0.0000000000
## 92   STrasc_w r2  STrasc_w    1     1   0  4.385981e-02           NA
```

```
## 93    Benev_w r2   Benev_w     1     1   0  6.107143e-01           NA
## 94    Unive_w r2   Unive_w     1     1   0  6.107143e-01           NA
## 95  iphlppl_r r2 iphlppl_r     1     1   0  5.945887e-01           NA
## 96  iplylfr_r r2 iplylfr_r     1     1   0  3.575481e-01           NA
## 97  ipeqopt_r r2 ipeqopt_r     1     1   0  4.376561e-01           NA
## 98  ipudrst_r r2 ipudrst_r     1     1   0  3.591127e-01           NA
## 99   impenv_r r2  impenv_r     1     1   0  2.794791e-01           NA
## 100  STrasc_b r2  STrasc_b     2     2   0  3.090630e-01           NA
## 101   Benev_b r2   Benev_b     2     2   0  6.606326e-01           NA
## 102   Unive_b r2   Unive_b     2     2   0  6.586736e-01           NA
## 103 iphlppl_r r2 iphlppl_r     2     2   0  7.914408e-01           NA
## 104 iplylfr_r r2 iplylfr_r     2     2   0  9.183959e-01           NA
## 105 ipeqopt_r r2 ipeqopt_r     2     2   0  7.592102e-01           NA
## 106 ipudrst_r r2 ipudrst_r     2     2   0  9.568614e-01           NA
## 107  impenv_r r2  impenv_r     2     2   0  7.602937e-01           NA
##                z       pvalue        std.lv       std.all       std.nox
## 1             NA           NA  7.167716e-01  0.7710957840  7.710958e-01
## 2    14.3052793 0.000000e+00  5.061617e-01  0.5979532348  5.979532e-01
## 3             NA           NA  7.167716e-01  0.6615558275  6.615558e-01
## 4    23.9529391 0.000000e+00  6.015335e-01  0.5992601244  5.992601e-01
## 5    16.4938164 0.000000e+00  5.181647e-01  0.5286578742  5.286579e-01
## 6             NA           NA  7.814821e-01  0.7814821339  7.814821e-01
## 7             NA           NA  7.814821e-01  0.7814821339  7.814821e-01
## 8    -1.4116660 1.580483e-01 -1.515410e-03 -0.0282564052 -1.515410e-03
## 9    11.4522997 0.000000e+00  3.441237e-01  0.1718161769  3.441237e-01
## 10    4.8679370 1.127693e-06  1.494657e-01  0.0696960582  1.494657e-01
## 11    5.5515558 2.831384e-08  2.408070e-01  0.1033321470  2.408070e-01
## 12    1.3334810 1.823740e-01  4.192899e-02  0.0194720350  4.192899e-02
## 13    2.0841162 3.714960e-02  1.012781e-01  0.0322111744  1.012781e-01
## 14    1.9497176 5.120979e-02  7.939495e-02  0.0301216238  7.939495e-02
## 15            NA           NA  9.561402e-01  0.9561401903  9.561402e-01
## 16            NA           NA  3.892857e-01  0.3892856744  3.892857e-01
## 17            NA           NA  3.892857e-01  0.3892856744  3.892857e-01
## 18    8.9722728 0.000000e+00  3.503005e-01  0.4054112919  4.054113e-01
## 19   20.4213963 0.000000e+00  4.603465e-01  0.6424519290  6.424519e-01
## 20   16.1138303 0.000000e+00  6.601316e-01  0.5623438872  5.623439e-01
## 21   27.1218445 0.000000e+00  6.457592e-01  0.6408873033  6.408873e-01
## 22   15.5505342 0.000000e+00  6.922019e-01  0.7205208521  7.205209e-01
## 23            NA           NA  3.476750e+02  1.0000000000  3.476750e+02
## 24            NA           NA  2.426912e-01  0.0260686109  2.426912e-01
## 25            NA           NA -6.507168e-01 -0.0748408359 -6.507168e-01
## 26            NA           NA -5.406374e-01 -0.0675698567 -5.406374e-01
## 27            NA           NA -4.031874e-02 -0.0046561113 -4.031874e-02
## 28            NA           NA  7.142469e-02  0.0120439915  7.142469e-02
## 29            NA           NA -3.147939e-01 -0.0444993986 -3.147939e-01
## 30            NA           NA  2.492865e-01  1.0000000000  2.492865e-01
## 31            NA           NA  2.435458e-03  0.0104607929  2.435458e-03
## 32            NA           NA  1.850434e-03  0.0086368958  1.850434e-03
## 33            NA           NA  5.429576e-03  0.0234163679  5.429576e-03
## 34            NA           NA  2.237286e-05  0.0001408902  2.237286e-05
## 35            NA           NA  1.692725e-04  0.0008936171  1.692725e-04
## 36            NA           NA  2.174369e-01  1.0000000000  2.174369e-01
## 37            NA           NA -7.776361e-02 -0.3886362784 -7.776361e-02
## 38            NA           NA  5.859252e-03  0.0270569353  5.859252e-03
```

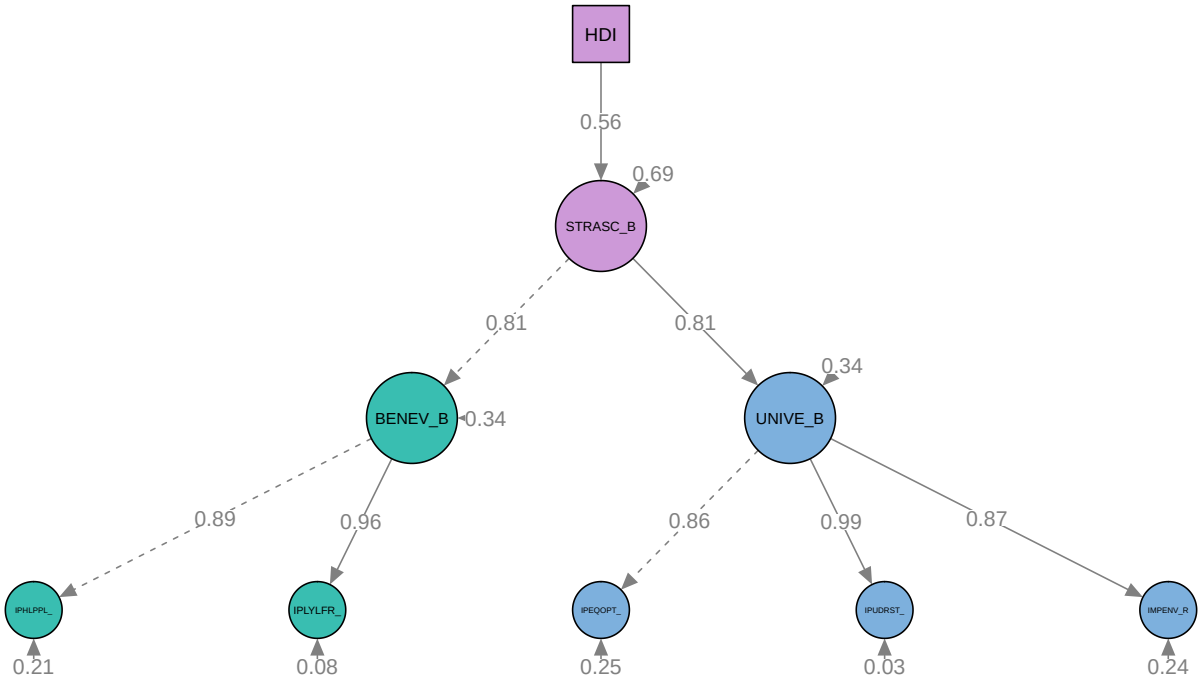
```
## 39           NA           NA -1.655407e-03 -0.0111621259 -1.655407e-03
## 40           NA           NA  3.408555e-03  0.0192671785  3.408555e-03
## 41           NA           NA  1.841335e-01  1.0000000000  1.841335e-01
## 42           NA           NA -2.470509e-03 -0.0123971859 -2.470509e-03
## 43           NA           NA  1.013673e-02  0.0742745760  1.013673e-02
## 44           NA           NA  1.310933e-02  0.0805246015  1.310933e-02
## 45           NA           NA  2.156720e-01  1.0000000000  2.156720e-01
## 46           NA           NA -3.593941e-02 -0.2433227894 -3.593941e-02
## 47           NA           NA -5.486425e-02 -0.3113917174 -5.486425e-02
## 48           NA           NA  1.011539e-01  1.0000000000  1.011539e-01
## 49           NA           NA -1.990702e-02 -0.1649793583 -1.990702e-02
## 50           NA           NA  1.439365e-01  1.0000000000  1.439365e-01
## 51           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 52           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 53           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 54           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 55           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 56           NA           NA  4.992818e+01  2.6776822518  4.992818e+01
## 57           NA           NA  5.267107e-01  1.0549276711  5.267107e-01
## 58           NA           NA  3.195476e-01  0.6852813325  3.195476e-01
## 59           NA           NA  2.433553e-01  0.5671193128  2.433553e-01
## 60           NA           NA  3.147220e-01  0.6776885010  3.147220e-01
## 61           NA           NA  1.141942e-01  0.3590481306  1.141942e-01
## 62           NA           NA  1.743261e-01  0.4594909268  1.743261e-01
## 63           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 64           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 65           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 66           NA           NA  2.973210e-01  0.8896295868  8.896296e-01
## 67   84.2465275 0.000000e+00  3.151996e-01  0.9583297478  9.583297e-01
## 68           NA           NA  2.964665e-01  0.8713267177  8.713267e-01
## 69   96.3965952 0.000000e+00  2.879906e-01  0.9781929276  9.781929e-01
## 70   70.0434346 0.000000e+00  3.087091e-01  0.8719482403  8.719482e-01
## 71           NA           NA  8.115871e-01  0.8115870662  8.115871e-01
## 72  117.5835996 0.000000e+00  8.127931e-01  0.8127930918  8.127931e-01
## 73   59.9208211 0.000000e+00  2.140755e+01  0.5559343837  2.140755e+01
## 74           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 75           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 76           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 77           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 78           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 79           NA           NA  6.909370e-01  0.6909369611  6.909370e-01
## 80           NA           NA  3.393674e-01  0.3393673899  3.393674e-01
## 81           NA           NA  3.413264e-01  0.3413264340  3.413264e-01
## 82    0.9946211 3.199206e-01  2.329496e-02  0.2085591983  2.085592e-01
## 83    0.4211380 6.736543e-01  8.827815e-03  0.0816040944  8.160409e-02
## 84    1.3280459 1.841629e-01  2.787580e-02  0.2407897510  2.407898e-01
## 85    0.4511955 6.518487e-01  3.739157e-03  0.0431385964  4.313860e-02
## 86    4.2920626 1.770210e-05  3.004670e-02  0.2397062662  2.397063e-01
## 87           NA           NA  6.743929e-04  1.0000000000  6.743929e-04
## 88           NA           NA  9.135000e-01 35.1764550515  9.135000e-01
## 89           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 90           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 91           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 92           NA           NA            NA            NA            NA
```

```
## 93          NA          NA          NA          NA          NA
## 94          NA          NA          NA          NA          NA
## 95          NA          NA          NA          NA          NA
## 96          NA          NA          NA          NA          NA
## 97          NA          NA          NA          NA          NA
## 98          NA          NA          NA          NA          NA
## 99          NA          NA          NA          NA          NA
## 100         NA          NA          NA          NA          NA
## 101         NA          NA          NA          NA          NA
## 102         NA          NA          NA          NA          NA
## 103         NA          NA          NA          NA          NA
## 104         NA          NA          NA          NA          NA
## 105         NA          NA          NA          NA          NA
## 106         NA          NA          NA          NA          NA
## 107         NA          NA          NA          NA          NA
##
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\msem9.out
```

Within



Between




```
#
#
# cntrylabels <- num_lab("
#   1   Austria
#   2   Belgium
#   3   Czechia
#   4   Estonia
#   5   France
#   6   Germany
#   7   Ireland
#   8   Italy
#   9   Netherlands
#   10  Norway
#   11  Poland
#   12  Slovenia
#   13  Switzerland
#   14  United Kingdom"
# )
#
sum1 <-full_join(parameterEstimates(survey.semfit),
                 parameterEstimates(survey.semfit),
                 by=c("lhs", "op", "rhs"))
sum1 <- sum1 %>%  mutate(est.x = ifelse(pvalue.x > 0.05, NA, round(est.x,3)),
                         est.x = ifelse(rhs == "agea", est.x*10, est.x),
                         est.y = ifelse(pvalue.y > 0.05, NA, round(est.y,3)),
                         est.y = ifelse(rhs == "agea", est.y*10, est.y),
```

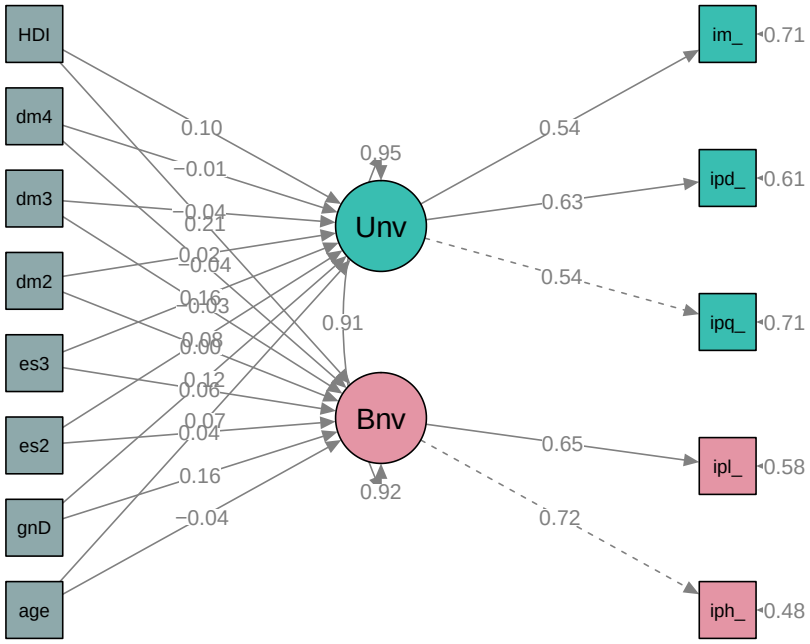
```
                        rhs1 = ifelse(rhs == "gndrD", "Gender (Female / Male)",
                               ifelse(rhs == "agea", "Age (10 years increment)",
                               ifelse(rhs == "eisced2", "Highest level of education, (Upper secondary
                               ifelse(rhs == "eisced3", "Highest level of education, (Bachelor or high
                               ifelse(rhs == "domicil2", "Domicile (Town or small city/Countryside)",
                               ifelse(rhs == "domicil3", "Domicile (Suburbs or outskirts of big city/C
                               ifelse(rhs == "domicil4", "Domicile (A big city/Countryside)",
                               ifelse(rhs == "HDI","Human Development Index",rhs)))))))))
sum3 <-full_join(parameterEstimates(survey.Msemfit8),
                 parameterEstimates(survey.Msemfit9),
                 by=c("lhs", "op", "rhs","block","level"))
sum3 <- sum3 %>%  mutate(est.x = ifelse(pvalue.x > 0.05, NA, round(est.x,3)),
                         est.x = ifelse(rhs == "agea", est.x*10, est.x),
                         est.y = ifelse(pvalue.y > 0.05, NA, round(est.y,3)),
                         est.y = ifelse(rhs == "agea", est.y*10, est.y),
                         rhs1 = ifelse(rhs == "gndrD", "Gender (Female / Male)",
                                ifelse(rhs == "agea", "Age (10 years increment)",
                                ifelse(rhs == "eisced2", "Highest level of education, (Upper secondary
                                ifelse(rhs == "eisced3", "Highest level of education, (Bachelor or high
                                ifelse(rhs == "domicil2", "Domicile (Town or small city/Countryside)",
                                ifelse(rhs == "domicil3", "Domicile (Suburbs or outskirts of big city/C
                                ifelse(rhs == "domicil4", "Domicile (A big city/Countryside)",
                                ifelse(rhs == "HDI","Human Development Index",rhs)))))))))

dir <- "G:/My Drive/Master in Statistics/Structural equations/Paper/"
write.table(sum1,paste0(dir,"ParametersCSemfit.csv"), sep = ",", row.names = FALSE)
write.table(sum3,paste0(dir,"ParametersMSemfit.csv"), sep = ",", row.names = FALSE)
```

MIMIC

```
mimicmodel21 <-'
Benev =~ iphlppl_r + iplylfr_r
Unive =~ ipeqopt_r + ipudrst_r + impenv_r
Benev ~~ Unive
Benev ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4 + HDI
Unive ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4 + HDI
'


for (r in c(8,9)) {
  ds_filtrada2 <- ds_filtradaAll %>% filter(essround == r)
  survey.design2 <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada2)

  lavaan.mimicfit <- lavaan(mimicmodel21, data=ds_filtrada2,
                            auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                            int.ov.free=TRUE,     #intercepts not fixed to 0
                            meanstructure=TRUE,   #the means of the observed variables enter the model, n
                            auto.var=TRUE,        #residual variances and variances of exogeneous latent
                            auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                            estimator="MLM",
                            cluster = "cntry")
  survey.mimicfit <- lavaan.survey(lavaan.fit=lavaan.mimicfit,survey.design=survey.design2)
```

```
  assign(paste0("survey.mimicfit",r),survey.mimicfit)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.mimicfit, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
  print(modindices(survey.mimicfit,sort=T)[1:10,])
  invisible(semPaths(survey.mimicfit,"model","std","lisrel", edge.label.cex = 0.8, intercepts = FALSE,
                     groups = "latent", pastel = TRUE, exoCov = FALSE, optimizeLatRes = TRUE, rotation =

  print(summary(survey.mimicfit, standardized=T, rsquare=T, fit.measures=T))

}
```

```
## [1] "ESS round:  8"
##         chisq        pvalue           cfi           tli         rmsea
##      1885.927         0.000         0.934         0.883         0.049
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.020       558.576         0.000         0.936         0.887
##  rmsea.robust  srmr_bentler
##         0.048         0.020
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 92 iplylfr_r ~~  impenv_r 234.120  0.077   0.077    0.128    0.128
## 83     Benev =~  impenv_r 202.104 -0.595  -0.422   -0.408   -0.408
## 95 ipudrst_r ~~  impenv_r 188.678 -0.091  -0.091   -0.128   -0.128
## 93 ipeqopt_r ~~ ipudrst_r 145.176  0.083   0.083    0.113    0.113
## 82     Benev =~ ipudrst_r  71.288  0.388   0.275    0.263    0.263
## 90 iplylfr_r ~~ ipeqopt_r  52.574 -0.038  -0.038   -0.061   -0.061
## 81     Benev =~ ipeqopt_r  26.343  0.224   0.158    0.148    0.148
## 91 iplylfr_r ~~ ipudrst_r  19.302 -0.024  -0.024   -0.042   -0.042
## 87 iphlppl_r ~~ ipeqopt_r  14.457 -0.022  -0.022   -0.036   -0.036
## 88 iphlppl_r ~~ ipudrst_r   5.585  0.014   0.014    0.026    0.026
```




```
## lavaan 0.6-5 ended normally after 105 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         32
##
##   Number of observations                         27310
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             1885.927     558.576
##   Degrees of freedom                           28          28
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 3.376
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                            28331.529   10978.076
##   Degrees of freedom                           50          50
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 2.581
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                   0.934       0.951
```

```
##   Tucker-Lewis Index (TLI)                       0.883       0.913
##
##   Robust Comparative Fit Index (CFI)                         0.936
##   Robust Tucker-Lewis Index (TLI)                            0.887
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -321826.494 -321826.494
##   Loglikelihood unrestricted model (H1)    -320883.531 -320883.531
##
##   Akaike (AIC)                              643716.988  643716.988
##   Bayesian (BIC)                            643979.868  643979.868
##   Sample-size adjusted Bayesian (BIC)       643878.173  643878.173
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.049       0.026
##   90 Percent confidence interval - lower         0.047       0.025
##   90 Percent confidence interval - upper         0.051       0.027
##   P-value RMSEA <= 0.05                          0.728       1.000
##
##   Robust RMSEA                                               0.048
##   90 Percent confidence interval - lower                     0.045
##   90 Percent confidence interval - upper                     0.052
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                           0.020       0.020
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r         1.000                               0.708    0.720
##     iplylfr_r         0.821    0.015   54.522    0.000    0.582    0.646
##   Unive =~
##     ipeqopt_r         1.000                               0.581    0.542
##     ipudrst_r         1.125    0.022   50.124    0.000    0.654    0.626
##     impenv_r          0.955    0.022   43.943    0.000    0.555    0.537
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev ~
##     agea             -0.001    0.000   -4.496    0.000   -0.002   -0.039
##     gndrD             0.230    0.012   18.498    0.000    0.325    0.162
##     eisced2           0.059    0.015    4.064    0.000    0.083    0.038
##     eisced3           0.100    0.015    6.798    0.000    0.141    0.059
##     domicil2          0.007    0.014    0.513    0.608    0.010    0.005
##     domicil3         -0.078    0.020   -3.881    0.000   -0.110   -0.034
```

```
##     domicil4         -0.081    0.019   -4.283    0.000   -0.114   -0.043
##     HDI               5.647    0.217   25.992    0.000    7.970    0.210
##   Unive ~
##     agea              0.002    0.000    7.755    0.000    0.004    0.071
##     gndrD             0.135    0.011   12.457    0.000    0.233    0.116
##     eisced2           0.104    0.013    8.017    0.000    0.178    0.082
##     eisced3           0.226    0.013   17.148    0.000    0.389    0.163
##     domicil2          0.028    0.012    2.342    0.019    0.048    0.023
##     domicil3         -0.077    0.019   -4.015    0.000   -0.133   -0.041
##     domicil4         -0.013    0.017   -0.753    0.452   -0.022   -0.008
##     HDI               2.237    0.195   11.478    0.000    3.850    0.102
##
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##  .Benev ~~
##    .Unive             0.351    0.008   44.595    0.000    0.912    0.912
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -0.389    0.199   -1.955    0.051   -0.389   -0.396
##    .iplylfr_r         0.796    0.171    4.666    0.000    0.796    0.884
##    .ipeqopt_r         2.504    0.178   14.082    0.000    2.504    2.336
##    .ipudrst_r         2.061    0.195   10.546    0.000    2.061    1.974
##    .impenv_r          2.638    0.163   16.138    0.000    2.638    2.554
##    .Benev             0.000                             0.000    0.000
##    .Unive             0.000                             0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.466    0.010   46.116    0.000    0.466    0.482
##    .iplylfr_r         0.472    0.009   51.964    0.000    0.472    0.582
##    .ipeqopt_r         0.811    0.013   60.105    0.000    0.811    0.706
##    .ipudrst_r         0.663    0.012   55.030    0.000    0.663    0.608
##    .impenv_r          0.759    0.013   59.392    0.000    0.759    0.711
##    .Benev             0.464    0.011   40.467    0.000    0.924    0.924
##    .Unive             0.320    0.011   29.527    0.000    0.947    0.947
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.518
##     iplylfr_r         0.418
##     ipeqopt_r         0.294
##     ipudrst_r         0.392
##     impenv_r          0.289
##     Benev             0.076
##     Unive             0.053
##
## $FIT
##                         npar                         fmin
##                       32.000                        0.035
##                        chisq                           df
##                     1885.927                       28.000
##                       pvalue                 chisq.scaled
##                        0.000                      558.576
```

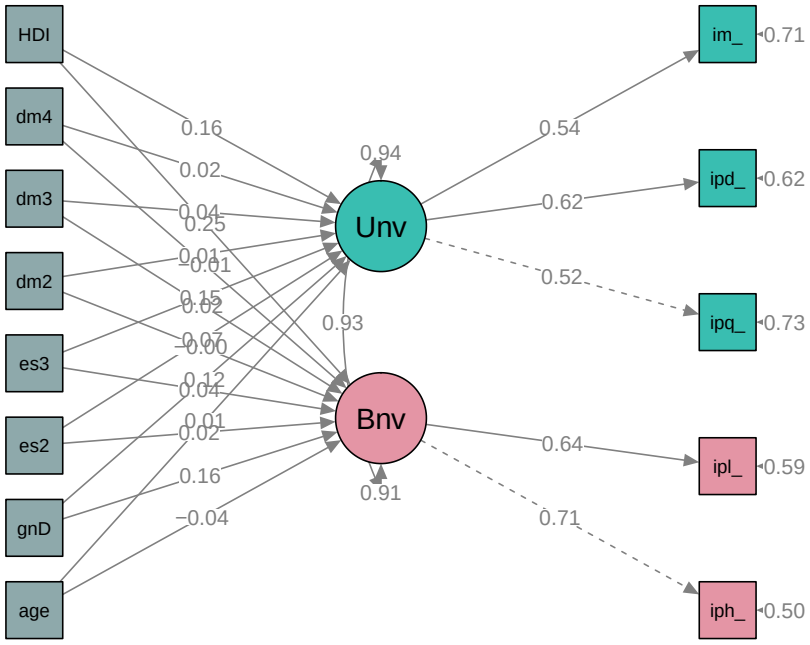
```
##                     df.scaled                  pvalue.scaled
##                        28.000                          0.000
##          chisq.scaling.factor                 baseline.chisq
##                         3.376                      28331.529
##                   baseline.df                baseline.pvalue
##                        50.000                          0.000
##         baseline.chisq.scaled             baseline.df.scaled
##                     10978.076                         50.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                          2.581
##                           cfi                            tli
##                         0.934                          0.883
##                     cfi.scaled                     tli.scaled
##                         0.951                          0.913
##                     cfi.robust                     tli.robust
##                         0.936                          0.887
##                          logl             unrestricted.logl
##                    -321826.494                    -320883.531
##                           aic                            bic
##                     643716.988                     643979.868
##                         ntotal                         bic2
##                      27310.000                     643878.173
##                         rmsea                 rmsea.ci.lower
##                         0.049                          0.047
##                rmsea.ci.upper                   rmsea.pvalue
##                         0.051                          0.728
##                   rmsea.scaled          rmsea.ci.lower.scaled
##                         0.026                          0.025
##          rmsea.ci.upper.scaled            rmsea.pvalue.scaled
##                         0.027                          1.000
##                   rmsea.robust          rmsea.ci.lower.robust
##                         0.048                          0.045
##          rmsea.ci.upper.robust            rmsea.pvalue.robust
##                         0.052                             NA
##                          srmr
##                         0.020
##
## $PE
##          lhs op       rhs exo           est           se          z
## 1      Benev =~ iphlppl_r   0  1.000000e+00 0.0000000000         NA
## 2      Benev =~ iplylfr_r   0  8.212705e-01 0.0150630937 54.5220327
## 3      Unive =~ ipeqopt_r   0  1.000000e+00 0.0000000000         NA
## 4      Unive =~ ipudrst_r   0  1.124699e+00 0.0224381569 50.1243813
## 5      Unive =~  impenv_r   0  9.552540e-01 0.0217382832 43.9433953
## 6      Benev ~~     Unive   0  3.513318e-01 0.0078782936 44.5949060
## 7      Benev  ~      agea   0 -1.492212e-03 0.0003318774 -4.4962730
## 8      Benev  ~     gndrD   0  2.300891e-01 0.0124384293 18.4982434
## 9      Benev  ~   eisced2   0  5.903708e-02 0.0145273966  4.0638446
## 10     Benev  ~   eisced3   0  9.981064e-02 0.0146833068  6.7975587
## 11     Benev  ~  domicil2   0  7.163943e-03 0.0139516723  0.5134827
## 12     Benev  ~  domicil3   0 -7.818198e-02 0.0201446915 -3.8810216
## 13     Benev  ~  domicil4   0 -8.099094e-02 0.0189099366 -4.2829833
## 14     Benev  ~       HDI   0  5.646678e+00 0.2172479790 25.9918565
## 15     Unive  ~      agea   0  2.216308e-03 0.0002857977  7.7548136
```

```
## 16     Unive  ~     gndrD   0  1.353487e-01 0.0108649012 12.4574279
## 17     Unive  ~   eisced2   0  1.035532e-01 0.0129162107  8.0173053
## 18     Unive  ~   eisced3   0  2.259937e-01 0.0131786417 17.1484806
## 19     Unive  ~  domicil2   0  2.791937e-02 0.0119186753  2.3424892
## 20     Unive  ~  domicil3   0 -7.745455e-02 0.0192896345 -4.0153456
## 21     Unive  ~  domicil4   0 -1.302709e-02 0.0173062960 -0.7527369
## 22     Unive  ~       HDI   0  2.237061e+00 0.1948922118 11.4784538
## 23 iphlppl_r ~~ iphlppl_r   0  4.664635e-01 0.0101149473 46.1162577
## 24 iplylfr_r ~~ iplylfr_r   0  4.720567e-01 0.0090843421 51.9637760
## 25 ipeqopt_r ~~ ipeqopt_r   0  8.113396e-01 0.0134986933 60.1050442
## 26 ipudrst_r ~~ ipudrst_r   0  6.627924e-01 0.0120441521 55.0302277
## 27  impenv_r ~~  impenv_r   0  7.585563e-01 0.0127720968 59.3916816
## 28     Benev ~~     Benev   0  4.637099e-01 0.0114590916 40.4665529
## 29     Unive ~~     Unive   0  3.198393e-01 0.0108322147 29.5266758
## 30      agea ~~      agea   1  3.427142e+02 0.0000000000         NA
## 31      agea ~~     gndrD   1  3.514386e-01 0.0000000000         NA
## 32      agea ~~   eisced2   1 -8.641592e-01 0.0000000000         NA
## 33      agea ~~   eisced3   1 -5.996190e-01 0.0000000000         NA
## 34      agea ~~  domicil2   1 -1.137346e-01 0.0000000000         NA
## 35      agea ~~  domicil3   1  1.829517e-02 0.0000000000         NA
## 36      agea ~~  domicil4   1 -3.808200e-01 0.0000000000         NA
## 37      agea ~~       HDI   1  1.074974e-02 0.0000000000         NA
## 38     gndrD ~~     gndrD   1  2.495591e-01 0.0000000000         NA
## 39     gndrD ~~   eisced2   1  1.601448e-03 0.0000000000         NA
## 40     gndrD ~~   eisced3   1  1.828659e-03 0.0000000000         NA
## 41     gndrD ~~  domicil2   1  4.841410e-03 0.0000000000         NA
## 42     gndrD ~~  domicil3   1 -1.962916e-03 0.0000000000         NA
## 43     gndrD ~~  domicil4   1  5.687496e-04 0.0000000000         NA
## 44     gndrD ~~       HDI   1 -4.143478e-04 0.0000000000         NA
## 45   eisced2 ~~   eisced2   1  2.117499e-01 0.0000000000         NA
## 46   eisced2 ~~   eisced3   1 -6.869942e-02 0.0000000000         NA
## 47   eisced2 ~~  domicil2   1  4.305092e-03 0.0000000000         NA
## 48   eisced2 ~~  domicil3   1 -5.878843e-07 0.0000000000         NA
## 49   eisced2 ~~  domicil4   1  1.699807e-03 0.0000000000         NA
## 50   eisced2 ~~       HDI   1 -1.290770e-03 0.0000000000         NA
## 51   eisced3 ~~   eisced3   1  1.747430e-01 0.0000000000         NA
## 52   eisced3 ~~  domicil2   1 -4.430363e-03 0.0000000000         NA
## 53   eisced3 ~~  domicil3   1  7.532168e-03 0.0000000000         NA
## 54   eisced3 ~~  domicil4   1  1.751050e-02 0.0000000000         NA
## 55   eisced3 ~~       HDI   1  1.084568e-03 0.0000000000         NA
## 56  domicil2 ~~  domicil2   1  2.196542e-01 0.0000000000         NA
## 57  domicil2 ~~  domicil3   1 -3.463694e-02 0.0000000000         NA
## 58  domicil2 ~~  domicil4   1 -5.555368e-02 0.0000000000         NA
## 59  domicil2 ~~       HDI   1 -1.246387e-05 0.0000000000         NA
## 60  domicil3 ~~  domicil3   1  9.501091e-02 0.0000000000         NA
## 61  domicil3 ~~  domicil4   1 -1.812802e-02 0.0000000000         NA
## 62  domicil3 ~~       HDI   1  9.243921e-04 0.0000000000         NA
## 63  domicil4 ~~  domicil4   1  1.414393e-01 0.0000000000         NA
## 64  domicil4 ~~       HDI   1 -1.005859e-03 0.0000000000         NA
## 65       HDI ~~       HDI   1  6.960898e-04 0.0000000000         NA
## 66 iphlppl_r ~1             0 -3.893677e-01 0.1991188025 -1.9554544
## 67 iplylfr_r ~1             0  7.955299e-01 0.1705058707  4.6657036
## 68 ipeqopt_r ~1             0  2.503974e+00 0.1778180895 14.0816601
## 69 ipudrst_r ~1             0  2.060699e+00 0.1954040328 10.5458358
```

```
## 70  impenv_r ~1             0  2.638010e+00 0.1634639589 16.1381781
## 71      agea ~1             1  5.015694e+01 0.0000000000         NA
## 72     gndrD ~1             1  5.209922e-01 0.0000000000         NA
## 73   eisced2 ~1             1  3.044242e-01 0.0000000000         NA
## 74   eisced3 ~1             1  2.256703e-01 0.0000000000         NA
## 75  domicil2 ~1             1  3.258001e-01 0.0000000000         NA
## 76  domicil3 ~1             1  1.063136e-01 0.0000000000         NA
## 77  domicil4 ~1             1  1.705148e-01 0.0000000000         NA
## 78       HDI ~1             1  9.089486e-01 0.0000000000         NA
## 79     Benev ~1             0  0.000000e+00 0.0000000000         NA
## 80     Unive ~1             0  0.000000e+00 0.0000000000         NA
## 81 iphlppl_r r2 iphlppl_r   0  5.183105e-01           NA         NA
## 82 iplylfr_r r2 iplylfr_r   0  4.176446e-01           NA         NA
## 83 ipeqopt_r r2 ipeqopt_r   0  2.938442e-01           NA         NA
## 84 ipudrst_r r2 ipudrst_r   0  3.918527e-01           NA         NA
## 85  impenv_r r2  impenv_r   0  2.888301e-01           NA         NA
## 86     Benev r2     Benev   0  7.614048e-02           NA         NA
## 87     Unive r2     Unive   0  5.264520e-02           NA         NA
##          pvalue        std.lv       std.all       std.nox
## 1            NA  7.084680e-01  7.199378e-01  7.199378e-01
## 2  0.000000e+00  5.818438e-01  6.462543e-01  6.462543e-01
## 3            NA  5.810447e-01  5.420739e-01  5.420739e-01
## 4  0.000000e+00  6.535003e-01  6.259814e-01  6.259814e-01
## 5  0.000000e+00  5.550453e-01  5.374291e-01  5.374291e-01
## 6  0.000000e+00  9.122803e-01  9.122803e-01  9.122803e-01
## 7  6.915492e-06 -2.106251e-03 -3.899206e-02 -2.106251e-03
## 8  0.000000e+00  3.247699e-01  1.622417e-01  3.247699e-01
## 9  4.827097e-05  8.333063e-02  3.834566e-02  8.333063e-02
## 10 1.064060e-11  1.408824e-01  5.889203e-02  1.408824e-01
## 11 6.076137e-01  1.011188e-02  4.739163e-03  1.011188e-02
## 12 1.040186e-04 -1.103536e-01 -3.401521e-02 -1.103536e-01
## 13 1.844040e-05 -1.143184e-01 -4.299336e-02 -1.143184e-01
## 14 0.000000e+00  7.970266e+00  2.102836e-01  7.970266e+00
## 15 8.881784e-15  3.814350e-03  7.061331e-02  3.814350e-03
## 16 0.000000e+00  2.329403e-01  1.163674e-01  2.329403e-01
## 17 1.110223e-15  1.782190e-01  8.200976e-02  1.782190e-01
## 18 0.000000e+00  3.889437e-01  1.625873e-01  3.889437e-01
## 19 1.915559e-02  4.805029e-02  2.251986e-02  4.805029e-02
## 20 5.935875e-05 -1.333022e-01 -4.108886e-02 -1.333022e-01
## 21 4.516080e-01 -2.242011e-02 -8.431850e-03 -2.242011e-02
## 22 0.000000e+00  3.850067e+00  1.015783e-01  3.850067e+00
## 23 0.000000e+00  4.664635e-01  4.816895e-01  4.816895e-01
## 24 0.000000e+00  4.720567e-01  5.823554e-01  5.823554e-01
## 25 0.000000e+00  8.113396e-01  7.061558e-01  7.061558e-01
## 26 0.000000e+00  6.627924e-01  6.081473e-01  6.081473e-01
## 27 0.000000e+00  7.585563e-01  7.111699e-01  7.111699e-01
## 28 0.000000e+00  9.238595e-01  9.238595e-01  9.238595e-01
## 29 0.000000e+00  9.473548e-01  9.473548e-01  9.473548e-01
## 30           NA  3.427142e+02  1.000000e+00  3.427142e+02
## 31           NA  3.514386e-01  3.800115e-02  3.514386e-01
## 32           NA -8.641592e-01 -1.014416e-01 -8.641592e-01
## 33           NA -5.996190e-01 -7.748354e-02 -5.996190e-01
## 34           NA -1.137346e-01 -1.310861e-02 -1.137346e-01
## 35           NA  1.829517e-02  3.206149e-03  1.829517e-02
```

```
## 36           NA -3.808200e-01 -5.469765e-02 -3.808200e-01
## 37           NA  1.074974e-02  2.200894e-02  1.074974e-02
## 38           NA  2.495591e-01  1.000000e+00  2.495591e-01
## 39           NA  1.601448e-03  6.966499e-03  1.601448e-03
## 40           NA  1.828659e-03  8.756814e-03  1.828659e-03
## 41           NA  4.841410e-03  2.067833e-02  4.841410e-03
## 42           NA -1.962916e-03 -1.274759e-02 -1.962916e-03
## 43           NA  5.687496e-04  3.027257e-03  5.687496e-04
## 44           NA -4.143478e-04 -3.143734e-02 -4.143478e-04
## 45           NA  2.117499e-01  1.000000e+00  2.117499e-01
## 46           NA -6.869942e-02 -3.571425e-01 -6.869942e-02
## 47           NA  4.305092e-03  1.996187e-02  4.305092e-03
## 48           NA -5.878843e-07 -4.144704e-06 -5.878843e-07
## 49           NA  1.699807e-03  9.822065e-03  1.699807e-03
## 50           NA -1.290770e-03 -1.063175e-01 -1.290770e-03
## 51           NA  1.747430e-01  1.000000e+00  1.747430e-01
## 52           NA -4.430363e-03 -2.261360e-02 -4.430363e-03
## 53           NA  7.532168e-03  5.845657e-02  7.532168e-03
## 54           NA  1.751050e-02  1.113816e-01  1.751050e-02
## 55           NA  1.084568e-03  9.833867e-02  1.084568e-03
## 56           NA  2.196542e-01  1.000000e+00  2.196542e-01
## 57           NA -3.463694e-02 -2.397635e-01 -3.463694e-02
## 58           NA -5.555368e-02 -3.151795e-01 -5.555368e-02
## 59           NA -1.246387e-05 -1.007976e-03 -1.246387e-05
## 60           NA  9.501091e-02  1.000000e+00  9.501091e-02
## 61           NA -1.812802e-02 -1.563790e-01 -1.812802e-02
## 62           NA  9.243921e-04  1.136676e-01  9.243921e-04
## 63           NA  1.414393e-01  1.000000e+00  1.414393e-01
## 64           NA -1.005859e-03 -1.013723e-01 -1.005859e-03
## 65           NA  6.960898e-04  1.000000e+00  6.960898e-04
## 66 5.052946e-02 -3.893677e-01 -3.956715e-01 -3.956715e-01
## 67 3.075627e-06  7.955299e-01  8.835954e-01  8.835954e-01
## 68 0.000000e+00  2.503974e+00  2.336032e+00  2.336032e+00
## 69 0.000000e+00  2.060699e+00  1.973923e+00  1.973923e+00
## 70 0.000000e+00  2.638010e+00  2.554285e+00  2.554285e+00
## 71           NA  5.015694e+01  2.709350e+00  5.015694e+01
## 72           NA  5.209922e-01  1.042905e+00  5.209922e-01
## 73           NA  3.044242e-01  6.615574e-01  3.044242e-01
## 74           NA  2.256703e-01  5.398517e-01  2.256703e-01
## 75           NA  3.258001e-01  6.951548e-01  3.258001e-01
## 76           NA  1.063136e-01  3.449070e-01  1.063136e-01
## 77           NA  1.705148e-01  4.533952e-01  1.705148e-01
## 78           NA  9.089486e-01  3.445139e+01  9.089486e-01
## 79           NA  0.000000e+00  0.000000e+00  0.000000e+00
## 80           NA  0.000000e+00  0.000000e+00  0.000000e+00
## 81           NA            NA            NA            NA
## 82           NA            NA            NA            NA
## 83           NA            NA            NA            NA
## 84           NA            NA            NA            NA
## 85           NA            NA            NA            NA
## 86           NA            NA            NA            NA
## 87           NA            NA            NA            NA
##
## [1] "ESS round:  9"
```

```
##         chisq        pvalue           cfi           tli         rmsea
##      1687.692         0.000         0.937         0.888         0.047
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.018       617.425         0.000         0.939         0.891
##  rmsea.robust  srmr_bentler
##         0.047         0.018
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 92 iplylfr_r ~~  impenv_r 457.933  0.104   0.104    0.185    0.185
## 93 ipeqopt_r ~~ ipudrst_r 136.020  0.078   0.078    0.107    0.107
## 95 ipudrst_r ~~  impenv_r 111.091 -0.069  -0.069   -0.102   -0.102
## 91 iplylfr_r ~~ ipudrst_r  78.173 -0.047  -0.047   -0.086   -0.086
## 83     Benev =~  impenv_r  69.079 -0.430  -0.294   -0.297   -0.297
## 90 iplylfr_r ~~ ipeqopt_r  65.612 -0.042  -0.042   -0.068   -0.068
## 85     Unive =~ iplylfr_r  54.503  0.448   0.243    0.277    0.277
## 84     Unive =~ iphlppl_r  54.486 -0.544  -0.296   -0.305   -0.305
## 81     Benev =~ ipeqopt_r  45.245  0.364   0.249    0.237    0.237
## 89 iphlppl_r ~~  impenv_r  26.304 -0.028  -0.028   -0.049   -0.049
```




```
## lavaan 0.6-5 ended normally after 117 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         32
##
##   Number of observations                         26525
##
```

```
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             1687.692     617.425
##   Degrees of freedom                               28          28
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 2.733
##     for the Satorra-Bentler correction
##
## Model Test Baseline Model:
##
##   Test statistic                            26486.419   12297.479
##   Degrees of freedom                               50          50
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 2.154
##
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                   0.937       0.952
##   Tucker-Lewis Index (TLI)                      0.888       0.914
##
##   Robust Comparative Fit Index (CFI)                        0.939
##   Robust Tucker-Lewis Index (TLI)                           0.891
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)           -310077.344 -310077.344
##   Loglikelihood unrestricted model (H1)   -309233.498 -309233.498
##
##   Akaike (AIC)                             620218.689  620218.689
##   Bayesian (BIC)                           620480.636  620480.636
##   Sample-size adjusted Bayesian (BIC)      620378.941  620378.941
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                         0.047       0.028
##   90 Percent confidence interval - lower        0.045       0.027
##   90 Percent confidence interval - upper        0.049       0.029
##   P-value RMSEA <= 0.05                         0.990       1.000
##
##   Robust RMSEA                                              0.047
##   90 Percent confidence interval - lower                    0.043
##   90 Percent confidence interval - upper                    0.050
##
## Standardized Root Mean Square Residual:
##
##   SRMR                                          0.018       0.018
##
## Parameter Estimates:
##
##   Information                                 Expected
##   Information saturated (h1) model          Structured
##   Standard errors                Robust.cluster.sem
##
## Latent Variables:
```

```
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev =~
##     iphlppl_r         1.000                              0.684    0.706
##     iplylfr_r         0.823    0.013   61.157    0.000    0.563    0.640
##   Unive =~
##     ipeqopt_r         1.000                              0.544    0.517
##     ipudrst_r         1.170    0.023   51.812    0.000    0.636    0.617
##     impenv_r          0.978    0.021   46.979    0.000    0.532    0.538
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev ~
##     agea             -0.001    0.000   -4.460    0.000   -0.002   -0.037
##     gndrD             0.221    0.011   19.562    0.000    0.323    0.161
##     eisced2           0.034    0.013    2.540    0.011    0.049    0.023
##     eisced3           0.056    0.014    4.081    0.000    0.082    0.035
##     domicil2         -0.000    0.013   -0.014    0.988   -0.000   -0.000
##     domicil3          0.047    0.019    2.499    0.012    0.069    0.022
##     domicil4         -0.015    0.016   -0.910    0.363   -0.022   -0.008
##     HDI               7.045    0.225   31.328    0.000   10.305    0.255
##   Unive ~
##     agea              0.000    0.000    1.482    0.138    0.001    0.013
##     gndrD             0.135    0.009   14.380    0.000    0.249    0.124
##     eisced2           0.083    0.011    7.402    0.000    0.152    0.071
##     eisced3           0.185    0.012   15.812    0.000    0.341    0.145
##     domicil2          0.010    0.011    0.870    0.384    0.018    0.008
##     domicil3          0.068    0.015    4.438    0.000    0.125    0.040
##     domicil4          0.032    0.014    2.323    0.020    0.058    0.022
##     HDI               3.417    0.188   18.145    0.000    6.282    0.155
##
## Covariances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##  .Benev ~~
##    .Unive             0.318    0.007   43.641    0.000    0.928    0.928
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -1.656    0.208   -7.963    0.000   -1.656   -1.710
##    .iplylfr_r        -0.246    0.174   -1.415    0.157   -0.246   -0.280
##    .ipeqopt_r         1.532    0.175    8.770    0.000    1.532    1.456
##    .ipudrst_r         0.812    0.201    4.045    0.000    0.812    0.788
##    .impenv_r          1.787    0.169   10.588    0.000    1.787    1.808
##    .Benev             0.000                              0.000    0.000
##    .Unive             0.000                              0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.470    0.010   49.139    0.000    0.470    0.502
##    .iplylfr_r         0.458    0.008   54.376    0.000    0.458    0.591
##    .ipeqopt_r         0.812    0.012   66.156    0.000    0.812    0.733
##    .ipudrst_r         0.658    0.011   58.313    0.000    0.658    0.619
##    .impenv_r          0.694    0.011   65.694    0.000    0.694    0.711
##    .Benev             0.424    0.010   40.664    0.000    0.907    0.907
##    .Unive             0.278    0.009   30.071    0.000    0.938    0.938
```

```
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.498
##     iplylfr_r         0.409
##     ipeqopt_r         0.267
##     ipudrst_r         0.381
##     impenv_r          0.289
##     Benev             0.093
##     Unive             0.062
##
## $FIT
##                          npar                          fmin
##                        32.000                         0.032
##                         chisq                           df
##                      1687.692                       28.000
##                        pvalue                  chisq.scaled
##                         0.000                       617.425
##                     df.scaled                 pvalue.scaled
##                        28.000                         0.000
##          chisq.scaling.factor                baseline.chisq
##                         2.733                      26486.419
##                   baseline.df              baseline.pvalue
##                        50.000                         0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     12297.479                        50.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         2.154
##                           cfi                           tli
##                         0.937                         0.888
##                     cfi.scaled                    tli.scaled
##                         0.952                         0.914
##                     cfi.robust                    tli.robust
##                         0.939                         0.891
##                          logl              unrestricted.logl
##                    -310077.344                   -309233.498
##                           aic                           bic
##                    620218.689                    620480.636
##                        ntotal                          bic2
##                     26525.000                    620378.941
##                         rmsea                rmsea.ci.lower
##                         0.047                         0.045
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.049                         0.990
##                   rmsea.scaled         rmsea.ci.lower.scaled
##                         0.028                         0.027
##          rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.029                         1.000
##                   rmsea.robust         rmsea.ci.lower.robust
##                         0.047                         0.043
##          rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.050                           NA
##                          srmr
##                         0.018
```

```
##
## $PE
##          lhs op       rhs exo           est           se           z
## 1      Benev =~ iphlppl_r   0  1.000000e+00 0.0000000000          NA
## 2      Benev =~ iplylfr_r   0  8.233074e-01 0.0134621176 61.15734979
## 3      Unive =~ ipeqopt_r   0  1.000000e+00 0.0000000000          NA
## 4      Unive =~ ipudrst_r   0  1.169519e+00 0.0225722565 51.81225131
## 5      Unive =~  impenv_r   0  9.776107e-01 0.0208095030 46.97904956
## 6      Benev ~~     Unive   0  3.183019e-01 0.0072936158 43.64117138
## 7      Benev  ~      agea   0 -1.357156e-03 0.0003043210 -4.45961967
## 8      Benev  ~     gndrD   0  2.208762e-01 0.0112908957 19.56232700
## 9      Benev  ~   eisced2   0  3.364303e-02 0.0132451307  2.54003011
## 10     Benev  ~   eisced3   0  5.638933e-02 0.0138168237  4.08120800
## 11     Benev  ~  domicil2   0 -1.920085e-04 0.0132853457 -0.01445265
## 12     Benev  ~  domicil3   0  4.717010e-02 0.0188725553  2.49940196
## 13     Benev  ~  domicil4   0 -1.475742e-02 0.0162195960 -0.90985145
## 14     Benev  ~       HDI   0  7.044533e+00 0.2248638546 31.32799031
## 15     Unive  ~      agea   0  3.727566e-04 0.0002515222  1.48200297
## 16     Unive  ~     gndrD   0  1.354746e-01 0.0094212292 14.37971363
## 17     Unive  ~   eisced2   0  8.255038e-02 0.0111527370  7.40180462
## 18     Unive  ~   eisced3   0  1.852556e-01 0.0117164044 15.81164516
## 19     Unive  ~  domicil2   0  9.685379e-03 0.0111278955  0.87036937
## 20     Unive  ~  domicil3   0  6.787348e-02 0.0152931233  4.43816964
## 21     Unive  ~  domicil4   0  3.166478e-02 0.0136293340  2.32328133
## 22     Unive  ~       HDI   0  3.417207e+00 0.1883323571 18.14455429
## 23 iphlppl_r ~~ iphlppl_r   0  4.702073e-01 0.0095690167 49.13851952
## 24 iplylfr_r ~~ iplylfr_r   0  4.577693e-01 0.0084186265 54.37577040
## 25 ipeqopt_r ~~ ipeqopt_r   0  8.121905e-01 0.0122769691 66.15561603
## 26 ipudrst_r ~~ ipudrst_r   0  6.584578e-01 0.0112917171 58.31334539
## 27  impenv_r ~~  impenv_r   0  6.942201e-01 0.0105675210 65.69375202
## 28     Benev ~~     Benev   0  4.238901e-01 0.0104241618 40.66419119
## 29     Unive ~~     Unive   0  2.775911e-01 0.0092312187 30.07090530
## 30      agea ~~      agea   1  3.512025e+02 0.0000000000          NA
## 31      agea ~~     gndrD   1  3.753336e-01 0.0000000000          NA
## 32      agea ~~   eisced2   1 -7.056186e-01 0.0000000000          NA
## 33      agea ~~   eisced3   1 -6.766041e-01 0.0000000000          NA
## 34      agea ~~  domicil2   1 -2.465282e-02 0.0000000000          NA
## 35      agea ~~  domicil3   1  1.011899e-01 0.0000000000          NA
## 36      agea ~~  domicil4   1 -3.280675e-01 0.0000000000          NA
## 37      agea ~~       HDI   1 -5.391844e-03 0.0000000000          NA
## 38     gndrD ~~     gndrD   1  2.488967e-01 0.0000000000          NA
## 39     gndrD ~~   eisced2   1  2.946780e-03 0.0000000000          NA
## 40     gndrD ~~   eisced3   1  1.490203e-03 0.0000000000          NA
## 41     gndrD ~~  domicil2   1  6.028328e-03 0.0000000000          NA
## 42     gndrD ~~  domicil3   1  3.920998e-04 0.0000000000          NA
## 43     gndrD ~~  domicil4   1  1.157523e-03 0.0000000000          NA
## 44     gndrD ~~       HDI   1 -5.210685e-04 0.0000000000          NA
## 45   eisced2 ~~   eisced2   1  2.161873e-01 0.0000000000          NA
## 46   eisced2 ~~   eisced3   1 -7.523850e-02 0.0000000000          NA
## 47   eisced2 ~~  domicil2   1  6.072798e-03 0.0000000000          NA
## 48   eisced2 ~~  domicil3   1 -1.758815e-03 0.0000000000          NA
## 49   eisced2 ~~  domicil4   1  3.915938e-03 0.0000000000          NA
## 50   eisced2 ~~       HDI   1 -1.109088e-03 0.0000000000          NA
## 51   eisced3 ~~   eisced3   1  1.813597e-01 0.0000000000          NA
```

```
## 52   eisced3 ~~  domicil2   1 -3.350745e-03 0.0000000000          NA
## 53   eisced3 ~~  domicil3   1  9.776459e-03 0.0000000000          NA
## 54   eisced3 ~~  domicil4   1  1.321128e-02 0.0000000000          NA
## 55   eisced3 ~~       HDI   1  9.247940e-04 0.0000000000          NA
## 56  domicil2 ~~  domicil2   1  2.168749e-01 0.0000000000          NA
## 57  domicil2 ~~  domicil3   1 -3.637234e-02 0.0000000000          NA
## 58  domicil2 ~~  domicil4   1 -5.640179e-02 0.0000000000          NA
## 59  domicil2 ~~       HDI   1 -2.078426e-04 0.0000000000          NA
## 60  domicil3 ~~  domicil3   1  1.012966e-01 0.0000000000          NA
## 61  domicil3 ~~  domicil4   1 -2.028695e-02 0.0000000000          NA
## 62  domicil3 ~~       HDI   1  8.963800e-04 0.0000000000          NA
## 63  domicil4 ~~  domicil4   1  1.459069e-01 0.0000000000          NA
## 64  domicil4 ~~       HDI   1 -1.068151e-03 0.0000000000          NA
## 65       HDI ~~       HDI   1  6.101580e-04 0.0000000000          NA
## 66 iphlppl_r ~1             0 -1.655548e+00 0.2079028233 -7.96308595
## 67 iplylfr_r ~1             0 -2.463481e-01 0.1740897325 -1.41506395
## 68 ipeqopt_r ~1             0  1.532450e+00 0.1747365475  8.77006240
## 69 ipudrst_r ~1             0  8.121212e-01 0.2007840175  4.04475032
## 70  impenv_r ~1             0  1.787010e+00 0.1687821547 10.58767131
## 71      agea ~1             1  5.093217e+01 0.0000000000          NA
## 72     gndrD ~1             1  5.332113e-01 0.0000000000          NA
## 73   eisced2 ~1             1  3.161185e-01 0.0000000000          NA
## 74   eisced3 ~1             1  2.380076e-01 0.0000000000          NA
## 75  domicil2 ~1             1  3.179977e-01 0.0000000000          NA
## 76  domicil3 ~1             1  1.143794e-01 0.0000000000          NA
## 77  domicil4 ~1             1  1.773657e-01 0.0000000000          NA
## 78       HDI ~1             1  9.125401e-01 0.0000000000          NA
## 79     Benev ~1             0  0.000000e+00 0.0000000000          NA
## 80     Unive ~1             0  0.000000e+00 0.0000000000          NA
## 81 iphlppl_r r2 iphlppl_r   0  4.984538e-01           NA          NA
## 82 iplylfr_r r2 iplylfr_r   0  4.089693e-01           NA          NA
## 83 ipeqopt_r r2 ipeqopt_r   0  2.670253e-01           NA          NA
## 84 ipudrst_r r2 ipudrst_r   0  3.806601e-01           NA          NA
## 85  impenv_r r2  impenv_r   0  2.894392e-01           NA          NA
## 86     Benev r2     Benev   0  9.291090e-02           NA          NA
## 87     Unive r2     Unive   0  6.182436e-02           NA          NA
##          pvalue        std.lv       std.all       std.nox
## 1            NA  6.835994e-01  0.7060126007  7.060126e-01
## 2  0.000000e+00  5.628125e-01  0.6395071096  6.395071e-01
## 3            NA  5.439521e-01  0.5167449438  5.167449e-01
## 4  0.000000e+00  6.361626e-01  0.6169765928  6.169766e-01
## 5  0.000000e+00  5.317734e-01  0.5379955254  5.379955e-01
## 6  0.000000e+00  9.279186e-01  0.9279185740  9.279186e-01
## 7  8.210522e-06 -1.985309e-03 -0.0372054805 -1.985309e-03
## 8  0.000000e+00  3.231077e-01  0.1611969360  3.231077e-01
## 9  1.108429e-02  4.921454e-02  0.0228827667  4.921454e-02
## 10 4.480224e-05  8.248886e-02  0.0351289935  8.248886e-02
## 11 9.884689e-01 -2.808786e-04 -0.0001308047 -2.808786e-04
## 12 1.244031e-02  6.900255e-02  0.0219615320  6.900255e-02
## 13 3.629009e-01 -2.158782e-02 -0.0082460648 -2.158782e-02
## 14 0.000000e+00  1.030506e+01  0.2545491711  1.030506e+01
## 15 1.383395e-01  6.852746e-04  0.0128423190  6.852746e-04
## 16 0.000000e+00  2.490561e-01  0.1242529326  2.490561e-01
## 17 1.343370e-13  1.517604e-01  0.0705624204  1.517604e-01
```

```
## 18 0.000000e+00  3.405734e-01  0.1450377812  3.405734e-01
## 19 3.840986e-01  1.780557e-02  0.0082920238  1.780557e-02
## 20 9.072710e-06  1.247784e-01  0.0397133825  1.247784e-01
## 21 2.016404e-02  5.821243e-02  0.0222358445  5.821243e-02
## 22 0.000000e+00  6.282183e+00  0.1551785603  6.282183e+00
## 23 0.000000e+00  4.702073e-01  0.5015462077  5.015462e-01
## 24 0.000000e+00  4.577693e-01  0.5910306567  5.910307e-01
## 25 0.000000e+00  8.121905e-01  0.7329746631  7.329747e-01
## 26 0.000000e+00  6.584578e-01  0.6193398840  6.193399e-01
## 27 0.000000e+00  6.942201e-01  0.7105608147  7.105608e-01
## 28 0.000000e+00  9.070891e-01  0.9070890997  9.070891e-01
## 29 0.000000e+00  9.381756e-01  0.9381756410  9.381756e-01
## 30           NA  3.512025e+02  1.0000000000  3.512025e+02
## 31           NA  3.753336e-01  0.0401447846  3.753336e-01
## 32           NA -7.056186e-01 -0.0809796973 -7.056186e-01
## 33           NA -6.766041e-01 -0.0847784376 -6.766041e-01
## 34           NA -2.465282e-02 -0.0028247707 -2.465282e-02
## 35           NA  1.011899e-01  0.0169652681  1.011899e-01
## 36           NA -3.280675e-01 -0.0458296442 -3.280675e-01
## 37           NA -5.391844e-03 -0.0116476235 -5.391844e-03
## 38           NA  2.488967e-01  1.0000000000  2.488967e-01
## 39           NA  2.946780e-03  0.0127034896  2.946780e-03
## 40           NA  1.490203e-03  0.0070139956  1.490203e-03
## 41           NA  6.028328e-03  0.0259467342  6.028328e-03
## 42           NA  3.920998e-04  0.0024693894  3.920998e-04
## 43           NA  1.157523e-03  0.0060741049  1.157523e-03
## 44           NA -5.210685e-04 -0.0422828331 -5.210685e-04
## 45           NA  2.161873e-01  1.0000000000  2.161873e-01
## 46           NA -7.523850e-02 -0.3799746527 -7.523850e-02
## 47           NA  6.072798e-03  0.0280458859  6.072798e-03
## 48           NA -1.758815e-03 -0.0118852281 -1.758815e-03
## 49           NA  3.915938e-03  0.0220486914  3.915938e-03
## 50           NA -1.109088e-03 -0.0965672158 -1.109088e-03
## 51           NA  1.813597e-01  1.0000000000  1.813597e-01
## 52           NA -3.350745e-03 -0.0168953169 -3.350745e-03
## 53           NA  9.776459e-03  0.0721296240  9.776459e-03
## 54           NA  1.321128e-02  0.0812150351  1.321128e-02
## 55           NA  9.247940e-04  0.0879130603  9.247940e-04
## 56           NA  2.168749e-01  1.0000000000  2.168749e-01
## 57           NA -3.637234e-02 -0.2453969333 -3.637234e-02
## 58           NA -5.640179e-02 -0.3170665299 -5.640179e-02
## 59           NA -2.078426e-04 -0.0180679497 -2.078426e-04
## 60           NA  1.012966e-01  1.0000000000  1.012966e-01
## 61           NA -2.028695e-02 -0.1668712195 -2.028695e-02
## 62           NA  8.963800e-04  0.1140180231  8.963800e-04
## 63           NA  1.459069e-01  1.0000000000  1.459069e-01
## 64           NA -1.068151e-03 -0.1132071138 -1.068151e-03
## 65           NA  6.101580e-04  1.0000000000  6.101580e-04
## 66 1.776357e-15 -1.655548e+00 -1.7098285948 -1.709829e+00
## 67 1.570497e-01 -2.463481e-01 -0.2799180452 -2.799180e-01
## 68 0.000000e+00  1.532450e+00  1.4558008677  1.455801e+00
## 69 5.237892e-05  8.121212e-01  0.7876284764  7.876285e-01
## 70 0.000000e+00  1.787010e+00  1.8079191724  1.807919e+00
## 71           NA  5.093217e+01  2.7177744054  5.093217e+01
```

```
## 72           NA  5.332113e-01  1.0687836358  5.332113e-01
## 73           NA  3.161185e-01  0.6798840274  3.161185e-01
## 74           NA  2.380076e-01  0.5588823466  2.380076e-01
## 75           NA  3.179977e-01  0.6828406186  3.179977e-01
## 76           NA  1.143794e-01  0.3593770897  1.143794e-01
## 77           NA  1.773657e-01  0.4643352516  1.773657e-01
## 78           NA  9.125401e-01 36.9428816993  9.125401e-01
## 79           NA  0.000000e+00  0.0000000000  0.000000e+00
## 80           NA  0.000000e+00  0.0000000000  0.000000e+00
## 81           NA            NA            NA            NA
## 82           NA            NA            NA            NA
## 83           NA            NA            NA            NA
## 84           NA            NA            NA            NA
## 85           NA            NA            NA            NA
## 86           NA            NA            NA            NA
## 87           NA            NA            NA            NA
```

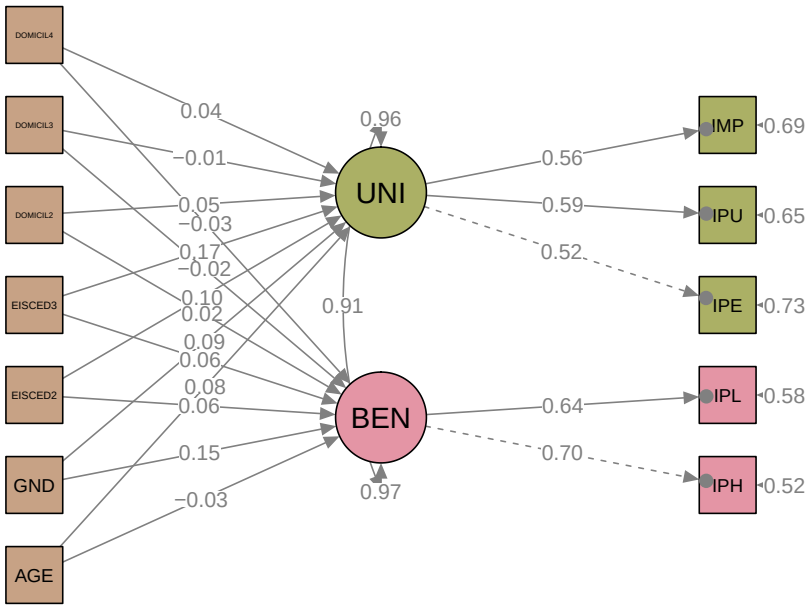
Multilevel MIMIC

```
Mmimicmodel21 <-'
level: 1
Benev_w =~ iphlppl_r + iplylfr_r
Unive_w =~ ipeqopt_r + ipudrst_r + impenv_r
Benev_w ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4
Unive_w ~  agea + gndrD + eisced2 + eisced3 + domicil2 + domicil3 + domicil4
level: 2
Benev_b =~ iphlppl_r + iplylfr_r
Unive_b =~ ipeqopt_r + ipudrst_r + impenv_r
Benev_b ~  HDI
Unive_b ~  HDI
'

for (r in c(8,9)) {
  ds_filtrada2 <- ds_filtradaAll %>% filter(essround == r)
  survey.design2 <- svydesign(ids=~idno, prob=~dweight, data=ds_filtrada2)

  lavaan.Mmimicfit <- lavaan(Mmimicmodel21, data=ds_filtrada2,sampling.weights = "dweight",
                          auto.fix.first=TRUE,  #factor loading of first indicator set to 1
                          int.ov.free=TRUE,     #intercepts not fixed to 0
                          meanstructure=TRUE,   #the means of the observed variables enter the model, n
                          auto.var=TRUE,        #residual variances and variances of exogeneous latent
                          auto.cov.lv.x=TRUE,   #covariances of exogeneous latent variables are include
                          estimator="MLM",
                          cluster = "cntry")
  survey.Mmimicfit <- lavaan.Mmimicfit
  assign(paste0("survey.Mmimicfit",r),survey.Mmimicfit)

  print(paste("ESS round: ", r))
  print(fitMeasures(survey.Mmimicfit, c("chisq","pvalue","cfi", "tli","rmsea", "srmr",
  print(modindices(survey.Mmimicfit,sort=T)[1:10,])
  invisible(semPaths(paste0("C:\\Users\\pamel\\Documents\\ESS\\MPLUS\\mmimic",r,".out"),"model","std","
                     intercepts = FALSE, layout = "tree2", ask =FALSE,
                     groups = "latent", pastel = TRUE, exoCov = FALSE, optimizeLatRes = TRUE, rotation =
```

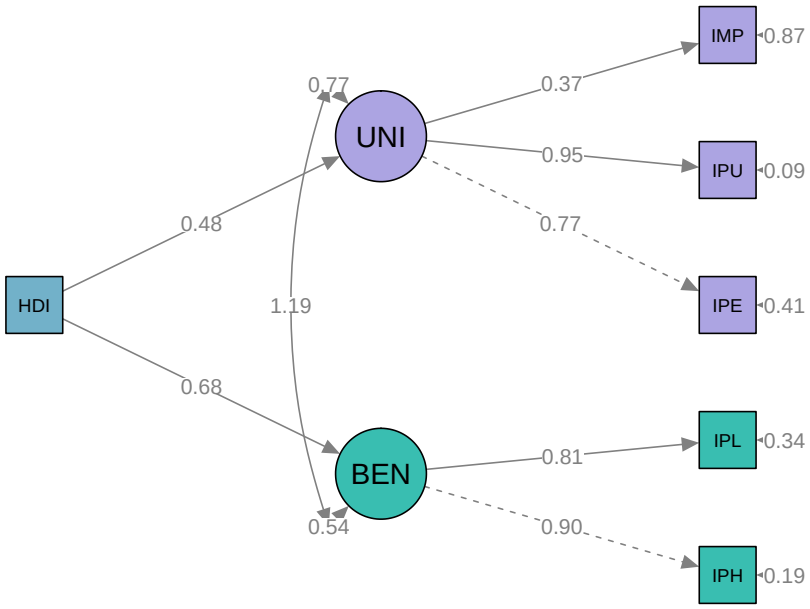
```
  print(summary(survey.Mmimicfit, standardized=T, rsquare=T, fit.measures=T))

}
```

```
## [1] "ESS round:  8"
##         chisq        pvalue           cfi           tli         rmsea
##     10467.254         0.000         0.840         0.718         0.106
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.384      3616.323         0.000         0.841         0.719
##  rmsea.robust
##         0.106
##           lhs op       rhs block group level       mi   epc sepc.lv
## 109   Unive_w  ~   Benev_w     1     1     1 7023.858 0.605   0.793
## 107   Benev_w ~~   Unive_w     1     1     1 7023.854 0.350   0.798
## 108   Benev_w  ~   Unive_w     1     1     1 7023.852 1.052   0.803
## 95    Unive_w =~ iphlppl_r     1     1     1 2501.579 0.576   0.340
## 93    Benev_w =~ ipudrst_r     1     1     1 1694.177 0.353   0.273
## 96    Unive_w =~ iplylfr_r     1     1     1 1648.304 0.427   0.252
## 94    Benev_w =~  impenv_r     1     1     1 1310.158 0.316   0.244
## 103 iplylfr_r ~~  impenv_r     1     1     1  812.959 0.125   0.125
## 99  iphlppl_r ~~ ipudrst_r     1     1     1  764.630 0.129   0.129
## 92    Benev_w =~ ipeqopt_r     1     1     1  732.855 0.239   0.185
##     sepc.all sepc.nox
## 109    0.793    0.793
## 107    0.798    0.798
## 108    0.803    0.803
## 95     0.361    0.361
## 93     0.270    0.270
## 96     0.292    0.292
## 94     0.242    0.242
## 103    0.198    0.198
## 99     0.298    0.298
## 92     0.179    0.179
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mmimic8.out
```

Within


DOMICIL4
DOMICIL3
DOMICIL2
EISCED3
EISCED2
GND
AGE
UNI
BEN
IMP
IPU
IPE
IPL
IPH
0.04
−0.01
0.05
−0.03
0.17
−0.02
0.10
0.02
0.09
0.06
0.08
0.06
0.15
−0.03
0.96
0.91
0.97
0.56
0.59
0.52
0.64
0.70
0.69
0.65
0.73
0.58
0.52

Between




```
## lavaan 0.6-5 ended normally after 399 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         41
##
##                                                   Used       Total
##   Number of observations                          27310       28080
##   Number of clusters [cntry]                         14
##   Sampling weights variable                      dweight
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                            10467.254    3616.323
##   Degrees of freedom                               34          34
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 2.894
##     for the Yuan-Bentler correction (Mplus variant)
##
## Model Test Baseline Model:
##
##   Test statistic                            65249.164   20489.016
##   Degrees of freedom                               60          60
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 3.185
##
```

```
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                    0.840       0.825
##   Tucker-Lewis Index (TLI)                       0.718       0.691
##
##   Robust Comparative Fit Index (CFI)                         0.841
##   Robust Tucker-Lewis Index (TLI)                            0.719
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -384030.994 -384030.994
##   Scaling correction factor                                  8.012
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)    -378797.367 -378797.367
##   Scaling correction factor                                  5.692
##       for the MLR correction
##
##   Akaike (AIC)                              768143.987  768143.987
##   Bayesian (BIC)                            768480.803  768480.803
##   Sample-size adjusted Bayesian (BIC)       768350.506  768350.506
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.106       0.062
##   90 Percent confidence interval - lower         0.104       0.061
##   90 Percent confidence interval - upper         0.108       0.063
##   P-value RMSEA <= 0.05                          0.000       0.000
##
##   Robust RMSEA                                               0.106
##   90 Percent confidence interval - lower                     0.103
##   90 Percent confidence interval - upper                     0.109
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)                0.092       0.092
##   SRMR (between covariance matrix)               0.292       0.292
##
## Parameter Estimates:
##
##   Information                                 Observed
##   Observed information based on                Hessian
##   Standard errors                    Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.773    0.821
##     iplylfr_r         0.604    0.081    7.407    0.000    0.467    0.541
##   Unive_w =~
##     ipeqopt_r         1.000                               0.590    0.570
##     ipudrst_r         1.033    0.041   24.965    0.000    0.609    0.603
```

```
##     impenv_r          0.866    0.039   22.275    0.000    0.511    0.505
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w ~
##     agea            -0.001    0.001   -0.952    0.341   -0.001   -0.017
##     gndrD            0.250    0.019   13.419    0.000    0.323    0.161
##     eisced2          0.085    0.025    3.426    0.001    0.110    0.051
##     eisced3          0.085    0.039    2.179    0.029    0.111    0.047
##     domicil2         0.021    0.017    1.280    0.200    0.028    0.013
##     domicil3        -0.067    0.042   -1.599    0.110   -0.087   -0.027
##     domicil4        -0.051    0.033   -1.531    0.126   -0.066   -0.025
##   Unive_w ~
##     agea             0.002    0.001    2.835    0.005    0.004    0.066
##     gndrD            0.127    0.017    7.397    0.000    0.215    0.108
##     eisced2          0.128    0.022    5.797    0.000    0.216    0.100
##     eisced3          0.232    0.027    8.738    0.000    0.394    0.166
##     domicil2         0.059    0.016    3.758    0.000    0.100    0.047
##     domicil3        -0.038    0.043   -0.882    0.378   -0.064   -0.020
##     domicil4         0.056    0.034    1.624    0.104    0.094    0.035
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        0.000                               0.000    0.000
##    .iplylfr_r        0.000                               0.000    0.000
##    .ipeqopt_r        0.000                               0.000    0.000
##    .ipudrst_r        0.000                               0.000    0.000
##    .impenv_r         0.000                               0.000    0.000
##    .Benev_w          0.000                               0.000    0.000
##    .Unive_w          0.000                               0.000    0.000
##
## Variances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        0.288    0.075    3.816    0.000    0.288    0.325
##    .iplylfr_r        0.526    0.043   12.281    0.000    0.526    0.707
##    .ipeqopt_r        0.724    0.044   16.344    0.000    0.724    0.675
##    .ipudrst_r        0.650    0.022   29.301    0.000    0.650    0.636
##    .impenv_r         0.761    0.057   13.414    0.000    0.761    0.745
##    .Benev_w          0.579    0.096    6.024    0.000    0.969    0.969
##    .Unive_w          0.333    0.031   10.635    0.000    0.956    0.956
##
## R-Square:
##                   Estimate
##     iphlppl_r        0.675
##     iplylfr_r        0.293
##     ipeqopt_r        0.325
##     ipudrst_r        0.364
##     impenv_r         0.255
##     Benev_w          0.031
##     Unive_w          0.044
##
##
## Level 2 [cntry]:
##
```

```
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r         1.000                               0.213    0.886
##     iplylfr_r         0.801    0.241    3.319    0.001    0.171    0.835
##   Unive_b =~
##     ipeqopt_r         1.000                               0.093    0.409
##     ipudrst_r         3.320    2.185    1.519    0.129    0.310    1.484
##     impenv_r          0.711    0.200    3.561    0.000    0.066    0.344
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b ~
##     HDI               5.234    1.799    2.909    0.004   24.552    0.669
##   Unive_b ~
##     HDI               1.293    1.200    1.078    0.281   13.844    0.377
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -0.051    1.686   -0.030    0.976   -0.051   -0.212
##    .iplylfr_r         1.188    1.557    0.763    0.445    1.188    5.811
##    .ipeqopt_r         3.370    1.121    3.005    0.003    3.370   14.753
##    .ipudrst_r         0.468    1.420    0.329    0.742    0.468    2.237
##    .impenv_r          3.757    0.704    5.336    0.000    3.757   19.440
##    .Benev_b           0.000                               0.000    0.000
##    .Unive_b           0.000                               0.000    0.000
##
## Variances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.012    0.016    0.780    0.435    0.012    0.214
##    .iplylfr_r         0.013    0.007    1.771    0.077    0.013    0.302
##    .ipeqopt_r         0.043    0.019    2.284    0.022    0.043    0.833
##    .ipudrst_r        -0.052    0.043   -1.232    0.218   -0.052   -1.202
##    .impenv_r          0.033    0.015    2.208    0.027    0.033    0.882
##    .Benev_b           0.025    0.019    1.297    0.195    0.553    0.553
##    .Unive_b           0.007    0.008    0.966    0.334    0.858    0.858
##
## R-Square:
##                   Estimate
##     iphlppl_r        0.786
##     iplylfr_r        0.698
##     ipeqopt_r        0.167
##     ipudrst_r           NA
##     impenv_r         0.118
##     Benev_b          0.447
##     Unive_b          0.142
##
## $FIT
##                        npar                        fmin
##                      41.000                       3.034
##                       chisq                          df
##                   10467.254                      34.000
##                      pvalue                chisq.scaled
##                       0.000                    3616.323
```

```
##                     df.scaled                 pvalue.scaled
##                        34.000                        0.000
##          chisq.scaling.factor                baseline.chisq
##                         2.894                     65249.164
##                   baseline.df               baseline.pvalue
##                        60.000                        0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                     20489.016                        60.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                         3.185
##                           cfi                           tli
##                         0.840                         0.718
##                    cfi.scaled                    tli.scaled
##                         0.825                         0.691
##                    cfi.robust                    tli.robust
##                         0.841                         0.719
##                          logl             unrestricted.logl
##                    -384030.994                   -378797.367
##                           aic                           bic
##                    768143.987                    768480.803
##                       ntotal                         bic2
##                     27310.000                    768350.506
##             scaling.factor.h1             scaling.factor.h0
##                         5.692                         8.012
##                         rmsea                rmsea.ci.lower
##                         0.106                         0.104
##                rmsea.ci.upper                  rmsea.pvalue
##                         0.108                         0.000
##                   rmsea.scaled         rmsea.ci.lower.scaled
##                         0.062                         0.061
##         rmsea.ci.upper.scaled           rmsea.pvalue.scaled
##                         0.063                         0.000
##                   rmsea.robust         rmsea.ci.lower.robust
##                         0.106                         0.103
##         rmsea.ci.upper.robust           rmsea.pvalue.robust
##                         0.109                            NA
##                          srmr                   srmr_within
##                         0.384                         0.092
##                  srmr_between
##                         0.292
##
## $PE
##           lhs op       rhs block level exo           est           se
## 1     Benev_w =~ iphlppl_r     1     1   0  1.000000e+00 0.0000000000
## 2     Benev_w =~ iplylfr_r     1     1   0  6.036282e-01 0.0814905453
## 3     Unive_w =~ ipeqopt_r     1     1   0  1.000000e+00 0.0000000000
## 4     Unive_w =~ ipudrst_r     1     1   0  1.033090e+00 0.0413809058
## 5     Unive_w =~  impenv_r     1     1   0  8.659143e-01 0.0388736352
## 6     Benev_w  ~      agea     1     1   0 -7.040948e-04 0.0007394515
## 7     Benev_w  ~     gndrD     1     1   0  2.497016e-01 0.0186086418
## 8     Benev_w  ~   eisced2     1     1   0  8.463124e-02 0.0247054075
## 9     Benev_w  ~   eisced3     1     1   0  8.545015e-02 0.0392140193
## 10    Benev_w  ~  domicil2     1     1   0  2.136763e-02 0.0166876347
## 11    Benev_w  ~  domicil3     1     1   0 -6.741775e-02 0.0421635378
```

```
## 12    Benev_w  ~  domicil4     1     1   0 -5.088133e-02 0.0332279452
## 13    Unive_w  ~      agea     1     1   0  2.092843e-03 0.0007383389
## 14    Unive_w  ~     gndrD     1     1   0  1.269405e-01 0.0171603424
## 15    Unive_w  ~   eisced2     1     1   0  1.275957e-01 0.0220098903
## 16    Unive_w  ~   eisced3     1     1   0  2.322812e-01 0.0265822851
## 17    Unive_w  ~  domicil2     1     1   0  5.905689e-02 0.0157164506
## 18    Unive_w  ~  domicil3     1     1   0 -3.791440e-02 0.0429629362
## 19    Unive_w  ~  domicil4     1     1   0  5.574243e-02 0.0343274051
## 20  iphlppl_r ~~ iphlppl_r     1     1   0  2.878310e-01 0.0754298242
## 21  iplylfr_r ~~ iplylfr_r     1     1   0  5.256550e-01 0.0428035803
## 22  ipeqopt_r ~~ ipeqopt_r     1     1   0  7.240216e-01 0.0442978284
## 23  ipudrst_r ~~ ipudrst_r     1     1   0  6.502596e-01 0.0221921732
## 24   impenv_r ~~  impenv_r     1     1   0  7.605434e-01 0.0566970028
## 25    Benev_w ~~   Benev_w     1     1   0  5.787377e-01 0.0960768233
## 26    Unive_w ~~   Unive_w     1     1   0  3.327658e-01 0.0312883471
## 27       agea ~~      agea     1     1   1  3.410479e+02 0.0000000000
## 28       agea ~~     gndrD     1     1   1  2.198374e-01 0.0000000000
## 29       agea ~~   eisced2     1     1   1 -7.871643e-01 0.0000000000
## 30       agea ~~   eisced3     1     1   1 -4.428063e-01 0.0000000000
## 31       agea ~~  domicil2     1     1   1 -1.265644e-01 0.0000000000
## 32       agea ~~  domicil3     1     1   1  1.319128e-02 0.0000000000
## 33       agea ~~  domicil4     1     1   1 -3.595062e-01 0.0000000000
## 34      gndrD ~~     gndrD     1     1   1  2.497038e-01 0.0000000000
## 35      gndrD ~~   eisced2     1     1   1  7.219213e-04 0.0000000000
## 36      gndrD ~~   eisced3     1     1   1  3.103269e-03 0.0000000000
## 37      gndrD ~~  domicil2     1     1   1  4.278976e-03 0.0000000000
## 38      gndrD ~~  domicil3     1     1   1 -2.766908e-03 0.0000000000
## 39      gndrD ~~  domicil4     1     1   1  1.353776e-03 0.0000000000
## 40    eisced2 ~~   eisced2     1     1   1  2.139681e-01 0.0000000000
## 41    eisced2 ~~   eisced3     1     1   1 -7.144008e-02 0.0000000000
## 42    eisced2 ~~  domicil2     1     1   1  5.272074e-03 0.0000000000
## 43    eisced2 ~~  domicil3     1     1   1 -3.777640e-04 0.0000000000
## 44    eisced2 ~~  domicil4     1     1   1  1.122347e-03 0.0000000000
## 45    eisced3 ~~   eisced3     1     1   1  1.772719e-01 0.0000000000
## 46    eisced3 ~~  domicil2     1     1   1 -4.220485e-03 0.0000000000
## 47    eisced3 ~~  domicil3     1     1   1  8.044033e-03 0.0000000000
## 48    eisced3 ~~  domicil4     1     1   1  1.710203e-02 0.0000000000
## 49   domicil2 ~~  domicil2     1     1   1  2.162388e-01 0.0000000000
## 50   domicil2 ~~  domicil3     1     1   1 -3.335124e-02 0.0000000000
## 51   domicil2 ~~  domicil4     1     1   1 -5.284087e-02 0.0000000000
## 52   domicil3 ~~  domicil3     1     1   1  9.433493e-02 0.0000000000
## 53   domicil3 ~~  domicil4     1     1   1 -1.761974e-02 0.0000000000
## 54   domicil4 ~~  domicil4     1     1   1  1.391654e-01 0.0000000000
## 55  iphlppl_r ~1               1     1   0  0.000000e+00 0.0000000000
## 56  iplylfr_r ~1               1     1   0  0.000000e+00 0.0000000000
## 57  ipeqopt_r ~1               1     1   0  0.000000e+00 0.0000000000
## 58  ipudrst_r ~1               1     1   0  0.000000e+00 0.0000000000
## 59   impenv_r ~1               1     1   0  0.000000e+00 0.0000000000
## 60       agea ~1               1     1   1  4.892179e+01 0.0000000000
## 61      gndrD ~1               1     1   1  5.172098e-01 0.0000000000
## 62    eisced2 ~1               1     1   1  3.101794e-01 0.0000000000
## 63    eisced3 ~1               1     1   1  2.303186e-01 0.0000000000
## 64   domicil2 ~1               1     1   1  3.162578e-01 0.0000000000
## 65   domicil3 ~1               1     1   1  1.054559e-01 0.0000000000
```

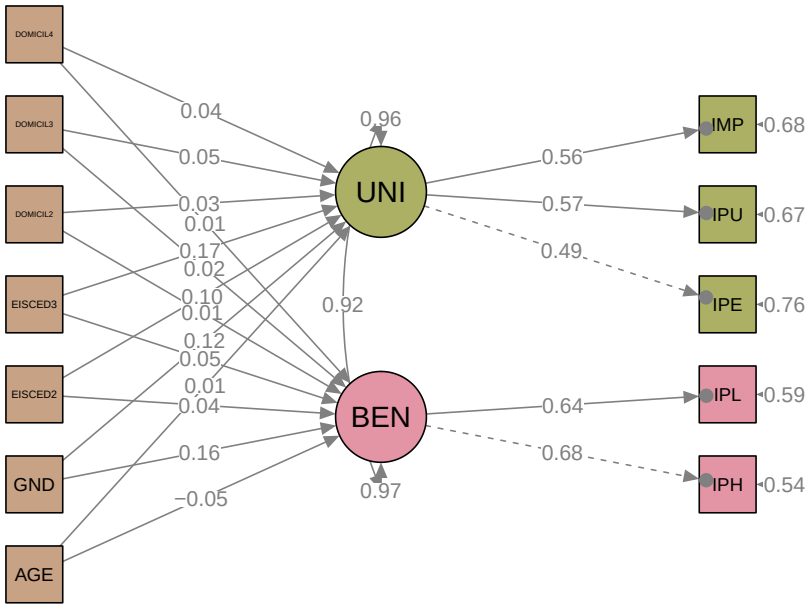
```
## 66   domicil4 ~1              1     1   1  1.670817e-01 0.0000000000
## 67    Benev_w ~1              1     1   0  0.000000e+00 0.0000000000
## 68    Unive_w ~1              1     1   0  0.000000e+00 0.0000000000
## 69    Benev_b =~ iphlppl_r    2     2   0  1.000000e+00 0.0000000000
## 70    Benev_b =~ iplylfr_r    2     2   0  8.010827e-01 0.2413394018
## 71    Unive_b =~ ipeqopt_r    2     2   0  1.000000e+00 0.0000000000
## 72    Unive_b =~ ipudrst_r    2     2   0  3.319544e+00 2.1853684519
## 73    Unive_b =~  impenv_r    2     2   0  7.111338e-01 0.1996777835
## 74    Benev_b  ~       HDI    2     2   0  5.234324e+00 1.7990530260
## 75    Unive_b  ~       HDI    2     2   0  1.293417e+00 1.1998542804
## 76  iphlppl_r ~~ iphlppl_r    2     2   0  1.240679e-02 0.0159023017
## 77  iplylfr_r ~~ iplylfr_r    2     2   0  1.264050e-02 0.0071375331
## 78  ipeqopt_r ~~ ipeqopt_r    2     2   0  4.346026e-02 0.0190268419
## 79  ipudrst_r ~~ ipudrst_r    2     2   0 -5.249873e-02 0.0426193531
## 80   impenv_r ~~  impenv_r    2     2   0  3.292987e-02 0.0149131938
## 81    Benev_b ~~   Benev_b    2     2   0  2.513313e-02 0.0193783492
## 82    Unive_b ~~   Unive_b    2     2   0  7.488826e-03 0.0077536522
## 83        HDI ~~       HDI    2     2   1  7.415306e-04 0.0000000000
## 84  iphlppl_r ~1              2     2   0 -5.099011e-02 1.6855691888
## 85  iplylfr_r ~1              2     2   0  1.188152e+00 1.5570528490
## 86  ipeqopt_r ~1              2     2   0  3.370271e+00 1.1214792593
## 87  ipudrst_r ~1              2     2   0  4.676152e-01 1.4202481502
## 88   impenv_r ~1              2     2   0  3.756692e+00 0.7040404432
## 89        HDI ~1              2     2   1  9.084286e-01 0.0000000000
## 90    Benev_b ~1              2     2   0  0.000000e+00 0.0000000000
## 91    Unive_b ~1              2     2   0  0.000000e+00 0.0000000000
## 92  iphlppl_r r2 iphlppl_r    1     1   0  6.748230e-01           NA
## 93  iplylfr_r r2 iplylfr_r    1     1   0  2.928082e-01           NA
## 94  ipeqopt_r r2 ipeqopt_r    1     1   0  3.246482e-01           NA
## 95  ipudrst_r r2 ipudrst_r    1     1   0  3.635629e-01           NA
## 96   impenv_r r2  impenv_r    1     1   0  2.554712e-01           NA
## 97    Benev_w r2   Benev_w    1     1   0  3.111097e-02           NA
## 98    Unive_w r2   Unive_w    1     1   0  4.389822e-02           NA
## 99  iphlppl_r r2 iphlppl_r    2     2   0  7.855592e-01           NA
## 100 iplylfr_r r2 iplylfr_r    2     2   0  6.976470e-01           NA
## 101 ipeqopt_r r2 ipeqopt_r    2     2   0  1.672623e-01           NA
## 102 ipudrst_r r2 ipudrst_r    2     2   0            NA           NA
## 103  impenv_r r2  impenv_r    2     2   0  1.182113e-01           NA
## 104   Benev_b r2   Benev_b    2     2   0  4.470121e-01           NA
## 105   Unive_b r2   Unive_b    2     2   0  1.421098e-01           NA
##                z       pvalue        std.lv      std.all       std.nox
## 1             NA           NA  7.728654e-01  0.821476125  8.214761e-01
## 2    7.40734055 1.287859e-13  4.665234e-01  0.541117534  5.411175e-01
## 3             NA           NA  5.899528e-01  0.569779116  5.697791e-01
## 4   24.96538126 0.000000e+00  6.094744e-01  0.602961801  6.029618e-01
## 5   22.27510610 0.000000e+00  5.108486e-01  0.505441566  5.054416e-01
## 6   -0.95218520 3.410031e-01 -9.110186e-04 -0.016824219 -9.110186e-04
## 7   13.41858304 0.000000e+00  3.230855e-01  0.161447034  3.230855e-01
## 8    3.42561618 6.134065e-04  1.095032e-01  0.050652563  1.095032e-01
## 9    2.17907137 2.932637e-02  1.105628e-01  0.046550991  1.105628e-01
## 10   1.28044664 2.003881e-01  2.764728e-02  0.012856395  2.764728e-02
## 11  -1.59895848 1.098298e-01 -8.723090e-02 -0.026792093 -8.723090e-02
## 12  -1.53128136 1.256999e-01 -6.583466e-02 -0.024559540 -6.583466e-02
## 13   2.83452954 4.589321e-03  3.547476e-03  0.065512944  3.547476e-03
```

```
## 14   7.39731860 1.389999e-13  2.151706e-01  0.107521571  2.151706e-01
## 15   5.79719628 6.743275e-09  2.162811e-01  0.100044491  2.162811e-01
## 16   8.73819413 0.000000e+00  3.937284e-01  0.165774113  3.937284e-01
## 17   3.75764791 1.715180e-04  1.001044e-01  0.046550044  1.001044e-01
## 18  -0.88249097 3.775114e-01 -6.426684e-02 -0.019738913 -6.426684e-02
## 19   1.62384634 1.044086e-01  9.448626e-02  0.035247980  9.448626e-02
## 20   3.81587832 1.356994e-04  2.878310e-01  0.325176976  3.251770e-01
## 21  12.28063158 0.000000e+00  5.256550e-01  0.707191814  7.071918e-01
## 22  16.34440354 0.000000e+00  7.240216e-01  0.675351759  6.753518e-01
## 23  29.30130440 0.000000e+00  6.502596e-01  0.636437066  6.364371e-01
## 24  13.41417317 0.000000e+00  7.605434e-01  0.744528823  7.445288e-01
## 25   6.02369702 1.704774e-09  9.688890e-01  0.968889029  9.688890e-01
## 26  10.63545406 0.000000e+00  9.561018e-01  0.956101777  9.561018e-01
## 27           NA           NA  3.410479e+02  1.000000000  3.410479e+02
## 28           NA           NA  2.198374e-01  0.023822173  2.198374e-01
## 29           NA           NA -7.871643e-01 -0.092147415 -7.871643e-01
## 30           NA           NA -4.428063e-01 -0.056949004 -4.428063e-01
## 31           NA           NA -1.265644e-01 -0.014737949 -1.265644e-01
## 32           NA           NA  1.319128e-02  0.002325642  1.319128e-02
## 33           NA           NA -3.595062e-01 -0.052183487 -3.595062e-01
## 34           NA           NA  2.497038e-01  1.000000000  2.497038e-01
## 35           NA           NA  7.219213e-04  0.003123221  7.219213e-04
## 36           NA           NA  3.103269e-03  0.014749824  3.103269e-03
## 37           NA           NA  4.278976e-03  0.018414523  4.278976e-03
## 38           NA           NA -2.766908e-03 -0.018027930 -2.766908e-03
## 39           NA           NA  1.353776e-03  0.007262207  1.353776e-03
## 40           NA           NA  2.139681e-01  1.000000000  2.139681e-01
## 41           NA           NA -7.144008e-02 -0.366815252 -7.144008e-02
## 42           NA           NA  5.272074e-03  0.024509820  5.272074e-03
## 43           NA           NA -3.777640e-04 -0.002658947 -3.777640e-04
## 44           NA           NA  1.122347e-03  0.006504097  1.122347e-03
## 45           NA           NA  1.772719e-01  1.000000000  1.772719e-01
## 46           NA           NA -4.220485e-03 -0.021556367 -4.220485e-03
## 47           NA           NA  8.044033e-03  0.062203894  8.044033e-03
## 48           NA           NA  1.710203e-02  0.108883492  1.710203e-02
## 49           NA           NA  2.162388e-01  1.000000000  2.162388e-01
## 50           NA           NA -3.335124e-02 -0.233511848 -3.335124e-02
## 51           NA           NA -5.284087e-02 -0.304605388 -5.284087e-02
## 52           NA           NA  9.433493e-02  1.000000000  9.433493e-02
## 53           NA           NA -1.761974e-02 -0.153779230 -1.761974e-02
## 54           NA           NA  1.391654e-01  1.000000000  1.391654e-01
## 55           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 56           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 57           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 58           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 59           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 60           NA           NA  4.892179e+01  2.649077414  4.892179e+01
## 61           NA           NA  5.172098e-01  1.035032915  5.172098e-01
## 62           NA           NA  3.101794e-01  0.670561196  3.101794e-01
## 63           NA           NA  2.303186e-01  0.547027257  2.303186e-01
## 64           NA           NA  3.162578e-01  0.680102563  3.162578e-01
## 65           NA           NA  1.054559e-01  0.343347991  1.054559e-01
## 66           NA           NA  1.670817e-01  0.447881548  1.670817e-01
## 67           NA           NA  0.000000e+00  0.000000000  0.000000e+00
```

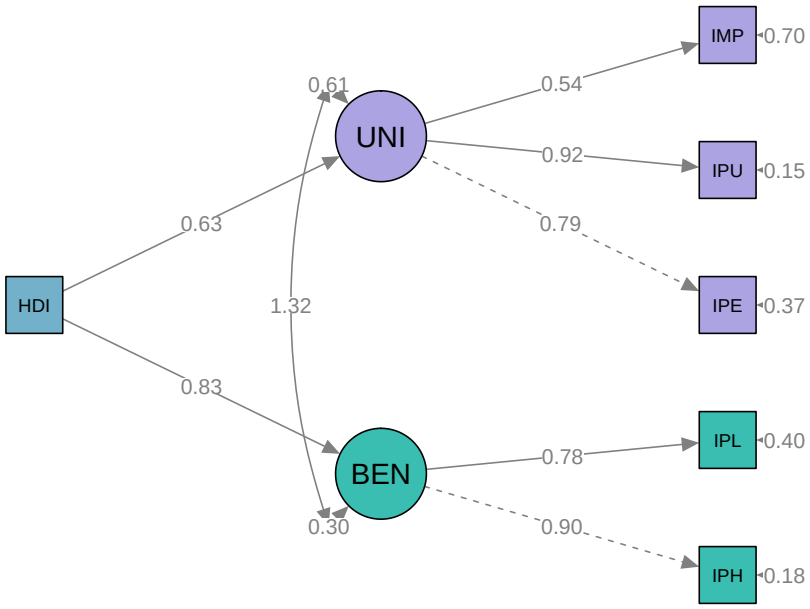
```
## 68           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 69           NA           NA  2.131893e-01  0.886317787  8.863178e-01
## 70   3.31931987 9.023700e-04  1.707823e-01  0.835252648  8.352526e-01
## 71           NA           NA  9.343100e-02  0.408977085  4.089771e-01
## 72   1.51898589 1.287660e-01  3.101483e-01  1.483755238  1.483755e+00
## 73   3.56140673 3.688732e-04  6.644194e-02  0.343818749  3.438187e-01
## 74   2.90948849 3.620207e-03  2.455247e+01  0.668589669  2.455247e+01
## 75   1.07797805 2.810436e-01  1.384355e+01  0.376974489  1.384355e+01
## 76   0.78018831 4.352800e-01  1.240679e-02  0.214440780  2.144408e-01
## 77   1.77098995 7.656237e-02  1.264050e-02  0.302353014  3.023530e-01
## 78   2.28415515 2.236241e-02  4.346026e-02  0.832737744  8.327377e-01
## 79  -1.23180488 2.180220e-01 -5.249873e-02 -1.201529606 -1.201530e+00
## 80   2.20810333 2.723707e-02  3.292987e-02  0.881788668  8.817887e-01
## 81   1.29696958 1.946417e-01  5.529879e-01  0.552987854  5.529879e-01
## 82   0.96584496 3.341218e-01  8.578902e-01  0.857890234  8.578902e-01
## 83           NA           NA  7.415306e-04  1.000000000  7.415306e-04
## 84  -0.03025098 9.758669e-01 -5.099011e-02 -0.211987356 -2.119874e-01
## 85   0.76307744 4.454172e-01  1.188152e+00  5.810948195  5.810948e+00
## 86   3.00520138 2.654051e-03  3.370271e+00 14.752743649  1.475274e+01
## 87   0.32924897 7.419675e-01  4.676152e-01  2.237079952  2.237080e+00
## 88   5.33590434 9.506952e-08  3.756692e+00 19.439848317  1.943985e+01
## 89           NA           NA  9.084286e-01 33.360015421  9.084286e-01
## 90           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 91           NA           NA  0.000000e+00  0.000000000  0.000000e+00
## 92           NA           NA            NA           NA            NA
## 93           NA           NA            NA           NA            NA
## 94           NA           NA            NA           NA            NA
## 95           NA           NA            NA           NA            NA
## 96           NA           NA            NA           NA            NA
## 97           NA           NA            NA           NA            NA
## 98           NA           NA            NA           NA            NA
## 99           NA           NA            NA           NA            NA
## 100          NA           NA            NA           NA            NA
## 101          NA           NA            NA           NA            NA
## 102          NA           NA            NA           NA            NA
## 103          NA           NA            NA           NA            NA
## 104          NA           NA            NA           NA            NA
## 105          NA           NA            NA           NA            NA
##
## [1] "ESS round:  9"
##         chisq        pvalue           cfi           tli         rmsea
##      9773.976         0.000         0.841         0.719         0.104
##          srmr  chisq.scaled pvalue.scaled    cfi.robust    tli.robust
##         0.307      3179.849         0.000         0.842         0.721
##  rmsea.robust
##         0.104
##           lhs op       rhs block group level       mi   epc sepc.lv
## 108   Benev_w  ~   Unive_w     1     1     1 6727.149 1.133   0.825
## 109   Unive_w  ~   Benev_w     1     1     1 6727.149 0.592   0.813
## 107   Benev_w ~~   Unive_w     1     1     1 6727.145 0.313   0.819
## 95    Unive_w =~ iphlppl_r     1     1     1 2318.331 0.620   0.333
## 96    Unive_w =~ iplylfr_r     1     1     1 1756.841 0.493   0.265
## 93    Benev_w =~ ipudrst_r     1     1     1 1490.524 0.356   0.263
## 94    Benev_w =~  impenv_r     1     1     1 1473.075 0.353   0.260
```

```
## 103 iplylfr_r ~~  impenv_r     1     1     1 1020.583 0.137   0.137
## 92    Benev_w =~ ipeqopt_r     1     1     1  745.214 0.261   0.192
## 99  iphlppl_r ~~ ipudrst_r     1     1     1  714.291 0.124   0.124
##     sepc.all sepc.nox
## 108    0.825    0.825
## 109    0.813    0.813
## 107    0.819    0.819
## 95     0.361    0.361
## 96     0.313    0.313
## 93     0.263    0.263
## 94     0.267    0.267
## 103    0.226    0.226
## 92     0.189    0.189
## 99     0.285    0.285
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mmimic9.out
```

Within



Between




```
## lavaan 0.6-5 ended normally after 336 iterations
##
##   Estimator                                         ML
##   Optimization method                           NLMINB
##   Number of free parameters                         41
##
##                                                   Used       Total
##   Number of observations                          26525       27540
##   Number of clusters [cntry]                         14
##   Sampling weights variable                      dweight
##
## Model Test User Model:
##                                              Standard      Robust
##   Test Statistic                             9773.976    3179.849
##   Degrees of freedom                               34          34
##   P-value (Chi-square)                          0.000       0.000
##   Scaling correction factor                                 3.074
##     for the Yuan-Bentler correction (Mplus variant)
##
## Model Test Baseline Model:
##
##   Test statistic                            61286.099   19448.415
##   Degrees of freedom                               60          60
##   P-value                                       0.000       0.000
##   Scaling correction factor                                 3.151
##
```

```
## User Model versus Baseline Model:
##
##   Comparative Fit Index (CFI)                    0.841       0.838
##   Tucker-Lewis Index (TLI)                       0.719       0.714
##
##   Robust Comparative Fit Index (CFI)                         0.842
##   Robust Tucker-Lewis Index (TLI)                            0.721
##
## Loglikelihood and Information Criteria:
##
##   Loglikelihood user model (H0)            -372661.573 -372661.573
##   Scaling correction factor                                  6.818
##       for the MLR correction
##   Loglikelihood unrestricted model (H1)    -367774.585 -367774.585
##   Scaling correction factor                                  5.121
##       for the MLR correction
##
##   Akaike (AIC)                              745405.145  745405.145
##   Bayesian (BIC)                            745740.765  745740.765
##   Sample-size adjusted Bayesian (BIC)       745610.468  745610.468
##
## Root Mean Square Error of Approximation:
##
##   RMSEA                                          0.104       0.059
##   90 Percent confidence interval - lower         0.102       0.058
##   90 Percent confidence interval - upper         0.106       0.060
##   P-value RMSEA <= 0.05                          0.000       0.000
##
##   Robust RMSEA                                               0.104
##   90 Percent confidence interval - lower                     0.101
##   90 Percent confidence interval - upper                     0.107
##
## Standardized Root Mean Square Residual (corr metric):
##
##   SRMR (within covariance matrix)                0.090       0.090
##   SRMR (between covariance matrix)               0.217       0.217
##
## Parameter Estimates:
##
##   Information                                 Observed
##   Observed information based on                Hessian
##   Standard errors                    Robust.huber.white
##
##
## Level 1 [within]:
##
## Latent Variables:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w =~
##     iphlppl_r         1.000                               0.738    0.800
##     iplylfr_r         0.617    0.094    6.583    0.000    0.455    0.537
##   Unive_w =~
##     ipeqopt_r         1.000                               0.537    0.527
##     ipudrst_r         1.143    0.036   31.481    0.000    0.614    0.617
```

```
##     impenv_r          0.890    0.042   21.357    0.000    0.478    0.491
##
## Regressions:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_w ~
##     agea            -0.001    0.001   -1.927    0.054   -0.002   -0.031
##     gndrD            0.240    0.024    9.845    0.000    0.326    0.163
##     eisced2          0.059    0.023    2.592    0.010    0.079    0.037
##     eisced3          0.056    0.037    1.517    0.129    0.075    0.032
##     domicil2         0.003    0.022    0.129    0.897    0.004    0.002
##     domicil3         0.026    0.031    0.817    0.414    0.035    0.011
##     domicil4         0.002    0.025    0.095    0.925    0.003    0.001
##   Unive_w ~
##     agea            -0.000    0.001   -0.183    0.855   -0.000   -0.004
##     gndrD            0.131    0.016    8.204    0.000    0.243    0.122
##     eisced2          0.107    0.013    8.032    0.000    0.199    0.093
##     eisced3          0.203    0.016   12.731    0.000    0.378    0.162
##     domicil2         0.032    0.018    1.754    0.079    0.059    0.028
##     domicil3         0.074    0.027    2.781    0.005    0.138    0.044
##     domicil4         0.069    0.026    2.606    0.009    0.128    0.048
##
## Intercepts:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.000                               0.000    0.000
##    .iplylfr_r         0.000                               0.000    0.000
##    .ipeqopt_r         0.000                               0.000    0.000
##    .ipudrst_r         0.000                               0.000    0.000
##    .impenv_r          0.000                               0.000    0.000
##    .Benev_w           0.000                               0.000    0.000
##    .Unive_w           0.000                               0.000    0.000
##
## Variances:
##                    Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.306    0.061    5.051    0.000    0.306    0.360
##    .iplylfr_r         0.510    0.041   12.365    0.000    0.510    0.711
##    .ipeqopt_r         0.751    0.040   19.017    0.000    0.751    0.722
##    .ipudrst_r         0.616    0.027   23.039    0.000    0.616    0.620
##    .impenv_r          0.721    0.042   17.262    0.000    0.721    0.759
##    .Benev_w           0.528    0.090    5.848    0.000    0.971    0.971
##    .Unive_w           0.276    0.018   15.655    0.000    0.956    0.956
##
## R-Square:
##                    Estimate
##     iphlppl_r         0.640
##     iplylfr_r         0.289
##     ipeqopt_r         0.278
##     ipudrst_r         0.380
##     impenv_r          0.241
##     Benev_w           0.029
##     Unive_w           0.044
##
##
## Level 2 [cntry]:
##
```

```
## Latent Variables:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b =~
##     iphlppl_r         1.000                               0.215    0.838
##     iplylfr_r         0.754    0.189    4.000    0.000    0.162    0.829
##   Unive_b =~
##     ipeqopt_r         1.000                               0.130    0.523
##     ipudrst_r         2.116    0.677    3.127    0.002    0.275    1.232
##     impenv_r          0.657    0.180    3.646    0.000    0.086    0.542
##
## Regressions:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##   Benev_b ~
##     HDI               7.044    1.699    4.145    0.000   32.790    0.852
##   Unive_b ~
##     HDI               2.761    1.380    2.000    0.045   21.212    0.551
##
## Intercepts:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r        -1.671    1.605   -1.041    0.298   -1.671   -6.521
##    .iplylfr_r         0.196    1.118    0.175    0.861    0.196    1.000
##    .ipeqopt_r         2.140    1.292    1.657    0.098    2.140    8.604
##    .ipudrst_r        -0.853    1.343   -0.635    0.525   -0.853   -3.817
##    .impenv_r          3.189    0.694    4.595    0.000    3.189   20.200
##    .Benev_b           0.000                               0.000    0.000
##    .Unive_b           0.000                               0.000    0.000
##
## Variances:
##                   Estimate  Std.Err  z-value  P(>|z|)   Std.lv  Std.all
##    .iphlppl_r         0.020    0.012    1.620    0.105    0.020    0.297
##    .iplylfr_r         0.012    0.006    2.100    0.036    0.012    0.313
##    .ipeqopt_r         0.045    0.024    1.907    0.057    0.045    0.726
##    .ipudrst_r        -0.026    0.015   -1.693    0.091   -0.026   -0.518
##    .impenv_r          0.018    0.007    2.507    0.012    0.018    0.707
##    .Benev_b           0.013    0.010    1.328    0.184    0.275    0.275
##    .Unive_b           0.012    0.007    1.717    0.086    0.697    0.697
##
## R-Square:
##                   Estimate
##     iphlppl_r         0.703
##     iplylfr_r         0.687
##     ipeqopt_r         0.274
##     ipudrst_r            NA
##     impenv_r          0.293
##     Benev_b           0.725
##     Unive_b           0.303
##
## $FIT
##                        npar                        fmin
##                      41.000                       3.022
##                       chisq                          df
##                    9773.976                      34.000
##                      pvalue                chisq.scaled
##                       0.000                    3179.849
```

```
##                     df.scaled                  pvalue.scaled
##                        34.000                          0.000
##          chisq.scaling.factor                 baseline.chisq
##                         3.074                       61286.099
##                   baseline.df               baseline.pvalue
##                        60.000                          0.000
##         baseline.chisq.scaled            baseline.df.scaled
##                      19448.415                       60.000
##        baseline.pvalue.scaled baseline.chisq.scaling.factor
##                         0.000                          3.151
##                           cfi                            tli
##                         0.841                          0.719
##                     cfi.scaled                     tli.scaled
##                         0.838                          0.714
##                     cfi.robust                     tli.robust
##                         0.842                          0.721
##                          logl             unrestricted.logl
##                    -372661.573                    -367774.585
##                           aic                            bic
##                     745405.145                     745740.765
##                        ntotal                           bic2
##                     26525.000                     745610.468
##             scaling.factor.h1              scaling.factor.h0
##                         5.121                          6.818
##                         rmsea                 rmsea.ci.lower
##                         0.104                          0.102
##                rmsea.ci.upper                   rmsea.pvalue
##                         0.106                          0.000
##                   rmsea.scaled          rmsea.ci.lower.scaled
##                         0.059                          0.058
##         rmsea.ci.upper.scaled            rmsea.pvalue.scaled
##                         0.060                          0.000
##                   rmsea.robust          rmsea.ci.lower.robust
##                         0.104                          0.101
##         rmsea.ci.upper.robust            rmsea.pvalue.robust
##                         0.107                             NA
##                          srmr                    srmr_within
##                         0.307                          0.090
##                  srmr_between
##                         0.217
##
## $PE
##           lhs op       rhs block level exo           est           se
## 1     Benev_w =~ iphlppl_r     1     1   0  1.000000e+00 0.0000000000
## 2     Benev_w =~ iplylfr_r     1     1   0  6.166982e-01 0.0936806672
## 3     Unive_w =~ ipeqopt_r     1     1   0  1.000000e+00 0.0000000000
## 4     Unive_w =~ ipudrst_r     1     1   0  1.143382e+00 0.0363196222
## 5     Unive_w =~  impenv_r     1     1   0  8.896918e-01 0.0416572188
## 6     Benev_w  ~      agea     1     1   0 -1.212819e-03 0.0006294331
## 7     Benev_w  ~     gndrD     1     1   0  2.401320e-01 0.0243901603
## 8     Benev_w  ~   eisced2     1     1   0  5.861478e-02 0.0226105928
## 9     Benev_w  ~   eisced3     1     1   0  5.563714e-02 0.0366878092
## 10    Benev_w  ~  domicil2     1     1   0  2.807309e-03 0.0216858866
## 11    Benev_w  ~  domicil3     1     1   0  2.558375e-02 0.0312969402
```

```
## 12    Benev_w  ~  domicil4     1     1   0  2.321704e-03 0.0245369128
## 13    Unive_w  ~      agea     1     1   0 -1.019597e-04 0.0005574170
## 14    Unive_w  ~     gndrD     1     1   0  1.308241e-01 0.0159454610
## 15    Unive_w  ~   eisced2     1     1   0  1.068951e-01 0.0133088808
## 16    Unive_w  ~   eisced3     1     1   0  2.029753e-01 0.0159432712
## 17    Unive_w  ~  domicil2     1     1   0  3.185046e-02 0.0181615200
## 18    Unive_w  ~  domicil3     1     1   0  7.419736e-02 0.0266788889
## 19    Unive_w  ~  domicil4     1     1   0  6.870119e-02 0.0263632628
## 20  iphlppl_r ~~ iphlppl_r     1     1   0  3.063811e-01 0.0606600751
## 21  iplylfr_r ~~ iplylfr_r     1     1   0  5.096253e-01 0.0412144702
## 22  ipeqopt_r ~~ ipeqopt_r     1     1   0  7.514729e-01 0.0395158488
## 23  ipudrst_r ~~ ipudrst_r     1     1   0  6.157266e-01 0.0267248721
## 24   impenv_r ~~  impenv_r     1     1   0  7.212581e-01 0.0417838043
## 25    Benev_w ~~   Benev_w     1     1   0  5.280110e-01 0.0902829741
## 26    Unive_w ~~   Unive_w     1     1   0  2.760691e-01 0.0176344316
## 27       agea ~~      agea     1     1   1  3.476750e+02 0.0000000000
## 28       agea ~~     gndrD     1     1   1  2.426912e-01 0.0000000000
## 29       agea ~~   eisced2     1     1   1 -6.507168e-01 0.0000000000
## 30       agea ~~   eisced3     1     1   1 -5.406374e-01 0.0000000000
## 31       agea ~~  domicil2     1     1   1 -4.031874e-02 0.0000000000
## 32       agea ~~  domicil3     1     1   1  7.142469e-02 0.0000000000
## 33       agea ~~  domicil4     1     1   1 -3.147939e-01 0.0000000000
## 34      gndrD ~~     gndrD     1     1   1  2.492865e-01 0.0000000000
## 35      gndrD ~~   eisced2     1     1   1  2.435458e-03 0.0000000000
## 36      gndrD ~~   eisced3     1     1   1  1.850434e-03 0.0000000000
## 37      gndrD ~~  domicil2     1     1   1  5.429576e-03 0.0000000000
## 38      gndrD ~~  domicil3     1     1   1  2.237286e-05 0.0000000000
## 39      gndrD ~~  domicil4     1     1   1  1.692725e-04 0.0000000000
## 40    eisced2 ~~   eisced2     1     1   1  2.174369e-01 0.0000000000
## 41    eisced2 ~~   eisced3     1     1   1 -7.776361e-02 0.0000000000
## 42    eisced2 ~~  domicil2     1     1   1  5.859252e-03 0.0000000000
## 43    eisced2 ~~  domicil3     1     1   1 -1.655407e-03 0.0000000000
## 44    eisced2 ~~  domicil4     1     1   1  3.408555e-03 0.0000000000
## 45    eisced3 ~~   eisced3     1     1   1  1.841335e-01 0.0000000000
## 46    eisced3 ~~  domicil2     1     1   1 -2.470509e-03 0.0000000000
## 47    eisced3 ~~  domicil3     1     1   1  1.013673e-02 0.0000000000
## 48    eisced3 ~~  domicil4     1     1   1  1.310933e-02 0.0000000000
## 49   domicil2 ~~  domicil2     1     1   1  2.156720e-01 0.0000000000
## 50   domicil2 ~~  domicil3     1     1   1 -3.593941e-02 0.0000000000
## 51   domicil2 ~~  domicil4     1     1   1 -5.486425e-02 0.0000000000
## 52   domicil3 ~~  domicil3     1     1   1  1.011539e-01 0.0000000000
## 53   domicil3 ~~  domicil4     1     1   1 -1.990702e-02 0.0000000000
## 54   domicil4 ~~  domicil4     1     1   1  1.439365e-01 0.0000000000
## 55  iphlppl_r ~1               1     1   0  0.000000e+00 0.0000000000
## 56  iplylfr_r ~1               1     1   0  0.000000e+00 0.0000000000
## 57  ipeqopt_r ~1               1     1   0  0.000000e+00 0.0000000000
## 58  ipudrst_r ~1               1     1   0  0.000000e+00 0.0000000000
## 59   impenv_r ~1               1     1   0  0.000000e+00 0.0000000000
## 60       agea ~1               1     1   1  4.992818e+01 0.0000000000
## 61      gndrD ~1               1     1   1  5.267107e-01 0.0000000000
## 62    eisced2 ~1               1     1   1  3.195476e-01 0.0000000000
## 63    eisced3 ~1               1     1   1  2.433553e-01 0.0000000000
## 64   domicil2 ~1               1     1   1  3.147220e-01 0.0000000000
## 65   domicil3 ~1               1     1   1  1.141942e-01 0.0000000000
```

```
## 66   domicil4 ~1              1     1   1  1.743261e-01 0.0000000000
## 67    Benev_w ~1              1     1   0  0.000000e+00 0.0000000000
## 68    Unive_w ~1              1     1   0  0.000000e+00 0.0000000000
## 69    Benev_b =~ iphlppl_r    2     2   0  1.000000e+00 0.0000000000
## 70    Benev_b =~ iplylfr_r    2     2   0  7.543921e-01 0.1885758958
## 71    Unive_b =~ ipeqopt_r    2     2   0  1.000000e+00 0.0000000000
## 72    Unive_b =~ ipudrst_r    2     2   0  2.115794e+00 0.6766789816
## 73    Unive_b =~  impenv_r    2     2   0  6.571030e-01 0.1802128393
## 74    Benev_b  ~       HDI    2     2   0  7.043518e+00 1.6993747207
## 75    Unive_b  ~       HDI    2     2   0  2.760795e+00 1.3800998092
## 76  iphlppl_r ~~ iphlppl_r    2     2   0  1.953894e-02 0.0120579810
## 77  iplylfr_r ~~ iplylfr_r    2     2   0  1.195588e-02 0.0056928418
## 78  ipeqopt_r ~~ ipeqopt_r    2     2   0  4.491284e-02 0.0235510634
## 79  ipudrst_r ~~ ipudrst_r    2     2   0 -2.586089e-02 0.0152784516
## 80   impenv_r ~~  impenv_r    2     2   0  1.760702e-02 0.0070244526
## 81    Benev_b ~~   Benev_b    2     2   0  1.268341e-02 0.0095523068
## 82    Unive_b ~~   Unive_b    2     2   0  1.179951e-02 0.0068727333
## 83        HDI ~~       HDI    2     2   1  6.743929e-04 0.0000000000
## 84  iphlppl_r ~1              2     2   0 -1.671207e+00 1.6046725620
## 85  iplylfr_r ~1              2     2   0  1.955243e-01 1.1183850141
## 86  ipeqopt_r ~1              2     2   0  2.139936e+00 1.2915219306
## 87  ipudrst_r ~1              2     2   0 -8.532201e-01 1.3432228045
## 88   impenv_r ~1              2     2   0  3.188948e+00 0.6940126103
## 89        HDI ~1              2     2   1  9.135000e-01 0.0000000000
## 90    Benev_b ~1              2     2   0  0.000000e+00 0.0000000000
## 91    Unive_b ~1              2     2   0  0.000000e+00 0.0000000000
## 92  iphlppl_r r2 iphlppl_r    1     1   0  6.396895e-01           NA
## 93  iplylfr_r r2 iplylfr_r    1     1   0  2.887259e-01           NA
## 94  ipeqopt_r r2 ipeqopt_r    1     1   0  2.776396e-01           NA
## 95  ipudrst_r r2 ipudrst_r    1     1   0  3.801324e-01           NA
## 96   impenv_r r2  impenv_r    1     1   0  2.406859e-01           NA
## 97    Benev_w r2   Benev_w    1     1   0  2.929210e-02           NA
## 98    Unive_w r2   Unive_w    1     1   0  4.417807e-02           NA
## 99  iphlppl_r r2 iphlppl_r    2     2   0  7.025119e-01           NA
## 100 iplylfr_r r2 iplylfr_r    2     2   0  6.871414e-01           NA
## 101 ipeqopt_r r2 ipeqopt_r    2     2   0  2.738727e-01           NA
## 102 ipudrst_r r2 ipudrst_r    2     2   0            NA           NA
## 103  impenv_r r2  impenv_r    2     2   0  2.934960e-01           NA
## 104   Benev_b r2   Benev_b    2     2   0  7.251151e-01           NA
## 105   Unive_b r2   Unive_b    2     2   0  3.034415e-01           NA
##               z       pvalue        std.lv       std.all       std.nox
## 1            NA           NA  7.375258e-01  0.7998059380  7.998059e-01
## 2    6.58298263 4.611023e-11  4.548308e-01  0.5373322365  5.373322e-01
## 3            NA           NA  5.374282e-01  0.5269151968  5.269152e-01
## 4   31.48112132 0.000000e+00  6.144859e-01  0.6165487804  6.165488e-01
## 5   21.35744558 0.000000e+00  4.781454e-01  0.4905975343  4.905975e-01
## 6   -1.92684273 5.399923e-02 -1.644442e-03 -0.0306623440 -1.644442e-03
## 7    9.84544759 0.000000e+00  3.255914e-01  0.1625632340  3.255914e-01
## 8    2.59235926 9.532017e-03  7.947489e-02  0.0370592466  7.947489e-02
## 9    1.51650207 1.293924e-01  7.543755e-02  0.0323708422  7.543755e-02
## 10   0.12945327 8.969990e-01  3.806388e-03  0.0017677056  3.806388e-03
## 11   0.81745213 4.136701e-01  3.468862e-02  0.0110326087  3.468862e-02
## 12   0.09462088 9.246160e-01  3.147964e-03  0.0011943048  3.147964e-03
## 13  -0.18291450 8.548651e-01 -1.897177e-04 -0.0035374852 -1.897177e-04
```

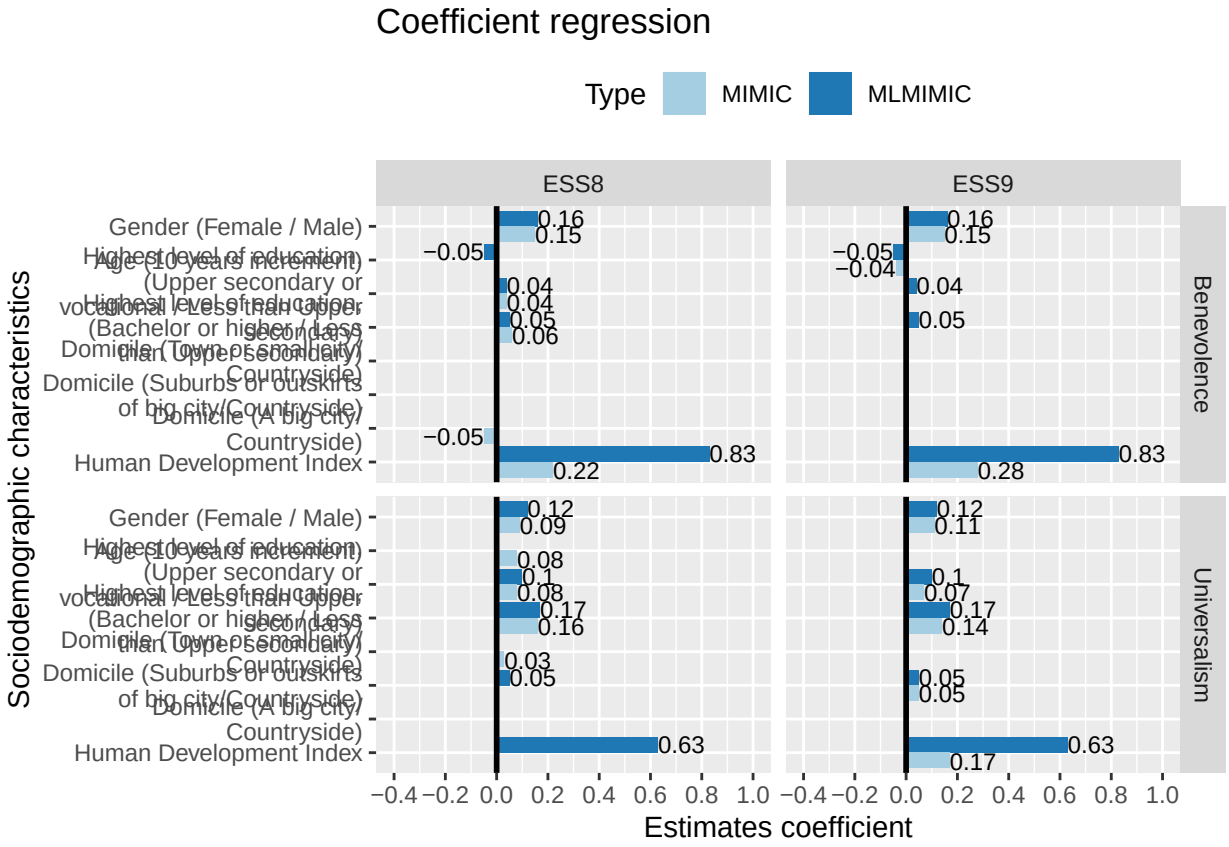
```
## 14   8.20447012 2.220446e-16  2.434261e-01  0.1215392684  2.434261e-01
## 15   8.03186422 8.881784e-16  1.989012e-01  0.0927479097  1.989012e-01
## 16  12.73109202 0.000000e+00  3.776789e-01  0.1620649468  3.776789e-01
## 17   1.75373292 7.947628e-02  5.926458e-02  0.0275227712  5.926458e-02
## 18   2.78112616 5.417068e-03  1.380600e-01  0.0439095739  1.380600e-01
## 19   2.60594402 9.162143e-03  1.278332e-01  0.0484986129  1.278332e-01
## 20   5.05078743 4.399925e-07  3.063811e-01  0.3603104616  3.603105e-01
## 21  12.36520271 0.000000e+00  5.096253e-01  0.7112740676  7.112741e-01
## 22  19.01699907 0.000000e+00  7.514729e-01  0.7223603754  7.223604e-01
## 23  23.03945916 0.000000e+00  6.157266e-01  0.6198676014  6.198676e-01
## 24  17.26166696 0.000000e+00  7.212581e-01  0.7593140593  7.593141e-01
## 25   5.84840064 4.963220e-09  9.707079e-01  0.9707078965  9.707079e-01
## 26  15.65511837 0.000000e+00  9.558219e-01  0.9558219273  9.558219e-01
## 27           NA           NA  3.476750e+02  1.0000000000  3.476750e+02
## 28           NA           NA  2.426912e-01  0.0260686109  2.426912e-01
## 29           NA           NA -6.507168e-01 -0.0748408359 -6.507168e-01
## 30           NA           NA -5.406374e-01 -0.0675698567 -5.406374e-01
## 31           NA           NA -4.031874e-02 -0.0046561113 -4.031874e-02
## 32           NA           NA  7.142469e-02  0.0120439915  7.142469e-02
## 33           NA           NA -3.147939e-01 -0.0444993986 -3.147939e-01
## 34           NA           NA  2.492865e-01  1.0000000000  2.492865e-01
## 35           NA           NA  2.435458e-03  0.0104607929  2.435458e-03
## 36           NA           NA  1.850434e-03  0.0086368958  1.850434e-03
## 37           NA           NA  5.429576e-03  0.0234163679  5.429576e-03
## 38           NA           NA  2.237286e-05  0.0001408902  2.237286e-05
## 39           NA           NA  1.692725e-04  0.0008936171  1.692725e-04
## 40           NA           NA  2.174369e-01  1.0000000000  2.174369e-01
## 41           NA           NA -7.776361e-02 -0.3886362784 -7.776361e-02
## 42           NA           NA  5.859252e-03  0.0270569353  5.859252e-03
## 43           NA           NA -1.655407e-03 -0.0111621259 -1.655407e-03
## 44           NA           NA  3.408555e-03  0.0192671785  3.408555e-03
## 45           NA           NA  1.841335e-01  1.0000000000  1.841335e-01
## 46           NA           NA -2.470509e-03 -0.0123971859 -2.470509e-03
## 47           NA           NA  1.013673e-02  0.0742745760  1.013673e-02
## 48           NA           NA  1.310933e-02  0.0805246015  1.310933e-02
## 49           NA           NA  2.156720e-01  1.0000000000  2.156720e-01
## 50           NA           NA -3.593941e-02 -0.2433227894 -3.593941e-02
## 51           NA           NA -5.486425e-02 -0.3113917174 -5.486425e-02
## 52           NA           NA  1.011539e-01  1.0000000000  1.011539e-01
## 53           NA           NA -1.990702e-02 -0.1649793583 -1.990702e-02
## 54           NA           NA  1.439365e-01  1.0000000000  1.439365e-01
## 55           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 56           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 57           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 58           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 59           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 60           NA           NA  4.992818e+01  2.6776822518  4.992818e+01
## 61           NA           NA  5.267107e-01  1.0549276711  5.267107e-01
## 62           NA           NA  3.195476e-01  0.6852813325  3.195476e-01
## 63           NA           NA  2.433553e-01  0.5671193128  2.433553e-01
## 64           NA           NA  3.147220e-01  0.6776885010  3.147220e-01
## 65           NA           NA  1.141942e-01  0.3590481306  1.141942e-01
## 66           NA           NA  1.743261e-01  0.4594909268  1.743261e-01
## 67           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
```

```
## 68           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 69           NA           NA  2.148041e-01  0.8381598338  8.381598e-01
## 70   4.00046941 6.321696e-05  1.620465e-01  0.8289399123  8.289399e-01
## 71           NA           NA  1.301527e-01  0.5233284611  5.233285e-01
## 72   3.12673224 1.767608e-03  2.753763e-01  1.2318748630  1.231875e+00
## 73   3.64626089 2.660838e-04  8.552374e-02  0.5417527344  5.417527e-01
## 74   4.14477010 3.401548e-05  3.279042e+01  0.8515369126  3.279042e+01
## 75   2.00043161 4.545368e-02  2.121197e+01  0.5508552305  2.121197e+01
## 76   1.62041594 1.051430e-01  1.953894e-02  0.2974880930  2.974881e-01
## 77   2.10015999 3.571477e-02  1.195588e-02  0.3128586218  3.128586e-01
## 78   1.90704071 5.651532e-02  4.491284e-02  0.7261273218  7.261273e-01
## 79  -1.69263827 9.052434e-02 -2.586089e-02 -0.5175156780 -5.175157e-01
## 80   2.50653199 1.219220e-02  1.760702e-02  0.7065039747  7.065040e-01
## 81   1.32778514 1.842491e-01  2.748849e-01  0.2748848865  2.748849e-01
## 82   1.71685860 8.600501e-02  6.965585e-01  0.6965585150  6.965585e-01
## 83           NA           NA  6.743929e-04  1.0000000000  6.743929e-04
## 84  -1.04146277 2.976608e-01 -1.671207e+00 -6.5210032505 -6.521003e+00
## 85   0.17482739 8.612153e-01  1.955243e-01  1.0001937399  1.000194e+00
## 86   1.65690994 9.753768e-02  2.139936e+00  8.6044246303  8.604425e+00
## 87  -0.63520367 5.252956e-01 -8.532201e-01 -3.8168145684 -3.816815e+00
## 88   4.59494174 4.328702e-06  3.188948e+00 20.2004854811  2.020049e+01
## 89           NA           NA  9.135000e-01 35.1764550515  9.135000e-01
## 90           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 91           NA           NA  0.000000e+00  0.0000000000  0.000000e+00
## 92           NA           NA            NA            NA            NA
## 93           NA           NA            NA            NA            NA
## 94           NA           NA            NA            NA            NA
## 95           NA           NA            NA            NA            NA
## 96           NA           NA            NA            NA            NA
## 97           NA           NA            NA            NA            NA
## 98           NA           NA            NA            NA            NA
## 99           NA           NA            NA            NA            NA
## 100          NA           NA            NA            NA            NA
## 101          NA           NA            NA            NA            NA
## 102          NA           NA            NA            NA            NA
## 103          NA           NA            NA            NA            NA
## 104          NA           NA            NA            NA            NA
## 105          NA           NA            NA            NA            NA
```

Results

```
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\sem8.out

## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\sem9.out

## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\msem9.out

## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\msem9.out
```


```
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mimic8.out
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mimic9.out
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mmimic9.out
## Reading model:  C:\Users\pamel\Documents\ESS\MPLUS\mmimic9.out
```


Coefficient regression
Type
MIMIC
MLMIMIC
ESS8
ESS9
Benevolence
Universalism
Sociodemographic characteristics
Gender (Female / Male)
Age (10 years increment)
Highest level of education (Upper secondary or vocational / Less than Upper secondary)
Highest level of education (Bachelor or higher / Less than Upper secondary)
Domicile (Town or smallcity / Countryside)
Domicile (Suburbs or outskirts of big city/Countryside)
Domicile (A big city/ Countryside)
Human Development Index
0.16
0.15
−0.05
−0.04
0.04
0.04
0.05
0.06
−0.05
0.83
0.22
0.28
0.12
0.09
0.08
0.1
0.08
0.17
0.16
0.11
0.07
0.14
0.03
0.05
0.63
0.17
−0.4 −0.2 0.0 0.2 0.4 0.6 0.8 1.0
Estimates coefficient