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

```
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)
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) print(describeFast(x),short=FALSE))
```

```
##
##  Number of observations =  28080 of which  9340   are complete cases.   Number of variables =  37  o
##          var n.obs numeric factor logical character type
## ipshabt    1 27778   FALSE  FALSE   FALSE     FALSE   NA
## ipsuces    2 27790   FALSE  FALSE   FALSE     FALSE   NA
## iphlppl    3 27837   FALSE  FALSE   FALSE     FALSE   NA
## iplylfr    4 27833   FALSE  FALSE   FALSE     FALSE   NA
## ipfrule    5 27681   FALSE  FALSE   FALSE     FALSE   NA
## ipbhprp    6 27783   FALSE  FALSE   FALSE     FALSE   NA
## ipgdtim    7 27832   FALSE  FALSE   FALSE     FALSE   NA
## impfun     8 27810   FALSE  FALSE   FALSE     FALSE   NA
## imprich    9 27818   FALSE  FALSE   FALSE     FALSE   NA
```

```
## iprspot   10 27716   FALSE  FALSE   FALSE     FALSE   NA
## impsafe   11 27861   FALSE  FALSE   FALSE     FALSE   NA
## ipstrgv   12 27694   FALSE  FALSE   FALSE     FALSE   NA
## ipcrtiv   13 27764   FALSE  FALSE   FALSE     FALSE   NA
## impfree   14 27834   FALSE  FALSE   FALSE     FALSE   NA
## impdiff   15 27812   FALSE  FALSE   FALSE     FALSE   NA
## ipadvnt   16 27818   FALSE  FALSE   FALSE     FALSE   NA
## ipmodst   17 27795   FALSE  FALSE   FALSE     FALSE   NA
## imptrad   18 27847   FALSE  FALSE   FALSE     FALSE   NA
## ipeqopt   19 27810   FALSE  FALSE   FALSE     FALSE   NA
## ipudrst   20 27780   FALSE  FALSE   FALSE     FALSE   NA
## impenv    21 27849   FALSE  FALSE   FALSE     FALSE   NA
## cntry     22 28080   FALSE  FALSE   FALSE     FALSE   NA
## dweight   23 28080   FALSE  FALSE   FALSE     FALSE   NA
## pweight   24 28080   FALSE  FALSE   FALSE     FALSE   NA
## hhmmb     25 27962   FALSE  FALSE   FALSE     FALSE   NA
## gndr      26 28078   FALSE  FALSE   FALSE     FALSE   NA
## agea      27 27973   FALSE  FALSE   FALSE     FALSE   NA
## yrbrn     28 27973   FALSE  FALSE   FALSE     FALSE   NA
## lvgptnea  29 24787   FALSE  FALSE   FALSE     FALSE   NA
## dvrcdeva  30 27923   FALSE  FALSE   FALSE     FALSE   NA
## marsts    31 14736   FALSE  FALSE   FALSE     FALSE   NA
## chldhhe   32 18468   FALSE  FALSE   FALSE     FALSE   NA
## domicil   33 28056   FALSE  FALSE   FALSE     FALSE   NA
## eisced    34 27983   FALSE  FALSE   FALSE     FALSE   NA
## name      35 28080   FALSE  FALSE   FALSE     FALSE   NA
## essround  36 28080   FALSE  FALSE   FALSE     FALSE   NA
## idno      37 28080   FALSE  FALSE   FALSE     FALSE   NA
##
##  Number of observations =  27540 of which  8851   are complete cases.   Number of variables =  37  o
##          var n.obs numeric factor logical character type
## ipshabt    1 27167   FALSE  FALSE   FALSE     FALSE   NA
## ipsuces    2 27140   FALSE  FALSE   FALSE     FALSE   NA
## iphlppl    3 27207   FALSE  FALSE   FALSE     FALSE   NA
## iplylfr    4 27227   FALSE  FALSE   FALSE     FALSE   NA
## ipfrule    5 27018   FALSE  FALSE   FALSE     FALSE   NA
## ipbhprp    6 27158   FALSE  FALSE   FALSE     FALSE   NA
## ipgdtim    7 27185   FALSE  FALSE   FALSE     FALSE   NA
## impfun     8 27197   FALSE  FALSE   FALSE     FALSE   NA
## imprich    9 27197   FALSE  FALSE   FALSE     FALSE   NA
## iprspot   10 27044   FALSE  FALSE   FALSE     FALSE   NA
## impsafe   11 27211   FALSE  FALSE   FALSE     FALSE   NA
## ipstrgv   12 27004   FALSE  FALSE   FALSE     FALSE   NA
## ipcrtiv   13 27132   FALSE  FALSE   FALSE     FALSE   NA
## impfree   14 27203   FALSE  FALSE   FALSE     FALSE   NA
## impdiff   15 27207   FALSE  FALSE   FALSE     FALSE   NA
## ipadvnt   16 27208   FALSE  FALSE   FALSE     FALSE   NA
## ipmodst   17 27124   FALSE  FALSE   FALSE     FALSE   NA
## imptrad   18 27207   FALSE  FALSE   FALSE     FALSE   NA
## ipeqopt   19 27145   FALSE  FALSE   FALSE     FALSE   NA
## ipudrst   20 27124   FALSE  FALSE   FALSE     FALSE   NA
## impenv    21 27228   FALSE  FALSE   FALSE     FALSE   NA
## cntry     22 27540   FALSE  FALSE   FALSE     FALSE   NA
## dweight   23 27540   FALSE  FALSE   FALSE     FALSE   NA
```

```
## pweight   24 27540   FALSE  FALSE   FALSE     FALSE   NA
## hhmmb     25 27466   FALSE  FALSE   FALSE     FALSE   NA
## gndr      26 27540   FALSE  FALSE   FALSE     FALSE   NA
## agea      27 27389   FALSE  FALSE   FALSE     FALSE   NA
## yrbrn     28 27389   FALSE  FALSE   FALSE     FALSE   NA
## lvgptnea  29 24300   FALSE  FALSE   FALSE     FALSE   NA
## dvrcdeva  30 27431   FALSE  FALSE   FALSE     FALSE   NA
## marsts    31 14433   FALSE  FALSE   FALSE     FALSE   NA
## chldhhe   32 18100   FALSE  FALSE   FALSE     FALSE   NA
## domicil   33 27522   FALSE  FALSE   FALSE     FALSE   NA
## eisced    34 27469   FALSE  FALSE   FALSE     FALSE   NA
## name      35 27540   FALSE  FALSE   FALSE     FALSE   NA
## essround  36 27540   FALSE  FALSE   FALSE     FALSE   NA
## idno      37 27540   FALSE  FALSE   FALSE     FALSE   NA
```

```
## ds_filtradaAll$essround: 8
##          var n.obs numeric factor logical character type
## ipshabt    1 27778   FALSE  FALSE   FALSE     FALSE   NA
## ipsuces    2 27790   FALSE  FALSE   FALSE     FALSE   NA
## iphlppl    3 27837   FALSE  FALSE   FALSE     FALSE   NA
## iplylfr    4 27833   FALSE  FALSE   FALSE     FALSE   NA
## ipfrule    5 27681   FALSE  FALSE   FALSE     FALSE   NA
## ipbhprp    6 27783   FALSE  FALSE   FALSE     FALSE   NA
## ipgdtim    7 27832   FALSE  FALSE   FALSE     FALSE   NA
## impfun     8 27810   FALSE  FALSE   FALSE     FALSE   NA
## imprich    9 27818   FALSE  FALSE   FALSE     FALSE   NA
## iprspot   10 27716   FALSE  FALSE   FALSE     FALSE   NA
## impsafe   11 27861   FALSE  FALSE   FALSE     FALSE   NA
## ipstrgv   12 27694   FALSE  FALSE   FALSE     FALSE   NA
## ipcrtiv   13 27764   FALSE  FALSE   FALSE     FALSE   NA
## impfree   14 27834   FALSE  FALSE   FALSE     FALSE   NA
## impdiff   15 27812   FALSE  FALSE   FALSE     FALSE   NA
## ipadvnt   16 27818   FALSE  FALSE   FALSE     FALSE   NA
## ipmodst   17 27795   FALSE  FALSE   FALSE     FALSE   NA
## imptrad   18 27847   FALSE  FALSE   FALSE     FALSE   NA
## ipeqopt   19 27810   FALSE  FALSE   FALSE     FALSE   NA
## ipudrst   20 27780   FALSE  FALSE   FALSE     FALSE   NA
## impenv    21 27849   FALSE  FALSE   FALSE     FALSE   NA
## cntry     22 28080   FALSE  FALSE   FALSE     FALSE   NA
## dweight   23 28080   FALSE  FALSE   FALSE     FALSE   NA
## pweight   24 28080   FALSE  FALSE   FALSE     FALSE   NA
## hhmmb     25 27962   FALSE  FALSE   FALSE     FALSE   NA
## gndr      26 28078   FALSE  FALSE   FALSE     FALSE   NA
## agea      27 27973   FALSE  FALSE   FALSE     FALSE   NA
## yrbrn     28 27973   FALSE  FALSE   FALSE     FALSE   NA
## lvgptnea  29 24787   FALSE  FALSE   FALSE     FALSE   NA
## dvrcdeva  30 27923   FALSE  FALSE   FALSE     FALSE   NA
## marsts    31 14736   FALSE  FALSE   FALSE     FALSE   NA
## chldhhe   32 18468   FALSE  FALSE   FALSE     FALSE   NA
## domicil   33 28056   FALSE  FALSE   FALSE     FALSE   NA
## eisced    34 27983   FALSE  FALSE   FALSE     FALSE   NA
## name      35 28080   FALSE  FALSE   FALSE     FALSE   NA
## essround  36 28080   FALSE  FALSE   FALSE     FALSE   NA
## idno      37 28080   FALSE  FALSE   FALSE     FALSE   NA
```

```
## ------------------------------------------------------------
## ds_filtradaAll$essround: 9
##          var n.obs numeric factor logical character type
## ipshabt    1 27167   FALSE  FALSE   FALSE     FALSE   NA
## ipsuces    2 27140   FALSE  FALSE   FALSE     FALSE   NA
## iphlppl    3 27207   FALSE  FALSE   FALSE     FALSE   NA
## iplylfr    4 27227   FALSE  FALSE   FALSE     FALSE   NA
## ipfrule    5 27018   FALSE  FALSE   FALSE     FALSE   NA
## ipbhprp    6 27158   FALSE  FALSE   FALSE     FALSE   NA
## ipgdtim    7 27185   FALSE  FALSE   FALSE     FALSE   NA
## impfun     8 27197   FALSE  FALSE   FALSE     FALSE   NA
## imprich    9 27197   FALSE  FALSE   FALSE     FALSE   NA
## iprspot   10 27044   FALSE  FALSE   FALSE     FALSE   NA
## impsafe   11 27211   FALSE  FALSE   FALSE     FALSE   NA
## ipstrgv   12 27004   FALSE  FALSE   FALSE     FALSE   NA
## ipcrtiv   13 27132   FALSE  FALSE   FALSE     FALSE   NA
## impfree   14 27203   FALSE  FALSE   FALSE     FALSE   NA
## impdiff   15 27207   FALSE  FALSE   FALSE     FALSE   NA
## ipadvnt   16 27208   FALSE  FALSE   FALSE     FALSE   NA
## ipmodst   17 27124   FALSE  FALSE   FALSE     FALSE   NA
## imptrad   18 27207   FALSE  FALSE   FALSE     FALSE   NA
## ipeqopt   19 27145   FALSE  FALSE   FALSE     FALSE   NA
## ipudrst   20 27124   FALSE  FALSE   FALSE     FALSE   NA
## impenv    21 27228   FALSE  FALSE   FALSE     FALSE   NA
## cntry     22 27540   FALSE  FALSE   FALSE     FALSE   NA
## dweight   23 27540   FALSE  FALSE   FALSE     FALSE   NA
## pweight   24 27540   FALSE  FALSE   FALSE     FALSE   NA
## hhmmb     25 27466   FALSE  FALSE   FALSE     FALSE   NA
## gndr      26 27540   FALSE  FALSE   FALSE     FALSE   NA
## agea      27 27389   FALSE  FALSE   FALSE     FALSE   NA
## yrbrn     28 27389   FALSE  FALSE   FALSE     FALSE   NA
## lvgptnea  29 24300   FALSE  FALSE   FALSE     FALSE   NA
## dvrcdeva  30 27431   FALSE  FALSE   FALSE     FALSE   NA
## marsts    31 14433   FALSE  FALSE   FALSE     FALSE   NA
## chldhhe   32 18100   FALSE  FALSE   FALSE     FALSE   NA
## domicil   33 27522   FALSE  FALSE   FALSE     FALSE   NA
## eisced    34 27469   FALSE  FALSE   FALSE     FALSE   NA
## name      35 27540   FALSE  FALSE   FALSE     FALSE   NA
## essround  36 27540   FALSE  FALSE   FALSE     FALSE   NA
## idno      37 27540   FALSE  FALSE   FALSE     FALSE   NA
```

```
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
```

```r
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
```

```r
#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
```

```r
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
```

```r
# use_labels(ds_filtradaAll,table(marsts,as.character(cntry)))
# marstsD <- as.dichotomy(ds_filtradaAll$marsts, prefix="marsts")
# names(marstsD)

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"
```

```
# use_labels(ds_filtradaAll,table(chldhhe,as.character(cntry)))
# ds_filtradaAll$chldhheD <- ifelse(ds_filtradaAll$chldhhe == 2, 0, ds_filtradaAll$chldhhe)
#
# use_labels(ds_filtradaAll,table(lvgptnea,as.character(cntry)))
```

```r
# ds_filtradaAll$lvgptneaD <- ifelse(ds_filtradaAll$lvgptnea == 2, 0, ds_filtradaAll$lvgptnea)

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

Model CFA

```r
model1<-'
achie =~ ipshabt + ipsuces
Benev =~ iphlppl + iplylfr
confo =~ ipfrule + ipbhprp
hedon =~ ipgdtim + impfun
power =~ imprich + iprspot
secur =~ impsafe + ipstrgv
selfd =~ ipcrtiv + impfree
stimu =~ impdiff + ipadvnt
tradi =~ ipmodst + imptrad
Unive =~ ipeqopt + ipudrst +impenv'

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

  lavaan.fit1 <- lavaan(model1, 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.fit1 <- lavaan.survey(lavaan.fit=lavaan.fit1,survey.design=survey.design)
  print(paste("ESS round: ", r))
  print(fitMeasures(survey.fit1, c("cfi", "rmsea", "srmr")))
  print(modindices(survey.fit1,sort=T)[1:10,])
}
```

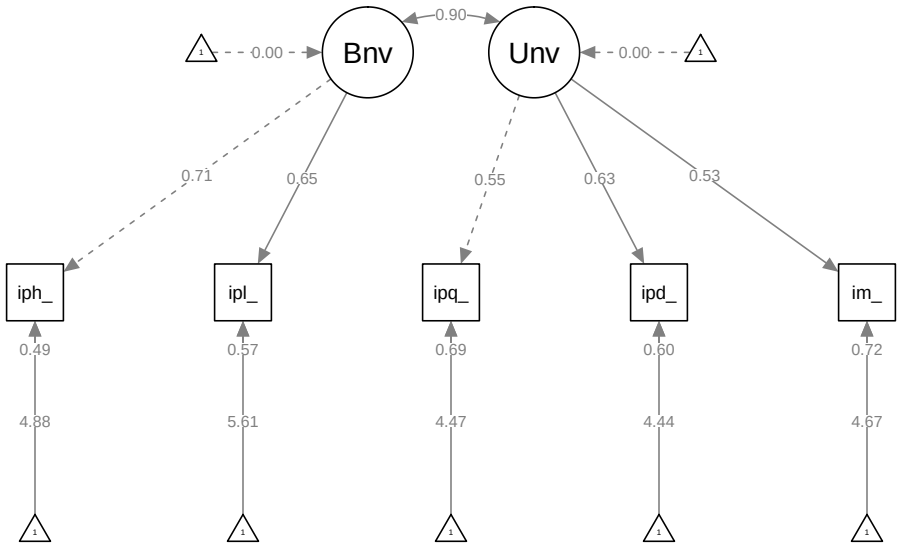
```
## [1] "ESS round:  8"
##   cfi rmsea  srmr
## 0.902 0.058 0.049
##       lhs op     rhs       mi    epc sepc.lv sepc.all sepc.nox
## 173 confo =~ imprich 2635.432 -0.869  -0.680   -0.527   -0.527
## 289 tradi =~ imprich 2510.648 -0.966  -0.522   -0.405   -0.405
## 174 confo =~ iprspot 2510.041  0.951   0.743    0.550    0.550
## 290 tradi =~ iprspot 2442.709  1.065   0.575    0.426    0.426
## 232 secur =~ imprich 1908.016 -0.679  -0.562   -0.436   -0.436
## 314 Unive =~ impdiff 1850.133  0.740   0.426    0.319    0.319
## 315 Unive =~ ipadvnt 1832.963 -0.846  -0.487   -0.343   -0.343
## 233 secur =~ iprspot 1822.581  0.742   0.614    0.454    0.454
## 256 selfd =~ ipadvnt 1790.034 -1.182  -0.811   -0.571   -0.571
## 255 selfd =~ impdiff 1763.892  1.020   0.700    0.524    0.524
## [1] "ESS round:  9"
##   cfi rmsea  srmr
## 0.900 0.058 0.048
##       lhs op     rhs       mi    epc sepc.lv sepc.all sepc.nox
## 289 tradi =~ imprich 2455.685 -0.871  -0.468   -0.384   -0.384
```

```
## 173 confo =~ imprich 2411.447 -0.834  -0.589   -0.484   -0.484
## 290 tradi =~ iprspot 2247.085  1.023   0.549    0.402    0.402
## 174 confo =~ iprspot 2224.435  0.983   0.694    0.508    0.508
## 232 secur =~ imprich 1779.921 -0.623  -0.499   -0.410   -0.410
## 233 secur =~ iprspot 1763.434  0.752   0.602    0.441    0.441
## 314 Unive =~ impdiff 1356.475  0.691   0.375    0.280    0.280
## 154 Benev =~ imprich 1353.931 -0.550  -0.368   -0.303   -0.303
## 155 Benev =~ iprspot 1348.768  0.671   0.449    0.329    0.329
## 315 Unive =~ ipadvnt 1305.687 -0.781  -0.424   -0.297   -0.297
```

```
model3<-'
Benev =~ iphlppl_r + iplylfr_r
Unive =~ ipeqopt_r + ipudrst_r +impenv_r
Benev ~~ Unive
'
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(model3, 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("cfi", "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","stand", style = "lisrel", rainbowStart = 0.8))
}
```

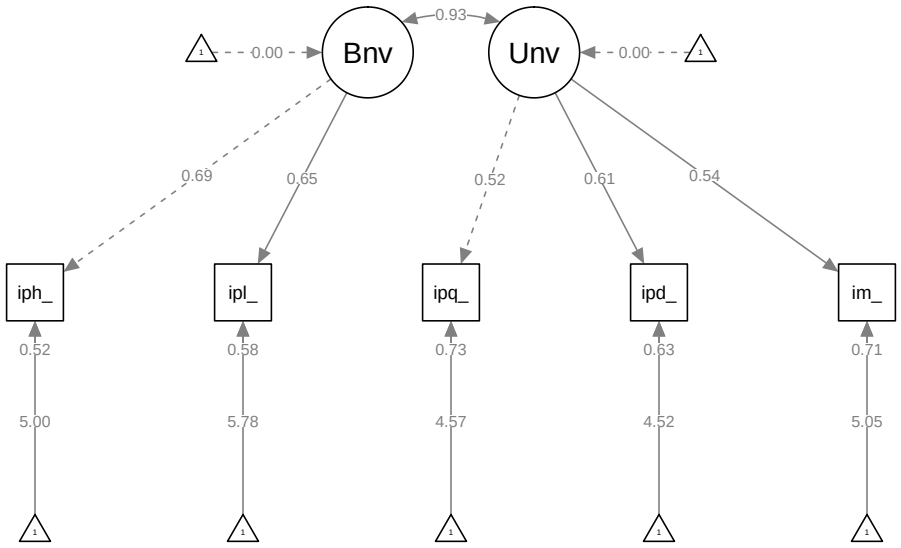
```
## [1] "ESS round:  8"
##   cfi rmsea  srmr
## 0.990 0.047 0.014
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 32 iplylfr_r ~~  impenv_r 166.589  0.065   0.065    0.109    0.109
## 21     Benev =~ ipeqopt_r 130.387 -0.830  -0.583   -0.543   -0.543
## 35 ipudrst_r ~~  impenv_r 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
```




```
## [1] "ESS round:  9"
##   cfi rmsea  srmr
## 0.985 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
```




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

```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(model3, 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)
assign(paste0("survey.conffit3r",r),survey.conffit3)
# 2. METRIC EQUIVALENCE: set the factor loadings equal across groups

lavaan.metrfit3 <- lavaan(model3, 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)

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

lavaan.scalfit3 <- lavaan(model3, 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"))
survey.scalfit3 <- lavaan.survey(lavaan.fit=lavaan.scalfit3,survey.design=survey.design)


# 4. check whether factor variances are equal across groups
lavaan.varianfit3 <- lavaan(model3, 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"))
  survey.varianfit3 <- lavaan.survey(lavaan.fit=lavaan.varianfit3,survey.design=survey.design)


  invar <- data.frame(round(rbind(Configural = fitMeasures(survey.conffit3, c("cfi", "rmsea", "srmr")),
  Metric = fitMeasures(survey.metrfit3, c("cfi", "rmsea", "srmr")),
  Scalar = fitMeasures(survey.scalfit3, c("cfi", "rmsea", "srmr")),
  Strict = fitMeasures(survey.varianfit3,  c("cfi", "rmsea", "srmr"))),3))
  dif <- invar %>%
      mutate_all(funs(. - lag(.)))
  print(paste("ESS round: ", r))
  print(cbind(invar,dif))

}
```

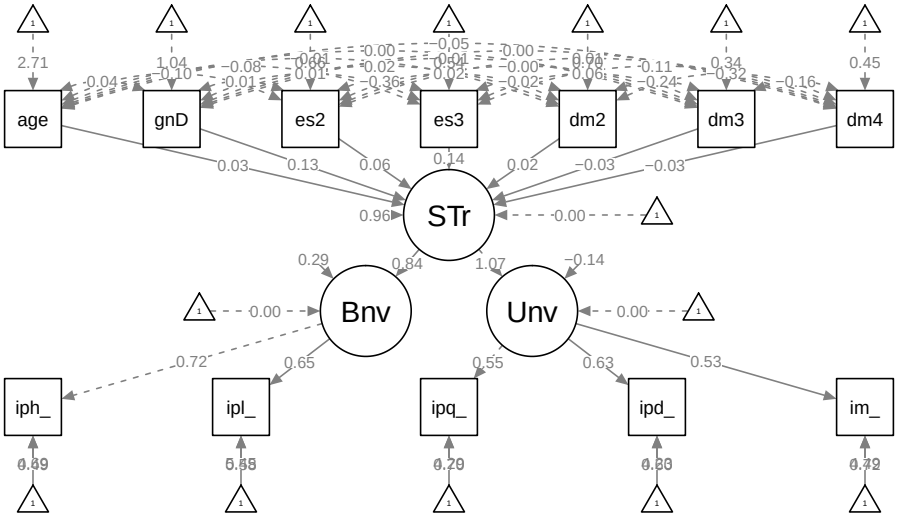
```
## [1] "ESS round:  8"
##              cfi rmsea  srmr    cfi  rmsea  srmr
## Configural 0.982 0.062 0.018     NA     NA    NA
## Metric     0.974 0.057 0.029 -0.008 -0.005 0.011
## Scalar     0.886 0.100 0.059 -0.088  0.043 0.030
## Strict     0.852 0.105 0.106 -0.034  0.005 0.047
## [1] "ESS round:  9"
##              cfi rmsea  srmr    cfi  rmsea  srmr
## Configural 0.979 0.066 0.018     NA     NA    NA
## Metric     0.968 0.063 0.032 -0.011 -0.003 0.014
## Scalar     0.870 0.107 0.063 -0.098  0.044 0.031
## Strict     0.838 0.109 0.103 -0.032  0.002 0.040
```

Model SEM

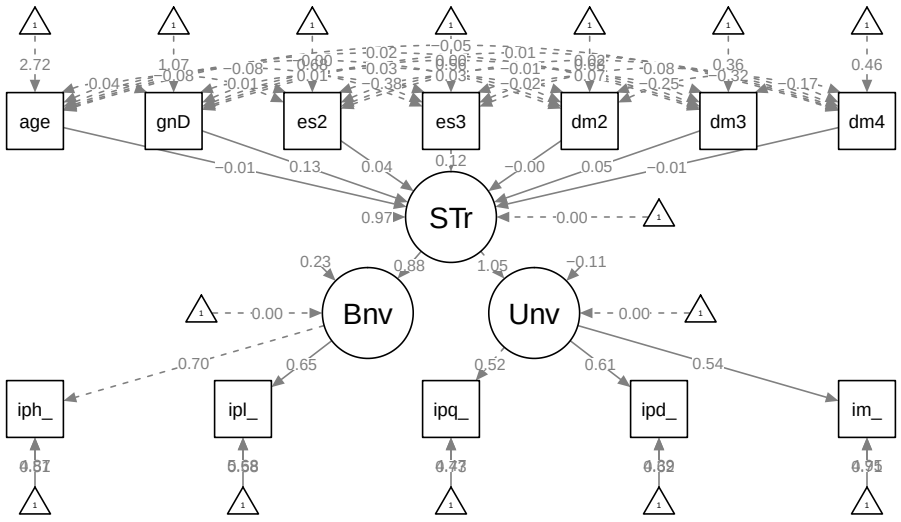
```
# semmodel <-'
# benev =~ iphlppl_r + iplylfr_r
# unive =~ ipeqopt_r + ipudrst_r + impenv_r
# unive ~~  benev
# unive ~  agea + gndrD + eisced1 + eisced2 + eisced3 + eisced4 + eisced5 + eisced6 + domicil2 + domici
# '

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

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(semmodel, 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("cfi", "rmsea", "srmr")))
  print(modindices(survey.semfit,sort=T)[1:10,])
  invisible(semPaths(survey.semfit,"model","stand", style = "lisrel"))

}
```

```
## [1] "ESS round:  8"
##   cfi rmsea  srmr
## 0.934 0.046 0.021
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 82 iplylfr_r ~~  impenv_r 177.131  0.067   0.067    0.111    0.111
## 85 ipudrst_r ~~  impenv_r 142.662 -0.079  -0.079   -0.111   -0.111
## 73    STrasc =~ ipeqopt_r 142.660  1.605   1.008    0.941    0.941
## 83 ipeqopt_r ~~ ipudrst_r  93.195  0.068   0.068    0.094    0.094
## 75    STrasc =~  impenv_r  93.189 -1.189  -0.747   -0.723   -0.723
## 68     Benev =~  impenv_r  81.100  0.570   0.402    0.389    0.389
## 66     Benev =~ ipeqopt_r  73.928 -0.587  -0.415   -0.387   -0.387
## 70     Unive =~ iplylfr_r  48.066 -2.602  -1.532   -1.702   -1.702
## 69     Unive =~ iphlppl_r  48.063  3.144   1.852    1.882    1.882
## 80 iplylfr_r ~~ ipeqopt_r  45.105 -0.035  -0.035   -0.058   -0.058
```




```
## [1] "ESS round:  9"
##   cfi rmsea  srmr
## 0.938 0.043 0.019
##          lhs op       rhs      mi    epc sepc.lv sepc.all sepc.nox
## 82 iplylfr_r ~~  impenv_r 360.764  0.094   0.094    0.168    0.168
## 68     Benev =~  impenv_r 156.189  1.120   0.756    0.765    0.765
## 75    STrasc =~  impenv_r 121.568 -1.964  -1.134   -1.147   -1.147
## 83 ipeqopt_r ~~ ipudrst_r 121.568  0.075   0.075    0.102    0.102
## 85 ipudrst_r ~~  impenv_r  89.875 -0.062  -0.062   -0.091   -0.091
## 73    STrasc =~ ipeqopt_r  89.870  1.742   1.006    0.956    0.956
## 81 iplylfr_r ~~ ipudrst_r  79.414 -0.049  -0.049   -0.090   -0.090
## 80 iplylfr_r ~~ ipeqopt_r  70.882 -0.044  -0.044   -0.073   -0.073
## 79 iphlppl_r ~~  impenv_r  51.277 -0.040  -0.040   -0.068   -0.068
## 66     Benev =~ ipeqopt_r  42.253 -0.605  -0.408   -0.388   -0.388
```




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

  # 1. CONFIGURAL EQUIVALENCE
  ## Add the "meanstructure" argument to add means/intercepts
  lavaan.semconffit3 <- lavaan(semmodel, 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,
                           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.semconffit3 <- lavaan.survey(lavaan.fit=lavaan.semconffit3,survey.design=survey.design2)
  assign(paste0("survey.semconffit3r",r),survey.semconffit3)
  # 2. METRIC EQUIVALENCE: set the factor loadings equal across groups

  lavaan.semmetrfit3 <- lavaan(semmodel, 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",
                          group = "cntry",
                          group.label = countries,
                          group.equal=c("loadings") #vector for multigroup analysis specify the pattern
                          )
  survey.semmetrfit3 <- lavaan.survey(lavaan.fit=lavaan.semmetrfit3,survey.design=survey.design2)

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

  lavaan.semscalfit3 <- lavaan(semmodel, 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",
                          group = "cntry",
                          group.label = countries,
                          group.equal=c("loadings","intercepts"))
  survey.semscalfit3 <- lavaan.survey(lavaan.fit=lavaan.semscalfit3,survey.design=survey.design2)


  # 4. check whether factor variances are equal across groups
  lavaan.semvarianfit3 <- lavaan(semmodel, 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",
                          group = "cntry",
                          group.label = countries,
                          group.equal=c("loadings","intercepts","lv.variances"))
  survey.semvarianfit3 <- lavaan.survey(lavaan.fit=lavaan.semvarianfit3,survey.design=survey.design2)

  seminvar <- data.frame(round(rbind(Configural = fitMeasures(survey.semconffit3, c("cfi", "rmsea", "sr
                                     Metric = fitMeasures(survey.semmetrfit3, c("cfi", "rmsea", "srmr")),
                                     Scalar = fitMeasures(survey.semscalfit3, c("cfi", "rmsea", "srmr")),
                                     Strict = fitMeasures(survey.semvarianfit3,  c("cfi", "rmsea", "srmr"))
  semdif <- seminvar %>%
      mutate_all(funs(. - lag(.)))
  print(paste("ESS round: ", r))
  print(cbind(seminvar,semdif))

}
```

```
## [1] "ESS round:  8"
##              cfi rmsea  srmr    cfi rmsea  srmr
## Configural 0.900 0.056 0.029     NA    NA    NA
## Metric     0.888 0.056 0.031 -0.012 0.000 0.002
## Scalar     0.812 0.071 0.040 -0.076 0.015 0.009
## Strict     0.775 0.074 0.061 -0.037 0.003 0.021
## [1] "ESS round:  9"
```

```
##              cfi rmsea  srmr    cfi rmsea  srmr
## Configural 0.917 0.050 0.025     NA    NA    NA
## Metric     0.905 0.051 0.029 -0.012 0.001 0.004
## Scalar     0.816 0.068 0.039 -0.089 0.017 0.010
## Strict     0.770 0.074 0.062 -0.046 0.006 0.023
```

```
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.fit3r8),
                 parameterEstimates(survey.fit3r9),
                 by=c("lhs", "op", "rhs"))
sum2 <-full_join(parameterEstimates(survey.conffit3r8),
                 parameterEstimates(survey.conffit3r9),
                 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.semconffit3r8),
                 parameterEstimates(survey.semconffit3r9),
                 by=c("lhs", "op", "rhs", "block", "group"))
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, (Upp
                                                     ifelse(rhs == "eisced3", "Highest level of educatio
                                                            ifelse(rhs == "domicil2", "Domicile (Town o
                                                                   ifelse(rhs == "domicil3", "Domicile
                                                                          ifelse(rhs == "domicil4", "Dom
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,"ParametersConffit.csv"), sep = ",", row.names = FALSE)
```

```
write.table(sum3,paste0(dir,"ParametersSemfit.csv"), sep = ",", row.names = FALSE)
write.table(sum4,paste0(dir,"ParametersSemConffit.csv"), sep = ",", row.names = FALSE)
```

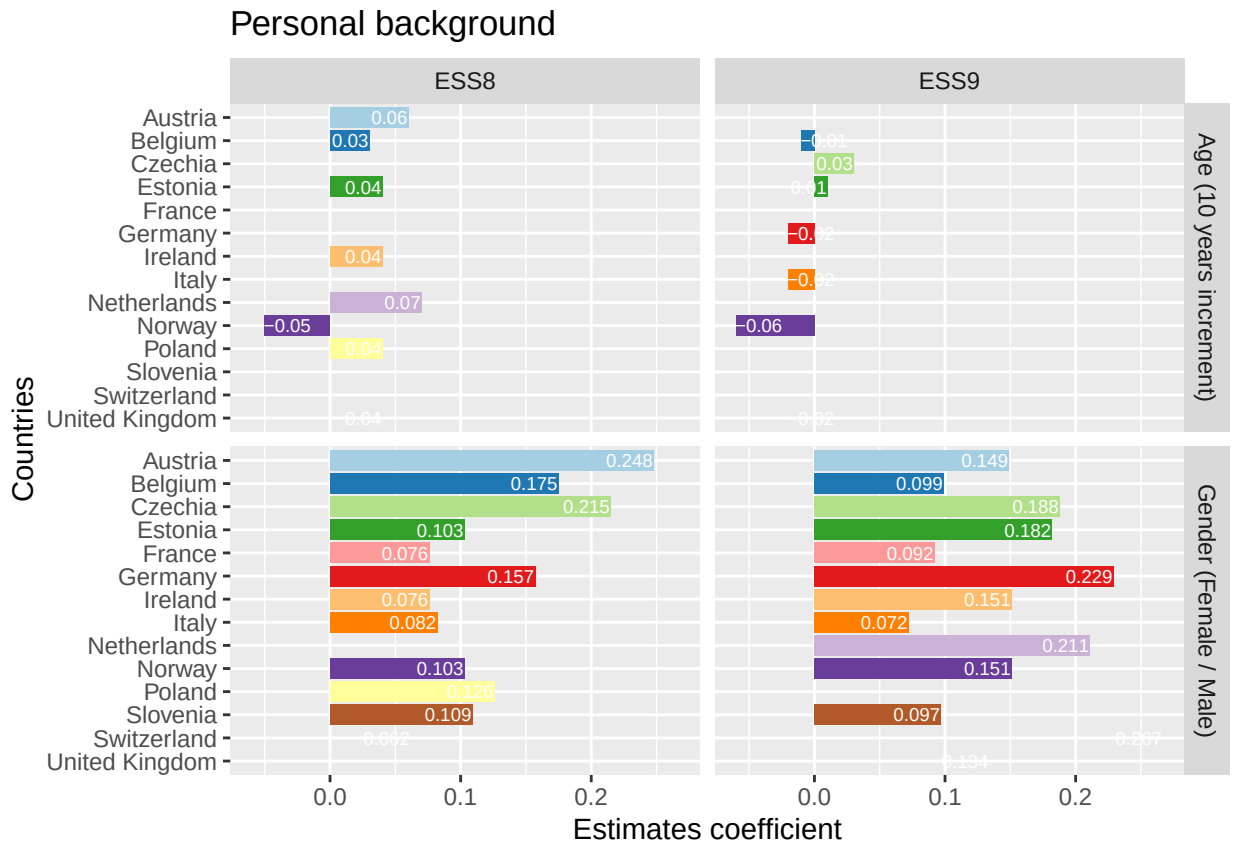
Results

```
coef<-rbind(cbind(ESS="ESS8",parameterEstimates(survey.semconffit3r8)),
            cbind(ESS="ESS9",parameterEstimates(survey.semconffit3r9)))

coeffilter <- coef %>%
  mutate(est = ifelse(pvalue > 0.05, NA, round(est,3)),
         est = ifelse(rhs == "agea", est*10, est),
         rhs1 = ifelse(rhs == "gndrD", "Gender (Female / Male)",
                                       ifelse(rhs == "agea", "Age (10 years increment)",
                                              ifelse(rhs == "eisced2", "Highest level of education, (Up
                                                     ifelse(rhs == "eisced3", "Highest level of educati
                                                            ifelse(rhs == "domicil2", "Domicile (Town o
                                                                   ifelse(rhs == "domicil3", "Domicile
                                                                          ifelse(rhs == "domicil4", "Do
         rhs1 = stringr::str_wrap(rhs1,30)) %>%
  filter(op == "~")

coeffilter1 <- coeffilter %>% filter(rhs %in% c("gndrD","agea"))
val_lab(coeffilter1$block) <- cntrylabels
use_labels(coeffilter1, {
  ggplot(coeffilter1,aes(x=factor(block), y=est, label = est, fill = factor(block))) +
  geom_bar(stat="identity", show.legend = FALSE) +
  coord_flip() +
  geom_text(hjust = ifelse(est >= 0, 1.02, 0.02), color ="white", size=2.5, ) +
  facet_grid(rhs1~ESS) +
    scale_x_discrete(limits = rev(levels(factor(block))))+
    xlab("Countries") + ylab("Estimates coefficient") +
    ggtitle("Personal background")+
    scale_fill_brewer(palette = "Paired")

})
```

```
## Warning: Removed 16 rows containing missing values (position_stack).
```

```
## Warning in RColorBrewer::brewer.pal(n, pal): n too large, allowed maximum for palette Paired is 12
## Returning the palette you asked for with that many colors
```

```
## Warning: Removed 16 rows containing missing values (geom_text).
```

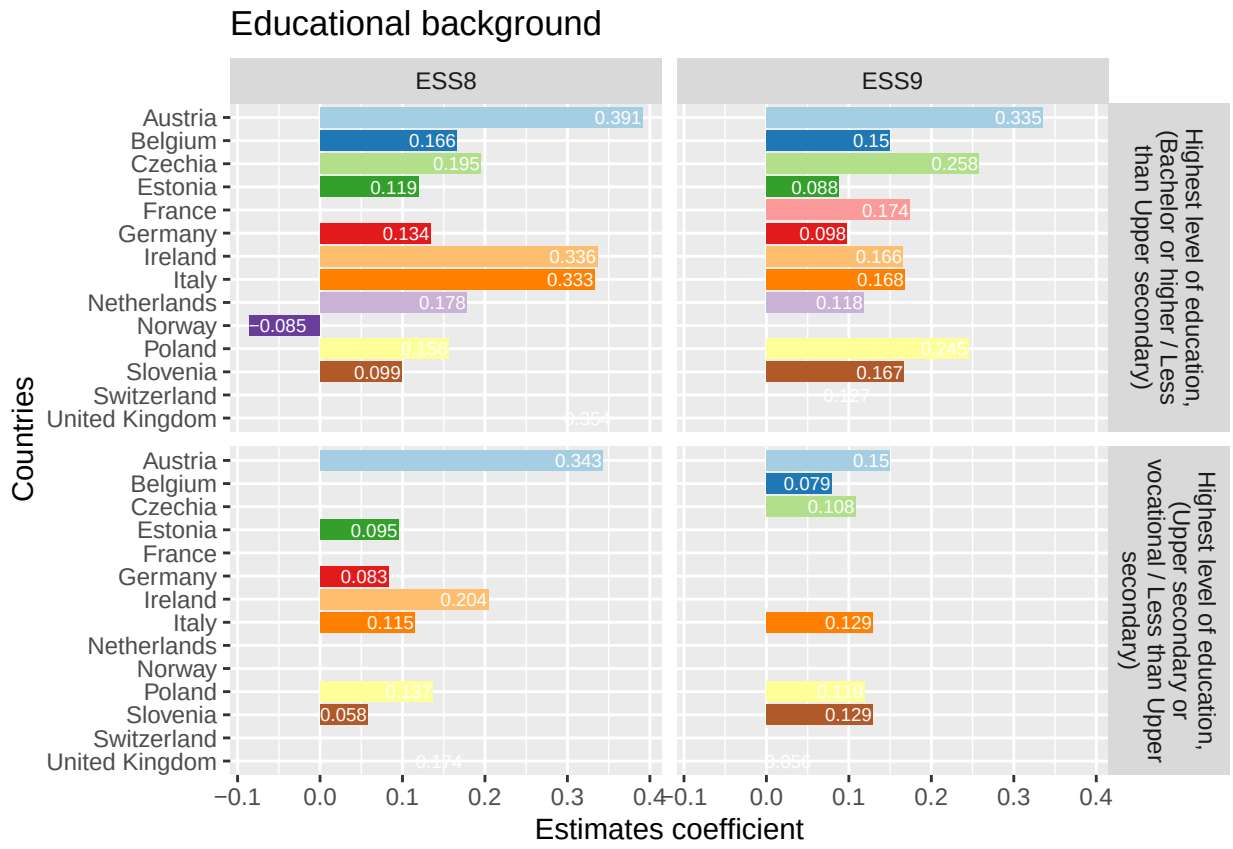



```
coeffilter2 <- coeffilter %>% filter(str_detect(rhs,"eisced"))
val_lab(coeffilter2$block) <- cntrylabels
use_labels(coeffilter2, {
  ggplot(coeffilter2,aes(x=factor(block), y=est, label = est, fill = factor(block))) +
  geom_bar(stat="identity", show.legend = FALSE) +
  coord_flip() +
  geom_text(hjust = ifelse(est >= 0, 1.02, 0.02), color ="white", size=2.5) +
  facet_grid(factor(rhs1)~ESS) +
    scale_x_discrete(limits = rev(levels(factor(block))))+
    xlab("Countries") + ylab("Estimates coefficient")+
    ggtitle("Educational background") +
    scale_fill_brewer(palette = "Paired")
})
```

```
## Warning: Removed 17 rows containing missing values (position_stack).
```

```
## Warning in RColorBrewer::brewer.pal(n, pal): n too large, allowed maximum for palette Paired is 12
## Returning the palette you asked for with that many colors
```

```
## Warning: Removed 17 rows containing missing values (geom_text).
```

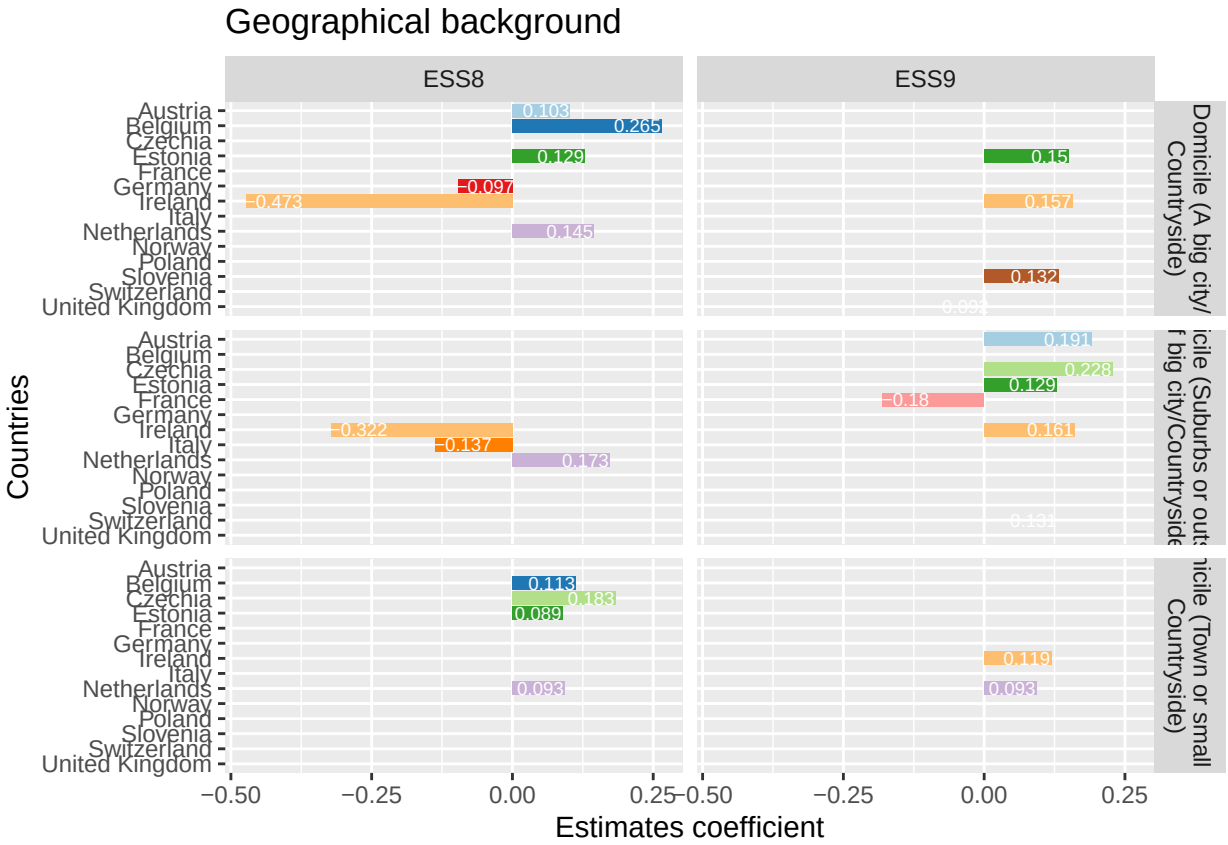



```
coeffilter3 <- coeffilter %>% filter(str_detect(rhs,"domicil"))
val_lab(coeffilter3$block) <- cntrylabels
use_labels(coeffilter3, {
  ggplot(coeffilter3,aes(x=factor(block), y=est, label = est, fill = factor(block))) +
  geom_bar(stat="identity", show.legend = FALSE) +
  coord_flip() +
  geom_text(hjust = ifelse(est >= 0, 1.02, 0.02), color ="white", size=2.5) +
  facet_grid(factor(rhs1)~ESS, labeller = label_context) +
    scale_x_discrete(limits = rev(levels(factor(block))))+
    xlab("Countries") + ylab("Estimates coefficient") +
    ggtitle("Geographical background") +
    scale_fill_brewer(palette = "Paired")
})
```

```
## Warning: Removed 59 rows containing missing values (position_stack).
```

```
## Warning in RColorBrewer::brewer.pal(n, pal): n too large, allowed maximum for palette Paired is 12
## Returning the palette you asked for with that many colors
```

```
## Warning: Removed 59 rows containing missing values (geom_text).
```


Geographical background
ESS8
ESS9
Domicile (A big city/ Countryside)
icile (Suburbs or outs f big city/Countryside
icile (Town or small Countryside)
Countries
Austria
Belgium
Czechia
Estonia
France
Germany
Ireland
Italy
Netherlands
Norway
Poland
Slovenia
Switzerland
United Kingdom
0.103
0.265
0.129
−0.097
−0.473
0.145
0.15
0.157
0.132
0.094
0.191
0.228
0.129
−0.18
−0.322
−0.137
0.173
0.161
0.134
0.113
0.183
0.089
0.093
0.119
0.093
−0.50
−0.25
0.00
0.25
Estimates coefficient