

PHQ-4 Measurement Invariance

Country-wise factor analyses & Multi-Group CFA

Table of contents

1	Analysis and paper setup	3
	Theoretical measurement model	3
	Estimate country-specific means and covariances	4
2	Separate Confirmatory Factor Analyses	8
2.1	Argentina	8
2.2	Australia	13
2.3	Brazil	18
2.4	China	23
2.5	Egypt	28
2.6	Germany	33
2.7	Hong Kong	38
2.8	India	43
2.9	Indonesia	48
2.10	Israel	53
2.11	Japan	58
2.12	Kenya	63
2.13	Mexico	68
2.14	Nigeria	73
2.15	Philippines	78
2.16	Poland	83
2.17	South Africa	88
2.18	Spain	93
2.19	Sweden	98
2.20	Tanzania	103
2.21	Turkey	108
2.22	United Kingdom	113
2.23	United States	118

3	Fit summary	123
3.1	Composite reliability and AVE estimates	124
3.2	Coefficient alpha	127
4	Multi-Group CFA	150
4.1	Covariance matrix input – allows for direct replication	150
4.2	Person-level data input	164
5	Summary and Conclusions	281

```
knitr::opts_chunk$set(
  warning = FALSE, error = FALSE, message = FALSE,
  cache = TRUE, autodep = TRUE
)
options(width = 200)

library(Rglobalflourishing)
load_packages()
```

```
function (...)
capture_output(.f(...))
<bytecode: 0x11cd57bf0>
<environment: 0x11cd57e90>
```

```
library(lavaan)
library(semTools)
library(dynamic)
library(survey)
library(polycor)
options(survey.lonely.psu = "certainty")

df.raw <- readr::read_rds(here("data", "gfs_all_countries_wave2_raw_recoded.rds"))
DIF.items <- c('COUNTRY')
PHQ4.items <- c(
  "DEPRESSED_Y2",
  "INTEREST_Y2",
  "CONTROL_WORRY_Y2",
  "FEEL_ANXIOUS_Y2"
)

df.cc <- df.raw %>%
  mutate(
```

```

n_resp = rowSums(across(all_of(PHQ4.items), ~!is.na(.x))),
across(all_of(PHQ4.items), \ (x){
  case_when(
    x == "1. Nearly every day" ~ 3,
    x == "2. More than half the days" ~ 2,
    x == "3. Several days" ~ 1,
    x == "4. Not at all" ~ 0
  )
})
) |>
filter(n_resp > 0)

```

1 Analysis and paper setup

For the factor analyses, these were conducted in two steps. First by fitting the 2 factor model used as the general structure of the PHQ-4. The fit of the model is provided including the residual correlation and modification indices. Secondly, we fit a series of increasingly restrictive multiple-group confirmatory factor analyses then compare the fit of these increasingly models. The factor scores from these increasingly restrictive models are then estimated for use elsewhere.

Theoretical measurement model

The current document serves as a technical dive into the configural invariance testing for the secure flourishing index (SFI) in Wave 2 of the Global Flourishing Study. The SFI is comprised of six domains each measured by two items.

1. Depressive Symptoms (feel depressed, loss of interest)
2. Anxiety Symptoms (feel anxious, loss of sense of control)

That is, in the lavaan like syntax:

```

mod <- "
dep =~ DEPRESSED_Y2 + INTEREST_Y2
anx =~ CONTROL_WORRY_Y2 + FEEL_ANXIOUS_Y2
"

```

Some evidence for equivalence of psychometric properties across countries exists (Lowe, et al., 2010). But, the invariance of psychometric propertoes has not been explored using the GFS dataset (wave 1 or wave 2) to the best of our knowledge.

Lowe, B., Wahl, I., Rose, M., Spitzer, C., Glaesmer, H., Wingenfeld, K., ... & Brahler, E. (2010). A 4-item measure of depression and anxiety: Validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. *Journal of Affective Disorders*, 122(1-2), 86-95.

Estimate country-specific means and covariances

To get the input for the factor analyses, we first computed the survey weighted and design adjusted covariance matrix and mean vector for the PHQ-4 items. We used the survey package (Lumley, 2004) to get these matrices to use as input in lavaan for the factor analyses.

Lumley, T. (2004). Analysis of complex survey samples. *Journal of Statistical Software*, 9(1): 1-19

Lumley, T. (2010). *Complex Surveys: A Guide to Analysis Using R*. John Wiley and Sons.

Rosseel Y., Jorgensen T. D., De Wilde L. (2025). lavaan: Latent Variable Analysis. R package version 0.6-20. <https://doi.org/10.32614/CRAN.package.lavaan>

Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1-36. <https://doi.org/10.18637/jss.v048.i02>

```
## compute the country-specific covariance matrices
COUNTRIES <- sort(as.character(unique(df.cc$COUNTRY)))
names(COUNTRIES) <- COUNTRIES

sample.stats <- map(COUNTRIES, \(x){

  tmp.dat = df.cc %>%
    filter(COUNTRY == x, !is.na(ANNUAL_WEIGHT_C2))

  ## SURVEY PACKAGE ESTIMATES
  svy.df <- svydesign(
    data = tmp.dat,
    ids = ~PSU,
    strata = ~STRATA,
    weights = ~ANNUAL_WEIGHT_C2
  )

  fit.mn <- svymean(reformulate(PHQ4.items), design = svy.df, na.rm=TRUE)
  fit.cov <- svyvar(reformulate(PHQ4.items), design = svy.df, na.rm=TRUE)
  fit.tbl <- lapply(PHQ4.items, FUN=function(x) svytable(reformulate(x), design = svy.df, ex
  fit.props <- lapply(PHQ4.items, FUN=function(x){
    df.tmp <- as.data.frame(svytable(reformulate(x), design = svy.df, na.rm=TRUE))
```

```

df.tmp$Freq <- df.tmp$Freq/sum(df.tmp$Freq)
df.tmp$Var = x
colnames(df.tmp) <- c("Category", "Freq", "Var")
df.tmp$Category <- as.factor(df.tmp$Category)
df.tmp
}) |>
  bind_rows()

## POLYCOR ESTIMATE W/ WCORR package
fit.polycorr <- matrix(0, ncol=length(PHQ4.items), nrow=length(PHQ4.items))
i <- 1; j<- 2
for(i in 1:length(PHQ4.items)){
  for(j in 1:length(PHQ4.items)){
    if(i == j){
      fit.polycorr[i,j] = 1.0
    } else {
      df <- na.omit(tmp.dat[,c(PHQ4.items[i], PHQ4.items[j], 'ANNUAL_WEIGHT_C2')])
      fit.polycorr[i,j] = wCorr::weightedCorr(
        as.numeric(df[,1,drop=TRUE]), as.numeric(df[,2,drop=TRUE]),
        weights=as.numeric(df[,3,drop=TRUE]),
        method = 'Polychoric', ML = TRUE)
    }
  }
}

## COMPUTE COVARIANCE MATRIX OF SAMPLE STATISTICS (thresholds + correlations)
## Need to estimate a CFA model to copy over the attributes
fit <- cfa(
  model = mod
  , data = tmp.dat
  , std.lv = TRUE
  , ordered = TRUE
)
## must use replicate weights
sb.svy.df <- as.svrepdesign(svy.df,type="subbootstrap") ## use 'auto' if not sure what t
# okay... auto is very slow for larger sample sizes...switching to "subbootstrap"

fit.repweights <- withReplicates(sb.svy.df, theta = function(w, data){

  ## thresholds
  fit.th <- lapply(PHQ4.items, FUN=function(x){

```

```

y = data[[x]]
yna = !is.na(y)

data.frame(
  th = c(
    qnorm(sum(w[yna]*(y[yna] == 0))/sum(w[yna])),
    qnorm(sum(w[yna]*(y[yna] <= 1))/sum(w[yna])),
    qnorm(sum(w[yna]*(y[yna] <= 2))/sum(w[yna]))
  )
)
#df.tmp$Freq <-
#df.tmp$Var = x
#colnames(df.tmp) <- c("Category", "Freq", "Var")
#df.tmp$Category <- as.factor(df.tmp$Category)
#df.tmp
}) |>
  bind_rows()
fit.th <- as.numeric(fit.th[,1,drop=TRUE])
fit.th <- fit.th[is.finite(fit.th)]

## polychoric correlations
data$w <- w
tmp.sdf <- svydesign(ids=~1, weights=~w, data=data)
K <- length(PHQ4.items)
fit.cor <- numeric(K*(K-1)/2)
ii <- 1
for(i in 1:K){
  for(j in 1:K){
    if(i < j){
      tmp.tbl <- svytable(reformulate(PHQ4.items[c(i,j)]),design=tmp.sdf)
      fit.cor[ii] <- polychor(tmp.tbl)
      ii = ii + 1
    }
  }
}

c(fit.th,fit.cor)
})
#attributes(fit.polycorr)

sample.th <- fit.repweights[1:12]
attr(sample.th, "th.idx") <- lavInspect(fit, "th.idx")

```

```

sample.cov <- diag(1, ncol=4, nrow=4)
sample.cov[lower.tri(sample.cov)] <- fit.repweights[13:18]
sample.cov[upper.tri(sample.cov)] <- t(sample.cov)[upper.tri(sample.cov)]
rownames(sample.cov) <- colnames(sample.cov) <- PHQ4.items
sample.mean <- rep(0, 4)
sample.nobs <- sum(tmp.dat$ANNUAL_WEIGHT_C2)
NACOV <- as.matrix(attr(fit.repweights, "var"))*sample.nobs
WLS.V <- DWLS.V <- NULL
try({
  WLS.V <- solve(NACOV)
})
try({
  DWLS.V <- solve(diag(diag(NACOV)))
})

list(
  country = x,
  mean = fit.mn,
  cov = fit.cov,
  cat.counts = fit.tbl,
  cat.props = fit.props,
  ng = sum(tmp.dat$ANNUAL_WEIGHT_C2),
  sample.th = sample.th,
  sample.cov = sample.cov,
  sample.mean = sample.mean,
  sample.nobs = sample.nobs,
  NACOV = NACOV,
  WLS.V = WLS.V,
  DWLS.V = DWLS.V
)

})

save(sample.stats, file=here("data", "replication_data.RData"))

LIST.CFA.FIT <- list()

```

2 Separate Confirmatory Factor Analyses

2.1 Argentina

2.1.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

The reported correlation is the polychoric correlation.

```
ci <- 1
cur.country <- COUNTRIES[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.74	0.70	
INTEREST_Y2	0.74	1.00	0.57	
CONTROL_WORRY_Y2	0.70	0.57	1.00	
FEEL_ANXIOUS_Y2	0.70	0.60	0.75	
X				
Mean	0.91	1.09	1.03	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	45.44	30.40	12.91	
INTEREST_Y2.1	33.05	38.00	15.72	
CONTROL_WORRY_Y2.1	41.82	28.29	14.03	
FEEL_ANXIOUS_Y2.1	35.78	34.19	14.37	

2.1.2 Confirmatory factor analysis

First, all analyses are conducted by country to provide an in-depth assessment of the fit of the two-factor model without adding the complexity of multigroup models or invariance testing.

Secondly, these by-country analyses are conducted using the complex-survey adjusted estimates of the item covariance matrix and the item means. This allows for the a solid within country evaluation of the fit of the model while controlling for the complex sampling design.

The major disadvantage of this approach is that is does not account for the discrete nature of these analyses. One might be able to estimate the complex-survey adjusted

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
  , sample.nobs = sample.stats[[cur.country]]$sample.nobs
  , sample.th = sample.stats[[cur.country]]$sample.th
  , WLS.V = sample.stats[[cur.country]]$WLS.V
  , NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)
```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.038	0.999	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.228
Sensitivity 1%	1%	4%	1%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
1.156	1	NA	0.004	0.007	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 14 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2932.00000000153

Model Test User Model:

	Standard	Scaled
Test Statistic	1.156	1.448
Degrees of freedom	1	1
P-value (Unknown)	NA	0.229
Scaling correction factor		0.798
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	18733.066	4377.656
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		4.281

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	0.999
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		0.998

Root Mean Square Error of Approximation:

RMSEA	0.007	0.012
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.050	0.053
P-value H ₀ : RMSEA ≤ 0.050	0.949	0.934
P-value H ₀ : RMSEA ≥ 0.080	0.001	0.001
Robust RMSEA		0.028
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.121
P-value H ₀ : Robust RMSEA ≤ 0.050		0.498
P-value H ₀ : Robust RMSEA ≥ 0.080		0.248

Standardized Root Mean Square Residual:

SRMR	0.004	0.004
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.938	0.015	62.263	0.000	0.909	0.968	0.938	0.938
INTEREST_Y2	0.786	0.016	49.881	0.000	0.755	0.817	0.786	0.786
anx =~								
CONTROL_WORRY_	0.860	0.017	51.393	0.000	0.828	0.893	0.860	0.860
FEEL_ANXIOUS_Y	0.874	0.013	68.626	0.000	0.849	0.899	0.874	0.874

Covariances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.858	0.023	36.914	0.000	0.812	0.903	0.858	0.858

Thresholds:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.115	0.030	-3.764	0.000	-0.174	-0.055	-	
0.115 -0.115								
DEPRESSED_Y2 2	0.701	0.029	24.424	0.000	0.645	0.758	0.701	0.701
DEPRESSED_Y2 3	1.214	0.038	32.003	0.000	1.139	1.288	1.214	1.214
INTEREST_Y2 t1	-0.439	0.032	-13.738	0.000	-0.501	-0.376	-	
0.439 -0.439								
INTEREST_Y2 t2	0.555	0.033	17.051	0.000	0.491	0.619	0.555	0.555
INTEREST_Y2 t3	1.116	0.043	26.103	0.000	1.032	1.199	1.116	1.116
CONTROL_WORRY_	-0.207	0.030	-6.887	0.000	-0.265	-0.148	-	
0.207 -0.207								
CONTROL_WORRY_	0.527	0.033	15.999	0.000	0.463	0.592	0.527	0.527
CONTROL_WORRY_	1.000	0.042	23.761	0.000	0.918	1.083	1.000	1.000
FEEL_ANXIOUS_Y	-0.364	0.027	-13.676	0.000	-0.417	-0.312	-	
0.364 -0.364								
FEEL_ANXIOUS_Y	0.523	0.034	15.480	0.000	0.457	0.590	0.523	0.523
FEEL_ANXIOUS_Y	1.009	0.040	25.287	0.000	0.930	1.087	1.009	1.009

Variances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.119				0.119	0.119	0.119	0.119
.INTEREST_Y2	0.382				0.382	0.382	0.382	0.382
.CONTROL_WORRY_	0.260				0.260	0.260	0.260	0.260

.FEEL_ANXIOUS_Y	0.236	0.236	0.236	0.236	0.236
dep	1.000	1.000	1.000	1.000	1.000
anx	1.000	1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.1.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	0.00	-0.01	0.00	
FEEL_ANXIOUS_Y2	-0.01	0.01	0.00	

2.1.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	1.16	-0.03	-0.03
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	1.16	0.02	0.02
INTEREST_Y2	~~	CONTROL_WORRY_Y2	1.16	-0.02	-0.02
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	1.16	0.03	0.03

2.2 Australia

2.2.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.80	0.75	
INTEREST_Y2	0.80	1.00	0.61	
CONTROL_WORRY_Y2	0.75	0.61	1.00	
FEEL_ANXIOUS_Y2	0.74	0.59	0.85	
X				
Mean	0.78	0.83	0.82	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	46.99	34.99	10.60	
INTEREST_Y2.1	44.66	35.21	12.43	
CONTROL_WORRY_Y2.1	46.55	33.26	12.16	
FEEL_ANXIOUS_Y2.1	37.65	39.55	13.33	

2.2.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.003	0.036	1	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.219
Sensitivity 2%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.763	1	NA	0.003	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 16 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2582.00004721915

Model Test User Model:

	Standard	Scaled
Test Statistic	0.763	1.461
Degrees of freedom	1	1
P-value (Unknown)	NA	0.227
Scaling correction factor		0.522
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	27081.552	4125.199
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		6.568

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	0.999
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		0.998

Root Mean Square Error of Approximation:

RMSEA	0.000	0.013
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.049	0.056
P-value H ₀ : RMSEA ≤ 0.050	0.953	0.909
P-value H ₀ : RMSEA ≥ 0.080	0.001	0.002
Robust RMSEA		0.033
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.139
P-value H ₀ : Robust RMSEA ≤ 0.050		0.439
P-value H ₀ : Robust RMSEA ≥ 0.080		0.332

Standardized Root Mean Square Residual:

SRMR	0.003	0.003
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.999	0.014	69.039	0.000	0.971	1.027	0.999	0.999
INTEREST_Y2	0.804	0.020	41.081	0.000	0.766	0.843	0.804	0.804

anx =~								
CONTROL_WORRY_	0.931	0.012	77.605	0.000	0.907	0.954	0.931	0.931
FEEL_ANXIOUS_Y	0.911	0.015	58.949	0.000	0.880	0.941	0.911	0.911
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.809	0.024	34.382	0.000	0.763	0.855	0.809	0.809
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.076	0.031	-2.436	0.015	-0.136	-0.015	-	
0.076 -0.076								
DEPRESSED_Y2 2	0.914	0.037	24.813	0.000	0.842	0.987	0.914	0.914
DEPRESSED_Y2 3	1.445	0.053	27.524	0.000	1.342	1.548	1.445	1.445
INTEREST_Y2 t1	-0.134	0.034	-3.925	0.000	-0.201	-0.067	-	
0.134 -0.134								
INTEREST_Y2 t2	0.837	0.038	21.976	0.000	0.762	0.912	0.837	0.837
INTEREST_Y2 t3	1.426	0.056	25.496	0.000	1.316	1.535	1.426	1.426
CONTROL_WORRY_	-0.087	0.030	-2.914	0.004	-0.145	-0.028	-	
0.087 -0.087								
CONTROL_WORRY_	0.835	0.037	22.626	0.000	0.762	0.907	0.835	0.835
CONTROL_WORRY_	1.403	0.054	25.900	0.000	1.297	1.509	1.403	1.403
FEEL_ANXIOUS_Y	-0.315	0.032	-9.719	0.000	-0.378	-0.251	-	
0.315 -0.315								
FEEL_ANXIOUS_Y	0.745	0.034	21.620	0.000	0.678	0.813	0.745	0.745
FEEL_ANXIOUS_Y	1.312	0.054	24.101	0.000	1.205	1.419	1.312	1.312
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.002				0.002	0.002	0.002	0.002
.INTEREST_Y2	0.353				0.353	0.353	0.353	0.353
.CONTROL_WORRY_	0.134				0.134	0.134	0.134	0.134
.FEEL_ANXIOUS_Y	0.171				0.171	0.171	0.171	0.171
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.2.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.01	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.01	-0.00	

2.2.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.76	-0.02	-0.02
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.76	0.02	0.02
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.76	0.02	0.02
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.76	-0.02	-0.02

2.3 Brazil

2.3.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.68	0.66	
INTEREST_Y2	0.68	1.00	0.57	
CONTROL_WORRY_Y2	0.66	0.57	1.00	
FEEL_ANXIOUS_Y2	0.74	0.58	0.70	
X				
Mean	0.95	1.20	1.23	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	45.23	27.83	14.22	
INTEREST_Y2.1	34.12	29.40	19.02	
CONTROL_WORRY_Y2.1	34.67	28.82	15.14	
FEEL_ANXIOUS_Y2.1	29.31	33.31	15.26	

2.3.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.005	0.04	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.263
Sensitivity 0%	4%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
5.843	1	NA	0.009	0.034	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 13 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	4274.00000072482

Model Test User Model:

	Standard	Scaled
Test Statistic	5.843	5.199
Degrees of freedom	1	1
P-value (Unknown)	NA	0.023
Scaling correction factor		1.124
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	23451.536	9067.915
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.586

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	0.999	0.997
Robust Comparative Fit Index (CFI)		0.997
Robust Tucker-Lewis Index (TLI)		0.983

Root Mean Square Error of Approximation:

RMSEA	0.034	0.031
90 Percent confidence interval - lower	0.012	0.009
90 Percent confidence interval - upper	0.062	0.060
P-value H ₀ : RMSEA ≤ 0.050	0.803	0.838
P-value H ₀ : RMSEA ≥ 0.080	0.002	0.002
Robust RMSEA		0.079
90 Percent confidence interval - lower		0.024
90 Percent confidence interval - upper		0.151
P-value H ₀ : Robust RMSEA ≤ 0.050		0.162
P-value H ₀ : Robust RMSEA ≥ 0.080		0.582

Standardized Root Mean Square Residual:

SRMR	0.009	0.009
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.919	0.012	77.250	0.000	0.896	0.942	0.919	0.919
INTEREST_Y2	0.740	0.014	51.343	0.000	0.712	0.769	0.740	0.740

anx =~									
CONTROL_WORRY_	0.807	0.017	47.808	0.000	0.774	0.840	0.807	0.807	
FEEL_ANXIOUS_Y	0.871	0.014	64.502	0.000	0.844	0.897	0.871	0.871	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.914	0.013	67.735	0.000	0.888	0.941	0.914	0.914	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.120	0.023	-5.176	0.000	-0.165	-0.074	-		
0.120 -0.120									
DEPRESSED_Y2 2	0.615	0.027	22.747	0.000	0.562	0.668	0.615	0.615	
DEPRESSED_Y2 3	1.140	0.038	30.084	0.000	1.066	1.214	1.140	1.140	
INTEREST_Y2 t1	-0.409	0.028	-14.652	0.000	-0.464	-0.355	-		
0.409 -0.409									
INTEREST_Y2 t2	0.345	0.027	12.658	0.000	0.292	0.399	0.345	0.345	
INTEREST_Y2 t3	0.936	0.038	24.926	0.000	0.862	1.010	0.936	0.936	
CONTROL_WORRY_	-0.394	0.020	-20.211	0.000	-0.433	-0.356	-		
0.394 -0.394									
CONTROL_WORRY_	0.345	0.022	15.924	0.000	0.302	0.387	0.345	0.345	
CONTROL_WORRY_	0.794	0.033	24.001	0.000	0.729	0.858	0.794	0.794	
FEEL_ANXIOUS_Y	-0.544	0.031	-17.600	0.000	-0.605	-0.484	-		
0.544 -0.544									
FEEL_ANXIOUS_Y	0.322	0.028	11.496	0.000	0.267	0.377	0.322	0.322	
FEEL_ANXIOUS_Y	0.768	0.034	22.655	0.000	0.702	0.835	0.768	0.768	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.155				0.155	0.155	0.155	0.155	
.INTEREST_Y2	0.452				0.452	0.452	0.452	0.452	
.CONTROL_WORRY_	0.348				0.348	0.348	0.348	0.348	
.FEEL_ANXIOUS_Y	0.241				0.241	0.241	0.241	0.241	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.3.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.02	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.01	-0.00	

2.3.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	5.84	0.06	0.06
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	5.84	-0.05	-0.05
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	5.84	-0.06	-0.06
INTEREST_Y2	~~	CONTROL_WORRY_Y2	5.84	0.05	0.05

2.4 China

2.4.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.54	0.72	
INTEREST_Y2	0.54	1.00	0.54	
CONTROL_WORRY_Y2	0.72	0.54	1.00	
FEEL_ANXIOUS_Y2	0.72	0.48	0.78	
X				
Mean	0.73	0.99	0.61	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	39.99	48.97	9.23	
INTEREST_Y2.1	29.93	44.78	21.55	
CONTROL_WORRY_Y2.1	53.37	34.32	9.98	
FEEL_ANXIOUS_Y2.1	37.17	50.68	9.93	

2.4.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.005	0.038	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.376
Sensitivity 0%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
11.197	1	NA	0.011	0.047	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 15 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	4544.00000002019

Model Test User Model:

	Standard	Scaled
Test Statistic	11.197	10.744
Degrees of freedom	1	1
P-value (Unknown)	NA	0.001
Scaling correction factor		1.042
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	37008.511	12067.662
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		3.067

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	0.999
Tucker-Lewis Index (TLI)	0.998	0.995
Robust Comparative Fit Index (CFI)		0.996
Robust Tucker-Lewis Index (TLI)		0.975

Root Mean Square Error of Approximation:

RMSEA	0.047	0.046
90 Percent confidence interval - lower	0.025	0.024
90 Percent confidence interval - upper	0.074	0.073
P-value H ₀ : RMSEA ≤ 0.050	0.510	0.537
P-value H ₀ : RMSEA ≥ 0.080	0.020	0.017
Robust RMSEA		0.097
90 Percent confidence interval - lower		0.051
90 Percent confidence interval - upper		0.153
P-value H ₀ : Robust RMSEA ≤ 0.050		0.047
P-value H ₀ : Robust RMSEA ≥ 0.080		0.759

Standardized Root Mean Square Residual:

SRMR	0.011	0.011
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.870	0.013	65.419	0.000	0.844	0.896	0.870	0.870
INTEREST_Y2	0.620	0.014	42.795	0.000	0.592	0.648	0.620	0.620

anx =~								
CONTROL_WORRY_	0.896	0.009	102.918	0.000	0.879	0.913	0.896	0.896
FEEL_ANXIOUS_Y	0.874	0.008	104.230	0.000	0.857	0.890	0.874	0.874
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.935	0.014	65.099	0.000	0.906	0.963	0.935	0.935
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.254	0.019	-13.301	0.000	-0.291	-0.216	-	-
0.254 -0.254								
DEPRESSED_Y2 2	1.225	0.025	48.730	0.000	1.176	1.274	1.225	1.225
DEPRESSED_Y2 3	2.097	0.048	44.150	0.000	2.004	2.190	2.097	2.097
INTEREST_Y2 t1	-0.526	0.019	-27.677	0.000	-0.564	-0.489	-	-
0.526 -0.526								
INTEREST_Y2 t2	0.665	0.026	25.693	0.000	0.615	0.716	0.665	0.665
INTEREST_Y2 t3	1.781	0.036	50.088	0.000	1.711	1.851	1.781	1.781
CONTROL_WORRY_	0.084	0.022	3.822	0.000	0.041	0.128	0.084	0.084
CONTROL_WORRY_	1.159	0.030	38.511	0.000	1.100	1.218	1.159	1.159
CONTROL_WORRY_	1.989	0.040	50.138	0.000	1.911	2.066	1.989	1.989
FEEL_ANXIOUS_Y	-0.327	0.023	-14.541	0.000	-0.371	-0.283	-	-
0.327 -0.327								
FEEL_ANXIOUS_Y	1.168	0.028	41.608	0.000	1.113	1.223	1.168	1.168
FEEL_ANXIOUS_Y	2.010	0.044	45.618	0.000	1.924	2.097	2.010	2.010
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.243				0.243	0.243	0.243	0.243
.INTEREST_Y2	0.616				0.616	0.616	0.616	0.616
.CONTROL_WORRY_	0.197				0.197	0.197	0.197	0.197
.FEEL_ANXIOUS_Y	0.237				0.237	0.237	0.237	0.237
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.4.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.02	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.02	0.00	

2.4.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	CONTROL_WORRY_Y2	11.19	0.06	0.06
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	11.19	-0.06	-0.06
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	11.19	0.08	0.08
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	11.19	-0.08	-0.08

2.5 Egypt

2.5.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.48	0.61	
INTEREST_Y2	0.48	1.00	0.44	
CONTROL_WORRY_Y2	0.61	0.44	1.00	
FEEL_ANXIOUS_Y2	0.60	0.44	0.71	
X				
Mean	1.08	1.10	1.14	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	37.38	33.38	12.64	
INTEREST_Y2.1	32.32	39.56	14.29	
CONTROL_WORRY_Y2.1	34.67	33.71	14.41	
FEEL_ANXIOUS_Y2.1	21.08	37.62	13.49	

2.5.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.006	0.038	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.42
Sensitivity 1%	1%	5%	1%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.082	1	NA	0.001	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 13 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	3040.00004437456

Model Test User Model:

	Standard	Scaled
Test Statistic	0.082	0.095
Degrees of freedom	1	1
P-value (Unknown)	NA	0.758
Scaling correction factor		0.872
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	12857.131	3706.436
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		3.470

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.001
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.004

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.032	0.033
P-value H ₀ : RMSEA ≤ 0.050	0.994	0.994
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.060
P-value H ₀ : Robust RMSEA ≤ 0.050		0.918
P-value H ₀ : Robust RMSEA ≥ 0.080		0.015

Standardized Root Mean Square Residual:

SRMR	0.001	0.001
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.820	0.023	35.442	0.000	0.775	0.866	0.820	0.820
INTEREST_Y2	0.588	0.022	26.587	0.000	0.545	0.632	0.588	0.588

anx =~								
CONTROL_WORRY_	0.847	0.015	55.951	0.000	0.817	0.877	0.847	0.847
FEEL_ANXIOUS_Y	0.836	0.020	42.102	0.000	0.797	0.875	0.836	0.836
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.882	0.024	36.222	0.000	0.834	0.929	0.882	0.882
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.322	0.032	-10.114	0.000	-0.384	-0.259	-	
0.322 -0.322								
DEPRESSED_Y2 2	0.546	0.037	14.575	0.000	0.473	0.620	0.546	0.546
DEPRESSED_Y2 3	0.970	0.033	29.491	0.000	0.906	1.035	0.970	0.970
INTEREST_Y2 t1	-0.459	0.027	-17.134	0.000	-0.511	-0.406	-	
0.459 -0.459								
INTEREST_Y2 t2	0.579	0.032	18.176	0.000	0.517	0.642	0.579	0.579
INTEREST_Y2 t3	1.088	0.041	26.448	0.000	1.007	1.169	1.088	1.088
CONTROL_WORRY_	-0.394	0.033	-12.068	0.000	-0.458	-0.330	-	
0.394 -0.394								
CONTROL_WORRY_	0.478	0.036	13.178	0.000	0.407	0.550	0.478	0.478
CONTROL_WORRY_	0.946	0.045	20.805	0.000	0.857	1.035	0.946	0.946
FEEL_ANXIOUS_Y	-0.804	0.035	-23.066	0.000	-0.872	-0.735	-	
0.804 -0.804								
FEEL_ANXIOUS_Y	0.220	0.032	6.776	0.000	0.156	0.283	0.220	0.220
FEEL_ANXIOUS_Y	0.588	0.034	17.178	0.000	0.521	0.655	0.588	0.588
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.327				0.327	0.327	0.327	0.327
.INTEREST_Y2	0.654				0.654	0.654	0.654	0.654
.CONTROL_WORRY_	0.282				0.282	0.282	0.282	0.282
.FEEL_ANXIOUS_Y	0.301				0.301	0.301	0.301	0.301
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.5.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	0.00	-0.00	0.00	
FEEL_ANXIOUS_Y2	-0.00	0.00	0.00	

2.5.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.08	-0.01	-0.01
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.08	0.01	0.01
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.08	0.01	0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.08	-0.01	-0.01

2.6 Germany

2.6.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.80	0.71	
INTEREST_Y2	0.80	1.00	0.65	
CONTROL_WORRY_Y2	0.71	0.65	1.00	
FEEL_ANXIOUS_Y2	0.70	0.64	0.67	
X				
Mean	0.64	0.57	0.73	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	54.09	32.50	8.64	
INTEREST_Y2.1	59.94	27.18	8.70	
CONTROL_WORRY_Y2.1	50.82	31.93	10.93	
FEEL_ANXIOUS_Y2.1	44.55	39.84	10.69	

2.6.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.038	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.19
Sensitivity 5%	5%	5%	2%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.108	1	NA	0.001	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 16 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	5529.00000403925

Model Test User Model:

	Standard	Scaled
Test Statistic	0.108	0.093
Degrees of freedom	1	1
P-value (Unknown)	NA	0.761
Scaling correction factor		1.161
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	48503.795	10440.741
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		4.647

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.001
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.003

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.025	0.024
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.067
P-value H ₀ : Robust RMSEA ≤ 0.050		0.899
P-value H ₀ : Robust RMSEA ≥ 0.080		0.026

Standardized Root Mean Square Residual:

SRMR	0.001	0.001
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.938	0.007	136.628	0.000	0.924	0.951	0.938	0.938
INTEREST_Y2	0.855	0.010	83.923	0.000	0.835	0.875	0.855	0.855

```

    anx =~
      CONTROL_WORRY_    0.826    0.012    70.250    0.000    0.803    0.849    0.826    0.826
      FEEL_ANXIOUS_Y    0.813    0.013    64.511    0.000    0.789    0.838    0.813    0.813

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.917    0.009   101.218    0.000    0.899    0.934    0.917    0.917

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1    0.103    0.024    4.208    0.000    0.055    0.151    0.103    0.103
    DEPRESSED_Y2|2    1.107    0.025   43.660    0.000    1.058    1.157    1.107    1.107
    DEPRESSED_Y2|3    1.668    0.036   45.988    0.000    1.597    1.739    1.668    1.668
    INTEREST_Y2|t1    0.252    0.022   11.302    0.000    0.208    0.296    0.252    0.252
    INTEREST_Y2|t2    1.132    0.028   39.940    0.000    1.077    1.188    1.132    1.132
    INTEREST_Y2|t3    1.731    0.036   47.548    0.000    1.660    1.802    1.731    1.731
    CONTROL_WORRY_    0.021    0.023    0.889    0.374   -0.025    0.066    0.021    0.021
    CONTROL_WORRY_    0.944    0.028   34.075    0.000    0.890    0.999    0.944    0.944
    CONTROL_WORRY_    1.529    0.033   46.782    0.000    1.465    1.593    1.529    1.529
    FEEL_ANXIOUS_Y   -0.137    0.022   -6.161    0.000   -0.181   -0.094    -
0.137   -0.137
    FEEL_ANXIOUS_Y    1.010    0.027   37.384    0.000    0.957    1.063    1.010    1.010
    FEEL_ANXIOUS_Y    1.652    0.042   39.307    0.000    1.570    1.735    1.652    1.652

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.121
                                0.121    0.121    0.121    0.121
    .INTEREST_Y2     0.269
                                0.269    0.269    0.269    0.269
    .CONTROL_WORRY_  0.317
                                0.317    0.317    0.317    0.317
    .FEEL_ANXIOUS_Y  0.339
                                0.339    0.339    0.339    0.339
    dep              1.000
                                1.000    1.000    1.000    1.000
    anx              1.000
                                1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.6.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.00	-0.00	

2.6.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.11	0.01	0.01
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.11	-0.01	-0.01
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.11	-0.01	-0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.11	0.01	0.01

2.7 Hong Kong

2.7.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.55	0.86	
INTEREST_Y2	0.55	1.00	0.49	
CONTROL_WORRY_Y2	0.86	0.49	1.00	
FEEL_ANXIOUS_Y2	0.84	0.48	0.85	
X				
Mean	0.87	1.17	0.74	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	33.59	48.05	15.55	
INTEREST_Y2.1	22.80	44.24	26.28	
CONTROL_WORRY_Y2.1	45.88	36.83	14.85	
FEEL_ANXIOUS_Y2.1	29.76	50.92	15.02	

2.7.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.008	0.07	0.998	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.431
Sensitivity 0%	0%	4%	0%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.001	1	NA	0	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 17 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	707.000248016404

Model Test User Model:

	Standard	Scaled
Test Statistic	0.001	0.001
Degrees of freedom	1	1
P-value (Unknown)	NA	0.979
Scaling correction factor		1.683
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	17837.243	2025.433
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		8.816

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.003
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.016

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.000	0.000
P-value H ₀ : RMSEA ≤ 0.050	0.988	0.991
P-value H ₀ : RMSEA ≥ 0.080	0.003	0.002
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.000
P-value H ₀ : Robust RMSEA ≤ 0.050		0.981
P-value H ₀ : Robust RMSEA ≥ 0.080		0.015

Standardized Root Mean Square Residual:

SRMR	0.000	0.000
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.981	0.024	40.839	0.000	0.934	1.028	0.981	0.981
INTEREST_Y2	0.562	0.054	10.311	0.000	0.455	0.669	0.562	0.562

anx =~								
CONTROL_WORRY_	0.935	0.022	41.726	0.000	0.891	0.979	0.935	0.935
FEEL_ANXIOUS_Y	0.912	0.017	53.282	0.000	0.878	0.945	0.912	0.912
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.940	0.026	35.644	0.000	0.888	0.992	0.940	0.940
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.424	0.065	-6.487	0.000	-0.552	-0.296	-	-
0.424 -0.424								
DEPRESSED_Y2 2	0.902	0.074	12.251	0.000	0.758	1.046	0.902	0.902
DEPRESSED_Y2 3	1.910	0.112	17.018	0.000	1.690	2.130	1.910	1.910
INTEREST_Y2 t1	-0.745	0.069	-10.788	0.000	-0.881	-0.610	-	-
0.745 -0.745								
INTEREST_Y2 t2	0.441	0.065	6.836	0.000	0.315	0.568	0.441	0.441
INTEREST_Y2 t3	1.501	0.122	12.301	0.000	1.261	1.740	1.501	1.501
CONTROL_WORRY_	-0.103	0.065	-1.595	0.111	-0.230	0.024	-	-
0.103 -0.103								
CONTROL_WORRY_	0.943	0.075	12.593	0.000	0.796	1.090	0.943	0.943
CONTROL_WORRY_	1.973	0.128	15.425	0.000	1.722	2.223	1.973	1.973
FEEL_ANXIOUS_Y	-0.531	0.058	-9.121	0.000	-0.646	-0.417	-	-
0.531 -0.531								
FEEL_ANXIOUS_Y	0.866	0.061	14.109	0.000	0.746	0.986	0.866	0.866
FEEL_ANXIOUS_Y	1.717	0.098	17.541	0.000	1.525	1.908	1.717	1.717
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.038				0.038	0.038	0.038	0.038
.INTEREST_Y2	0.684				0.684	0.684	0.684	0.684
.CONTROL_WORRY_	0.125				0.125	0.125	0.125	0.125
.FEEL_ANXIOUS_Y	0.169				0.169	0.169	0.169	0.169
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.7.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	0.00	-0.00	0.00	
FEEL_ANXIOUS_Y2	-0.00	0.00	-0.00	

2.7.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.00	0.00	0.00
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.00	-0.00	-0.00
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.00	0.00	0.00
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.00	-0.00	-0.00

2.8 India

2.8.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.37	0.54	
INTEREST_Y2	0.37	1.00	0.32	
CONTROL_WORRY_Y2	0.54	0.32	1.00	
FEEL_ANXIOUS_Y2	0.61	0.29	0.60	
X				
Mean	1.13	1.45	1.12	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	38.67	23.79	23.20	
INTEREST_Y2.1	29.75	21.86	21.31	
CONTROL_WORRY_Y2.1	43.28	19.03	19.82	
FEEL_ANXIOUS_Y2.1	41.56	21.37	21.05	

2.8.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.008	0.04	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.446
Sensitivity 0%	4%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
16.503	1	NA	0.015	0.049	0.999

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 14 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	6374.00000045487

Model Test User Model:

	Standard	Scaled
Test Statistic	16.503	17.938
Degrees of freedom	1	1
P-value (Unknown)	NA	0.000
Scaling correction factor		0.920
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	14809.511	5837.654
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.537

User Model versus Baseline Model:

Comparative Fit Index (CFI)	0.999	0.997
Tucker-Lewis Index (TLI)	0.994	0.983
Robust Comparative Fit Index (CFI)		0.993
Robust Tucker-Lewis Index (TLI)		0.961

Root Mean Square Error of Approximation:

RMSEA	0.049	0.052
90 Percent confidence interval - lower	0.030	0.032
90 Percent confidence interval - upper	0.071	0.074
P-value H ₀ : RMSEA ≤ 0.050	0.472	0.404
P-value H ₀ : RMSEA ≥ 0.080	0.010	0.016
Robust RMSEA		0.087
90 Percent confidence interval - lower		0.055
90 Percent confidence interval - upper		0.125
P-value H ₀ : Robust RMSEA ≤ 0.050		0.030
P-value H ₀ : Robust RMSEA ≥ 0.080		0.678

Standardized Root Mean Square Residual:

SRMR	0.015	0.015
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.838	0.025	33.090	0.000	0.788	0.887	0.838	0.838
INTEREST_Y2	0.446	0.019	23.529	0.000	0.409	0.483	0.446	0.446

anx =~									
CONTROL_WORRY_	0.739	0.014	54.239	0.000	0.712	0.765	0.739	0.739	
FEEL_ANXIOUS_Y	0.809	0.012	67.918	0.000	0.786	0.832	0.809	0.809	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.886	0.027	33.095	0.000	0.833	0.938	0.886	0.886	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.288	0.021	-14.035	0.000	-0.328	-0.248	-		
0.288 -0.288									
DEPRESSED_Y2 2	0.317	0.019	16.463	0.000	0.280	0.355	0.317	0.317	
DEPRESSED_Y2 3	1.065	0.025	41.940	0.000	1.015	1.115	1.065	1.065	
INTEREST_Y2 t1	-0.532	0.022	-24.245	0.000	-0.575	-0.489	-		
0.532 -0.532									
INTEREST_Y2 t2	0.040	0.021	1.887	0.059	-0.002	0.082	0.040	0.040	
INTEREST_Y2 t3	0.610	0.020	30.722	0.000	0.571	0.649	0.610	0.610	
CONTROL_WORRY_	-0.169	0.022	-7.820	0.000	-0.212	-0.127	-		
0.169 -0.169									
CONTROL_WORRY_	0.314	0.021	15.262	0.000	0.273	0.354	0.314	0.314	
CONTROL_WORRY_	0.920	0.024	38.222	0.000	0.873	0.967	0.920	0.920	
FEEL_ANXIOUS_Y	-0.213	0.020	-10.701	0.000	-0.252	-0.174	-		
0.213 -0.213									
FEEL_ANXIOUS_Y	0.330	0.017	18.981	0.000	0.296	0.364	0.330	0.330	
FEEL_ANXIOUS_Y	0.993	0.028	35.277	0.000	0.938	1.048	0.993	0.993	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.298				0.298	0.298	0.298	0.298	
.INTEREST_Y2	0.801				0.801	0.801	0.801	0.801	
.CONTROL_WORRY_	0.454				0.454	0.454	0.454	0.454	
.FEEL_ANXIOUS_Y	0.345				0.345	0.345	0.345	0.345	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.8.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.03	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.03	-0.00	

2.8.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	16.50	-0.13	-0.13
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	16.50	-0.08	-0.08
INTEREST_Y2	~~	CONTROL_WORRY_Y2	16.50	0.07	0.07
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	16.50	0.15	0.15

2.9 Indonesia

2.9.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.51	0.69	
INTEREST_Y2	0.51	1.00	0.51	
CONTROL_WORRY_Y2	0.69	0.51	1.00	
FEEL_ANXIOUS_Y2	0.75	0.50	0.75	
X				
Mean	0.63	0.93	0.61	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	57.02	30.34	5.91	
INTEREST_Y2.1	37.87	41.83	10.08	
CONTROL_WORRY_Y2.1	60.80	24.86	6.71	
FEEL_ANXIOUS_Y2.1	52.97	30.94	7.02	

2.9.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.006	0.04	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.394
Sensitivity 0%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
3.453	1	NA	0.01	0.03	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 13 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2684.000001417

Model Test User Model:

	Standard	Scaled
Test Statistic	3.453	2.685
Degrees of freedom	1	1
P-value (Unknown)	NA	0.101
Scaling correction factor		1.286
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	13666.105	3842.171
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		3.558

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	0.999	0.997
Robust Comparative Fit Index (CFI)		0.998
Robust Tucker-Lewis Index (TLI)		0.989

Root Mean Square Error of Approximation:

RMSEA	0.030	0.025
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.068	0.063
P-value H ₀ : RMSEA ≤ 0.050	0.768	0.829
P-value H ₀ : RMSEA ≥ 0.080	0.011	0.006
Robust RMSEA		0.063
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.158
P-value H ₀ : Robust RMSEA ≤ 0.050		0.278
P-value H ₀ : Robust RMSEA ≥ 0.080		0.490

Standardized Root Mean Square Residual:

SRMR	0.010	0.010
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.861	0.025	33.783	0.000	0.811	0.910	0.861	0.861
INTEREST_Y2	0.593	0.027	21.579	0.000	0.539	0.647	0.593	0.593

```

    anx =~
      CONTROL_WORRY_    0.841    0.015    56.732    0.000    0.812    0.870    0.841    0.841
      FEEL_ANXIOUS_Y    0.891    0.015    60.748    0.000    0.862    0.919    0.891    0.891

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.970    0.031    31.235    0.000    0.909    1.031    0.970    0.970

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1    0.177    0.038    4.598    0.000    0.101    0.252    0.177    0.177
    DEPRESSED_Y2|2    1.144    0.040    28.273    0.000    1.064    1.223    1.144    1.144
    DEPRESSED_Y2|3    1.496    0.049    30.513    0.000    1.400    1.593    1.496    1.496
    INTEREST_Y2|t1   -0.309    0.040    -7.764    0.000   -0.387   -0.231    -      -
0.309   -0.309
    INTEREST_Y2|t2    0.831    0.048    17.256    0.000    0.737    0.925    0.831    0.831
    INTEREST_Y2|t3    1.269    0.051    24.982    0.000    1.170    1.369    1.269    1.269
    CONTROL_WORRY_    0.274    0.038    7.296    0.000    0.201    0.348    0.274    0.274
    CONTROL_WORRY_    1.065    0.041    26.187    0.000    0.986    1.145    1.065    1.065
    CONTROL_WORRY_    1.431    0.057    24.900    0.000    1.318    1.544    1.431    1.431
    FEEL_ANXIOUS_Y    0.075    0.032    2.338    0.019    0.012    0.137    0.075    0.075
    FEEL_ANXIOUS_Y    0.991    0.044    22.693    0.000    0.905    1.077    0.991    0.991
    FEEL_ANXIOUS_Y    1.337    0.048    27.666    0.000    1.242    1.431    1.337    1.337

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.259          0.259    0.259    0.259    0.259
    .INTEREST_Y2      0.649          0.649    0.649    0.649    0.649
    .CONTROL_WORRY_    0.293          0.293    0.293    0.293    0.293
    .FEEL_ANXIOUS_Y    0.207          0.207    0.207    0.207    0.207
    dep              1.000          1.000    1.000    1.000    1.000
    anx              1.000          1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.9.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.02	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.01	-0.00	

2.9.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	3.45	0.07	0.07
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	3.45	-0.07	-0.07
INTEREST_Y2	~~	CONTROL_WORRY_Y2	3.45	0.05	0.05
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	3.45	-0.05	-0.05

2.10 Israel

2.10.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.75	0.77	
INTEREST_Y2	0.75	1.00	0.58	
CONTROL_WORRY_Y2	0.77	0.58	1.00	
FEEL_ANXIOUS_Y2	0.85	0.72	0.82	
X				
Mean	0.64	0.67	0.58	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	55.11	29.78	10.07	
INTEREST_Y2.1	53.40	29.59	12.20	
CONTROL_WORRY_Y2.1	59.41	26.69	10.19	
FEEL_ANXIOUS_Y2.1	63.40	25.07	7.92	

2.10.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.041	1	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.218
Sensitivity 0%	4%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
13.561	1	NA	0.013	0.071	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 16 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2490.00002081761

Model Test User Model:

	Standard	Scaled
Test Statistic	13.561	9.240
Degrees of freedom	1	1
P-value (Unknown)	NA	0.002
Scaling correction factor		1.468
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	39077.437	2552.711
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		15.325

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	0.997
Tucker-Lewis Index (TLI)	0.998	0.981
Robust Comparative Fit Index (CFI)		0.990
Robust Tucker-Lewis Index (TLI)		0.941

Root Mean Square Error of Approximation:

RMSEA	0.071	0.058
90 Percent confidence interval - lower	0.041	0.028
90 Percent confidence interval - upper	0.107	0.094
P-value H ₀ : RMSEA ≤ 0.050	0.117	0.293
P-value H ₀ : RMSEA ≥ 0.080	0.379	0.171
Robust RMSEA		0.182
90 Percent confidence interval - lower		0.088
90 Percent confidence interval - upper		0.298
P-value H ₀ : Robust RMSEA ≤ 0.050		0.013
P-value H ₀ : Robust RMSEA ≥ 0.080		0.962

Standardized Root Mean Square Residual:

SRMR	0.013	0.013
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.959	0.015	65.060	0.000	0.930	0.988	0.959	0.959
INTEREST_Y2	0.784	0.034	23.297	0.000	0.718	0.850	0.784	0.784

anx =~								
CONTROL_WORRY_	0.848	0.018	46.209	0.000	0.812	0.884	0.848	0.848
FEEL_ANXIOUS_Y	0.970	0.013	76.835	0.000	0.945	0.994	0.970	0.970

Covariances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.928	0.020	47.206	0.000	0.889	0.966	0.928	0.928

Thresholds:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	0.128	0.073	1.769	0.077	-0.014	0.271	0.128	0.128
DEPRESSED_Y2 2	1.032	0.070	14.796	0.000	0.895	1.168	1.032	1.032
DEPRESSED_Y2 3	1.641	0.101	16.194	0.000	1.442	1.839	1.641	1.641
INTEREST_Y2 t1	0.085	0.078	1.088	0.277	-0.068	0.239	0.085	0.085
INTEREST_Y2 t2	0.954	0.070	13.629	0.000	0.817	1.091	0.954	0.954
INTEREST_Y2 t3	1.664	0.100	16.681	0.000	1.469	1.860	1.664	1.664
CONTROL_WORRY_	0.238	0.061	3.917	0.000	0.119	0.357	0.238	0.238
CONTROL_WORRY_	1.085	0.063	17.344	0.000	0.962	1.207	1.085	1.085
CONTROL_WORRY_	1.785	0.113	15.867	0.000	1.565	2.006	1.785	1.785
FEEL_ANXIOUS_Y	0.343	0.073	4.705	0.000	0.200	0.485	0.343	0.343
FEEL_ANXIOUS_Y	1.199	0.068	17.632	0.000	1.066	1.332	1.199	1.199
FEEL_ANXIOUS_Y	1.798	0.087	20.648	0.000	1.627	1.968	1.798	1.798

Variances:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.081				0.081	0.081	0.081	0.081
.INTEREST_Y2	0.386				0.386	0.386	0.386	0.386
.CONTROL_WORRY_	0.281				0.281	0.281	0.281	0.281
.FEEL_ANXIOUS_Y	0.060				0.060	0.060	0.060	0.060
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.10.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	0.02	-0.03	0.00	
FEEL_ANXIOUS_Y2	-0.01	0.01	0.00	

2.10.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	13.56	-0.09	-0.09
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	13.56	0.08	0.08
INTEREST_Y2	~~	CONTROL_WORRY_Y2	13.56	-0.07	-0.07
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	13.56	0.08	0.08

2.11 Japan

2.11.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.85	0.84	
INTEREST_Y2	0.85	1.00	0.74	
CONTROL_WORRY_Y2	0.84	0.74	1.00	
FEEL_ANXIOUS_Y2	0.88	0.77	0.86	
X				
Mean	0.69	0.79	0.54	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	53.94	28.69	11.54	
INTEREST_Y2.1	49.49	28.67	15.64	
CONTROL_WORRY_Y2.1	63.73	23.08	9.00	
FEEL_ANXIOUS_Y2.1	43.72	35.98	13.26	

2.11.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.003	0.04	1	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.139
Sensitivity 0%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0	1	NA	0	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 19 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	13972.0000004316

Model Test User Model:

	Standard	Scaled
Test Statistic	0.000	0.000
Degrees of freedom	1	1
P-value (Unknown)	NA	0.987
Scaling correction factor		1.071
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	565441.004	66414.983
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		8.514

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.000
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.001

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.000	0.000
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.000
P-value H ₀ : Robust RMSEA ≤ 0.050		0.999
P-value H ₀ : Robust RMSEA ≥ 0.080		0.000

Standardized Root Mean Square Residual:

SRMR	0.000	0.000
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.983	0.003	365.092	0.000	0.978	0.988	0.983	0.983
INTEREST_Y2	0.861	0.005	169.155	0.000	0.851	0.871	0.861	0.861

anx =~								
CONTROL_WORRY_	0.908	0.004	227.109	0.000	0.900	0.916	0.908	0.908
FEEL_ANXIOUS_Y	0.942	0.004	263.939	0.000	0.935	0.949	0.942	0.942
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.946	0.006	165.281	0.000	0.935	0.957	0.946	0.946
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	0.099	0.014	7.126	0.000	0.072	0.126	0.099	0.099
DEPRESSED_Y2 2	0.940	0.016	60.234	0.000	0.909	0.970	0.940	0.940
DEPRESSED_Y2 3	1.569	0.020	79.236	0.000	1.530	1.608	1.569	1.569
INTEREST_Y2 t1	-0.013	0.014	-0.905	0.366	-0.040	0.015	-	-
0.013 -0.013								
INTEREST_Y2 t2	0.778	0.015	51.856	0.000	0.748	0.807	0.778	0.778
INTEREST_Y2 t3	1.538	0.019	82.844	0.000	1.502	1.574	1.538	1.538
CONTROL_WORRY_	0.351	0.013	26.245	0.000	0.325	0.377	0.351	0.351
CONTROL_WORRY_	1.118	0.013	83.823	0.000	1.091	1.144	1.118	1.118
CONTROL_WORRY_	1.729	0.024	71.175	0.000	1.682	1.777	1.729	1.729
FEEL_ANXIOUS_Y	-0.158	0.012	-12.976	0.000	-0.182	-0.134	-	-
0.158 -0.158								
FEEL_ANXIOUS_Y	0.831	0.013	62.612	0.000	0.805	0.857	0.831	0.831
FEEL_ANXIOUS_Y	1.473	0.020	72.439	0.000	1.433	1.513	1.473	1.473
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.034				0.034	0.034	0.034	0.034
.INTEREST_Y2	0.259				0.259	0.259	0.259	0.259
.CONTROL_WORRY_	0.176				0.176	0.176	0.176	0.176
.FEEL_ANXIOUS_Y	0.113				0.113	0.113	0.113	0.113
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.11.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.00	0.00	

2.11.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.00	0.00
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.00	-0.00
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.00	-0.00
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.00	0.00

2.12 Kenya

2.12.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.47	0.51	
INTEREST_Y2	0.47	1.00	0.43	
CONTROL_WORRY_Y2	0.51	0.43	1.00	
FEEL_ANXIOUS_Y2	0.56	0.46	0.57	
X				
Mean	1.10	1.20	1.10	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	32.15	40.90	11.97	
INTEREST_Y2.1	26.36	44.14	12.33	
CONTROL_WORRY_Y2.1	35.34	35.54	12.43	
FEEL_ANXIOUS_Y2.1	36.65	37.20	12.70	

2.12.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.007	0.039	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.367
Sensitivity 2%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.223	1	NA	0.002	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 14 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	7698.00001112736

Model Test User Model:

	Standard	Scaled
Test Statistic	0.223	0.222
Degrees of freedom	1	1
P-value (Unknown)	NA	0.637
Scaling correction factor		1.005
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	14905.655	5119.430
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.912

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.001
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.002

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.024	0.024
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.045
P-value H ₀ : Robust RMSEA ≤ 0.050		0.967
P-value H ₀ : Robust RMSEA ≥ 0.080		0.001

Standardized Root Mean Square Residual:

SRMR	0.002	0.002
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.756	0.015	51.388	0.000	0.727	0.785	0.756	0.756
INTEREST_Y2	0.627	0.017	36.977	0.000	0.594	0.660	0.627	0.627

anx =~								
CONTROL_WORRY_	0.724	0.014	53.017	0.000	0.697	0.750	0.724	0.724
FEEL_ANXIOUS_Y	0.785	0.014	54.767	0.000	0.757	0.813	0.785	0.785
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.944	0.020	47.459	0.000	0.905	0.983	0.944	0.944
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.464	0.017	-26.627	0.000	-0.498	-0.429	-	
0.464 -0.464								
DEPRESSED_Y2 2	0.614	0.021	29.543	0.000	0.573	0.655	0.614	0.614
DEPRESSED_Y2 3	1.037	0.018	56.773	0.000	1.001	1.073	1.037	1.037
INTEREST_Y2 t1	-0.632	0.026	-24.102	0.000	-0.684	-0.581	-	
0.632 -0.632								
INTEREST_Y2 t2	0.539	0.025	21.918	0.000	0.490	0.587	0.539	0.539
INTEREST_Y2 t3	0.947	0.028	34.421	0.000	0.893	1.001	0.947	0.947
CONTROL_WORRY_	-0.376	0.019	-19.689	0.000	-0.414	-0.339	-	
0.376 -0.376								
CONTROL_WORRY_	0.550	0.018	31.312	0.000	0.516	0.584	0.550	0.550
CONTROL_WORRY_	0.967	0.026	37.345	0.000	0.916	1.017	0.967	0.967
FEEL_ANXIOUS_Y	-0.341	0.022	-15.423	0.000	-0.384	-0.298	-	
0.341 -0.341								
FEEL_ANXIOUS_Y	0.639	0.023	27.751	0.000	0.594	0.684	0.639	0.639
FEEL_ANXIOUS_Y	1.106	0.024	46.080	0.000	1.059	1.153	1.106	1.106
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.428				0.428	0.428	0.428	0.428
.INTEREST_Y2	0.607				0.607	0.607	0.607	0.607
.CONTROL_WORRY_	0.477				0.477	0.477	0.477	0.477
.FEEL_ANXIOUS_Y	0.384				0.384	0.384	0.384	0.384
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.12.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.00	0.00	

2.12.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.22	-0.01	-0.01
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.22	-0.01	-0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.22	0.01	0.01
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.22	0.01	0.01

2.13 Mexico

2.13.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.76	0.69	
INTEREST_Y2	0.76	1.00	0.61	
CONTROL_WORRY_Y2	0.69	0.61	1.00	
FEEL_ANXIOUS_Y2	0.77	0.64	0.75	
X				
Mean	0.88	0.98	0.96	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	44.97	32.25	12.29	
INTEREST_Y2.1	39.35	34.74	14.82	
CONTROL_WORRY_Y2.1	43.03	31.00	13.38	
FEEL_ANXIOUS_Y2.1	43.26	33.90	13.44	

2.13.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.041	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.201
Sensitivity 0%	4%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
2.137	1	NA	0.006	0.022	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 15 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2278.00000004553

Model Test User Model:

	Standard	Scaled
Test Statistic	2.137	2.206
Degrees of freedom	1	1
P-value (Unknown)	NA	0.137
Scaling correction factor		0.969
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	20700.330	3968.938
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		5.218

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	0.998
Robust Comparative Fit Index (CFI)		0.999
Robust Tucker-Lewis Index (TLI)		0.992

Root Mean Square Error of Approximation:

RMSEA	0.022	0.023
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.065	0.066
P-value H ₀ : RMSEA ≤ 0.050	0.822	0.816
P-value H ₀ : RMSEA ≥ 0.080	0.009	0.010
Robust RMSEA		0.059
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.167
P-value H ₀ : Robust RMSEA ≤ 0.050		0.297
P-value H ₀ : Robust RMSEA ≥ 0.080		0.495

Standardized Root Mean Square Residual:

SRMR	0.006	0.006
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.940	0.012	76.432	0.000	0.916	0.964	0.940	0.940
INTEREST_Y2	0.806	0.019	41.433	0.000	0.768	0.845	0.806	0.806

anx =~									
CONTROL_WORRY_	0.831	0.016	52.587	0.000	0.800	0.862	0.831	0.831	
FEEL_ANXIOUS_Y	0.902	0.011	84.640	0.000	0.881	0.923	0.902	0.902	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.896	0.024	37.978	0.000	0.850	0.942	0.896	0.896	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.126	0.040	-3.160	0.002	-0.205	-0.048	-		
0.126 -0.126									
DEPRESSED_Y2 2	0.746	0.047	15.955	0.000	0.654	0.838	0.746	0.746	
DEPRESSED_Y2 3	1.254	0.049	25.629	0.000	1.158	1.350	1.254	1.254	
INTEREST_Y2 t1	-0.270	0.040	-6.671	0.000	-0.349	-0.191	-		
0.270 -0.270									
INTEREST_Y2 t2	0.646	0.041	15.935	0.000	0.567	0.726	0.646	0.646	
INTEREST_Y2 t3	1.222	0.046	26.833	0.000	1.133	1.311	1.222	1.222	
CONTROL_WORRY_	-0.176	0.038	-4.595	0.000	-0.251	-0.101	-		
0.176 -0.176									
CONTROL_WORRY_	0.644	0.043	14.932	0.000	0.560	0.729	0.644	0.644	
CONTROL_WORRY_	1.146	0.041	27.697	0.000	1.065	1.227	1.146	1.146	
FEEL_ANXIOUS_Y	-0.170	0.039	-4.401	0.000	-0.245	-0.094	-		
0.170 -0.170									
FEEL_ANXIOUS_Y	0.744	0.043	17.310	0.000	0.660	0.829	0.744	0.744	
FEEL_ANXIOUS_Y	1.317	0.044	29.645	0.000	1.230	1.404	1.317	1.317	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.117				0.117	0.117	0.117	0.117	
.INTEREST_Y2	0.350				0.350	0.350	0.350	0.350	
.CONTROL_WORRY_	0.310				0.310	0.310	0.310	0.310	
.FEEL_ANXIOUS_Y	0.186				0.186	0.186	0.186	0.186	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.13.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.01	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.01	0.00	

2.13.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	2.14	-0.04	-0.04
INTEREST_Y2	~~	CONTROL_WORRY_Y2	2.14	0.03	0.03
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	2.14	-0.04	-0.04
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	2.14	0.04	0.04

2.14 Nigeria

2.14.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.45	0.46	
INTEREST_Y2	0.45	1.00	0.41	
CONTROL_WORRY_Y2	0.46	0.41	1.00	
FEEL_ANXIOUS_Y2	0.50	0.39	0.49	
X				
Mean	1.24	1.48	1.21	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	30.10	31.18	23.70	
INTEREST_Y2.1	20.43	33.85	22.95	
CONTROL_WORRY_Y2.1	32.11	31.56	19.43	
FEEL_ANXIOUS_Y2.1	36.57	30.52	20.59	

2.14.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.008	0.039	0.998	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.381
Sensitivity 3%	4%	0%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
1.861	1	NA	0.009	0.017	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 15 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	3146.00011189409

Model Test User Model:

	Standard	Scaled
Test Statistic	1.861	2.086
Degrees of freedom	1	1
P-value (Unknown)	NA	0.149
Scaling correction factor		0.892
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	3021.126	854.455
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		3.542

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	0.999
Tucker-Lewis Index (TLI)	0.998	0.992
Robust Comparative Fit Index (CFI)		0.998
Robust Tucker-Lewis Index (TLI)		0.991

Root Mean Square Error of Approximation:

RMSEA	0.017	0.019
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.054	0.055
P-value H ₀ : RMSEA ≤ 0.050	0.925	0.913
P-value H ₀ : RMSEA ≥ 0.080	0.001	0.001
Robust RMSEA		0.039
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.114
P-value H ₀ : Robust RMSEA ≤ 0.050		0.464
P-value H ₀ : Robust RMSEA ≥ 0.080		0.237

Standardized Root Mean Square Residual:

SRMR	0.009	0.009
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.736	0.030	24.765	0.000	0.677	0.794	0.736	0.736
INTEREST_Y2	0.613	0.037	16.623	0.000	0.541	0.686	0.613	0.613

anx =~									
CONTROL_WORRY_	0.690	0.035	19.555	0.000	0.621	0.759	0.690	0.690	
FEEL_ANXIOUS_Y	0.709	0.028	25.746	0.000	0.655	0.763	0.709	0.709	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.939	0.045	20.911	0.000	0.851	1.027	0.939	0.939	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.522	0.037	-13.982	0.000	-0.595	-0.448	-		
0.522 -0.522									
DEPRESSED_Y2 2	0.287	0.039	7.386	0.000	0.211	0.363	0.287	0.287	
DEPRESSED_Y2 3	1.036	0.045	22.988	0.000	0.947	1.124	1.036	1.036	
INTEREST_Y2 t1	-0.827	0.037	-22.216	0.000	-0.899	-0.754	-		
0.827 -0.827									
INTEREST_Y2 t2	0.107	0.036	3.014	0.003	0.038	0.177	0.107	0.107	
INTEREST_Y2 t3	0.746	0.034	21.710	0.000	0.679	0.814	0.746	0.746	
CONTROL_WORRY_	-0.465	0.039	-11.833	0.000	-0.541	-0.388	-		
0.465 -0.465									
CONTROL_WORRY_	0.350	0.040	8.715	0.000	0.271	0.429	0.350	0.350	
CONTROL_WORRY_	0.958	0.039	24.579	0.000	0.882	1.035	0.958	0.958	
FEEL_ANXIOUS_Y	-0.343	0.037	-9.208	0.000	-0.416	-0.270	-		
0.343 -0.343									
FEEL_ANXIOUS_Y	0.442	0.037	11.911	0.000	0.370	0.515	0.442	0.442	
FEEL_ANXIOUS_Y	1.159	0.039	29.553	0.000	1.082	1.236	1.159	1.159	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.459				0.459	0.459	0.459	0.459	
.INTEREST_Y2	0.624				0.624	0.624	0.624	0.624	
.CONTROL_WORRY_	0.524				0.524	0.524	0.524	0.524	
.FEEL_ANXIOUS_Y	0.498				0.498	0.498	0.498	0.498	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.14.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.02	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.02	-0.00	

2.14.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	CONTROL_WORRY_Y2	1.86	0.05	0.05
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	1.86	-0.06	-0.06
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	1.86	-0.05	-0.05
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	1.86	0.06	0.06

2.15 Philippines

2.15.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.42	0.49	
INTEREST_Y2	0.42	1.00	0.41	
CONTROL_WORRY_Y2	0.49	0.41	1.00	
FEEL_ANXIOUS_Y2	0.57	0.41	0.62	
X				
Mean	1.07	1.46	1.44	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	38.64	28.22	21.06	
INTEREST_Y2.1	22.35	29.26	28.34	
CONTROL_WORRY_Y2.1	28.33	25.92	18.63	
FEEL_ANXIOUS_Y2.1	40.50	25.96	21.13	

2.15.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.007	0.04	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.429
Sensitivity 2%	2%	4%	0%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
3.145	1	NA	0.01	0.028	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 12 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2682.00024216278

Model Test User Model:

	Standard	Scaled
Test Statistic	3.145	2.349
Degrees of freedom	1	1
P-value (Unknown)	NA	0.125
Scaling correction factor		1.339
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	6177.145	2316.117
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.668

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	0.999
Tucker-Lewis Index (TLI)	0.998	0.996
Robust Comparative Fit Index (CFI)		0.998
Robust Tucker-Lewis Index (TLI)		0.988

Root Mean Square Error of Approximation:

RMSEA	0.028	0.022
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.066	0.061
P-value H ₀ : RMSEA ≤ 0.050	0.793	0.855
P-value H ₀ : RMSEA ≥ 0.080	0.009	0.005
Robust RMSEA		0.049
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.133
P-value H ₀ : Robust RMSEA ≤ 0.050		0.371
P-value H ₀ : Robust RMSEA ≥ 0.080		0.352

Standardized Root Mean Square Residual:

SRMR	0.010	0.010
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.737	0.029	25.027	0.000	0.679	0.795	0.737	0.737
INTEREST_Y2	0.571	0.026	22.245	0.000	0.521	0.621	0.571	0.571

anx =~									
CONTROL_WORRY_	0.747	0.023	32.162	0.000	0.702	0.793	0.747	0.747	
FEEL_ANXIOUS_Y	0.833	0.021	39.309	0.000	0.791	0.874	0.833	0.833	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.913	0.034	26.654	0.000	0.846	0.980	0.913	0.913	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.289	0.040	-7.295	0.000	-0.366	-0.211	-		
0.289 -0.289									
DEPRESSED_Y2 2	0.436	0.031	13.959	0.000	0.375	0.497	0.436	0.436	
DEPRESSED_Y2 3	1.171	0.039	29.661	0.000	1.094	1.248	1.171	1.171	
INTEREST_Y2 t1	-0.760	0.040	-18.816	0.000	-0.840	-0.681	-		
0.760 -0.760									
INTEREST_Y2 t2	0.041	0.029	1.382	0.167	-0.017	0.098	0.041	0.041	
INTEREST_Y2 t3	0.840	0.035	23.864	0.000	0.771	0.909	0.840	0.840	
CONTROL_WORRY_	-0.573	0.030	-19.118	0.000	-0.632	-0.514	-		
0.573 -0.573									
CONTROL_WORRY_	0.107	0.030	3.576	0.000	0.048	0.165	0.107	0.107	
CONTROL_WORRY_	0.609	0.032	19.111	0.000	0.547	0.672	0.609	0.609	
FEEL_ANXIOUS_Y	-0.240	0.035	-6.822	0.000	-0.309	-0.171	-		
0.240 -0.240									
FEEL_ANXIOUS_Y	0.425	0.033	13.031	0.000	0.361	0.489	0.425	0.425	
FEEL_ANXIOUS_Y	1.155	0.044	26.108	0.000	1.068	1.241	1.155	1.155	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.457				0.457	0.457	0.457	0.457	
.INTEREST_Y2	0.674				0.674	0.674	0.674	0.674	
.CONTROL_WORRY_	0.442				0.442	0.442	0.442	0.442	
.FEEL_ANXIOUS_Y	0.307				0.307	0.307	0.307	0.307	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.15.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.02	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.02	-0.00	

2.15.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	3.14	0.07	0.07
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	3.14	-0.07	-0.07
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	3.14	-0.06	-0.06
INTEREST_Y2	~~	CONTROL_WORRY_Y2	3.14	0.05	0.05

2.16 Poland

2.16.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.73	0.77	
INTEREST_Y2	0.73	1.00	0.67	
CONTROL_WORRY_Y2	0.77	0.67	1.00	
FEEL_ANXIOUS_Y2	0.69	0.61	0.75	
X				
Mean	0.38	0.56	0.37	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	69.77	23.50	4.95	
INTEREST_Y2.1	56.19	33.19	8.38	
CONTROL_WORRY_Y2.1	70.49	22.86	4.92	
FEEL_ANXIOUS_Y2.1	53.32	38.43	6.29	

2.16.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.036	1	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.201
Sensitivity 2%	7%	3%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.391	1	NA	0.002	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 12 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	6478.00001620523

Model Test User Model:

	Standard	Scaled
Test Statistic	0.391	0.396
Degrees of freedom	1	1
P-value (Unknown)	NA	0.529
Scaling correction factor		0.988
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	36103.473	5946.254
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		6.074

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.001
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.002

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.028	0.028
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.089
P-value H ₀ : Robust RMSEA ≤ 0.050		0.768
P-value H ₀ : Robust RMSEA ≥ 0.080		0.076

Standardized Root Mean Square Residual:

SRMR	0.002	0.002
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.915	0.010	94.090	0.000	0.895	0.934	0.915	0.915
INTEREST_Y2	0.802	0.014	57.049	0.000	0.774	0.829	0.802	0.802

```

    anx =~
      CONTROL_WORRY_    0.918    0.012    73.621    0.000    0.893    0.942    0.918    0.918
      FEEL_ANXIOUS_Y    0.821    0.013    63.136    0.000    0.796    0.847    0.821    0.821

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.920    0.014    64.966    0.000    0.892    0.948    0.920    0.920

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1    0.518    0.032    15.972    0.000    0.454    0.581    0.518    0.518
    DEPRESSED_Y2|2    1.496    0.042    35.516    0.000    1.413    1.579    1.496    1.496
    DEPRESSED_Y2|3    2.101    0.060    35.228    0.000    1.985    2.218    2.101    2.101
    INTEREST_Y2|t1    0.156    0.036     4.282    0.000    0.084    0.227    0.156    0.156
    INTEREST_Y2|t2    1.247    0.039    31.884    0.000    1.170    1.323    1.247    1.247
    INTEREST_Y2|t3    2.007    0.056    35.878    0.000    1.897    2.116    2.007    2.007
    CONTROL_WORRY_    0.539    0.035    15.463    0.000    0.470    0.607    0.539    0.539
    CONTROL_WORRY_    1.503    0.037    40.584    0.000    1.430    1.575    1.503    1.503
    CONTROL_WORRY_    2.115    0.065    32.401    0.000    1.987    2.243    2.115    2.115
    FEEL_ANXIOUS_Y    0.083    0.035     2.394    0.017    0.015    0.152    0.083    0.083
    FEEL_ANXIOUS_Y    1.389    0.031    44.549    0.000    1.328    1.450    1.389    1.389
    FEEL_ANXIOUS_Y    2.063    0.054    38.012    0.000    1.957    2.169    2.063    2.063

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.164          0.164    0.164    0.164    0.164
    .INTEREST_Y2      0.357          0.357    0.357    0.357    0.357
    .CONTROL_WORRY_    0.158          0.158    0.158    0.158    0.158
    .FEEL_ANXIOUS_Y    0.326          0.326    0.326    0.326    0.326
    dep              1.000          1.000    1.000    1.000    1.000
    anx              1.000          1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.16.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	0.00	-0.00	0.00	
FEEL_ANXIOUS_Y2	-0.00	0.00	-0.00	

2.16.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.39	-0.01	-0.01
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.39	0.01	0.01
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.39	0.01	0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.39	-0.01	-0.01

2.17 South Africa

2.17.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.45	0.47	
INTEREST_Y2	0.45	1.00	0.42	
CONTROL_WORRY_Y2	0.47	0.42	1.00	
FEEL_ANXIOUS_Y2	0.47	0.41	0.47	
X				
Mean	1.13	1.08	1.23	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	35.32	32.85	15.70	
INTEREST_Y2.1	34.04	37.50	14.71	
CONTROL_WORRY_Y2.1	31.33	33.29	16.59	
FEEL_ANXIOUS_Y2.1	37.90	32.24	15.61	

2.17.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.012	0.06	0.996	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.364
Sensitivity 2%	2%	5%	0%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.004	1	NA	0.001	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 12 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	978.000000002357

Model Test User Model:

	Standard	Scaled
Test Statistic	0.004	0.002
Degrees of freedom	1	1
P-value (Unknown)	NA	0.961
Scaling correction factor		1.662
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	1256.426	462.507
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.723

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.005	1.013
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.043

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.005	0.000
P-value H ₀ : RMSEA ≤ 0.050	0.985	0.988
P-value H ₀ : RMSEA ≥ 0.080	0.002	0.002
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.000
P-value H ₀ : Robust RMSEA ≤ 0.050		0.967
P-value H ₀ : Robust RMSEA ≥ 0.080		0.024

Standardized Root Mean Square Residual:

SRMR	0.001	0.001
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.718	0.053	13.557	0.000	0.614	0.822	0.718	0.718
INTEREST_Y2	0.628	0.041	15.361	0.000	0.548	0.708	0.628	0.628

```

    anx =~
      CONTROL_WORRY_    0.692    0.044    15.672    0.000    0.605    0.778    0.692    0.692
      FEEL_ANXIOUS_Y    0.685    0.050    13.565    0.000    0.586    0.784    0.685    0.685

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.954    0.059    16.110    0.000    0.838    1.070    0.954    0.954

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1  -0.377    0.070    -5.366    0.000    -0.514    -0.239    -
0.377  -0.377
    DEPRESSED_Y2|2   0.472    0.065     7.311    0.000     0.346     0.599    0.472    0.472
    DEPRESSED_Y2|3   0.989    0.071    13.982    0.000     0.850     1.128    0.989    0.989
    INTEREST_Y2|t1  -0.411    0.075    -5.516    0.000    -0.558    -0.265    -
0.411  -0.411
    INTEREST_Y2|t2   0.569    0.062     9.217    0.000     0.448     0.690    0.569    0.569
    INTEREST_Y2|t3   1.091    0.068    16.114    0.000     0.959     1.224    1.091    1.091
    CONTROL_WORRY_  -0.486    0.058    -8.444    0.000    -0.599    -0.374    -
0.486  -0.486
    CONTROL_WORRY_   0.375    0.055     6.778    0.000     0.267     0.484    0.375    0.375
    CONTROL_WORRY_   0.886    0.067    13.267    0.000     0.755     1.016    0.886    0.886
    FEEL_ANXIOUS_Y  -0.308    0.065    -4.754    0.000    -0.435    -0.181    -
0.308  -0.308
    FEEL_ANXIOUS_Y   0.529    0.059     9.003    0.000     0.413     0.644    0.529    0.529
    FEEL_ANXIOUS_Y   1.069    0.068    15.726    0.000     0.936     1.203    1.069    1.069

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.484          0.484    0.484    0.484    0.484
    .INTEREST_Y2      0.605          0.605    0.605    0.605    0.605
    .CONTROL_WORRY_   0.522          0.522    0.522    0.522    0.522
    .FEEL_ANXIOUS_Y   0.531          0.531    0.531    0.531    0.531
    dep              1.000          1.000    1.000    1.000    1.000
    anx              1.000          1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.17.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.00	-0.00	

2.17.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.00	0.00	0.00
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.00	-0.00	-0.00
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.00	0.00	0.00
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.00	-0.00	-0.00

2.18 Spain

2.18.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.70	0.71	
INTEREST_Y2	0.70	1.00	0.64	
CONTROL_WORRY_Y2	0.71	0.64	1.00	
FEEL_ANXIOUS_Y2	0.72	0.60	0.71	
X				
Mean	0.93	1.02	0.95	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	41.07	35.28	13.61	
INTEREST_Y2.1	33.09	40.96	16.59	
CONTROL_WORRY_Y2.1	41.77	31.81	15.81	
FEEL_ANXIOUS_Y2.1	25.20	43.82	16.48	

2.18.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.004	0.038	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.22
Sensitivity 1%	5%	2%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
4.755	1	NA	0.009	0.036	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 14 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	2924.00000076902

Model Test User Model:

	Standard	Scaled
Test Statistic	4.755	3.249
Degrees of freedom	1	1
P-value (Unknown)	NA	0.071
Scaling correction factor		1.463
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	18286.175	4425.760
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		4.133

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	0.999
Tucker-Lewis Index (TLI)	0.999	0.997
Robust Comparative Fit Index (CFI)		0.997
Robust Tucker-Lewis Index (TLI)		0.985

Root Mean Square Error of Approximation:

RMSEA	0.036	0.028
90 Percent confidence interval - lower	0.009	0.000
90 Percent confidence interval - upper	0.071	0.064
P-value H ₀ : RMSEA ≤ 0.050	0.699	0.816
P-value H ₀ : RMSEA ≥ 0.080	0.016	0.006
Robust RMSEA		0.078
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.179
P-value H ₀ : Robust RMSEA ≤ 0.050		0.203
P-value H ₀ : Robust RMSEA ≥ 0.080		0.603

Standardized Root Mean Square Residual:

SRMR	0.009	0.009
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.899	0.017	54.413	0.000	0.867	0.932	0.899	0.899
INTEREST_Y2	0.778	0.017	44.785	0.000	0.744	0.812	0.778	0.778

```

    anx =~
      CONTROL_WORRY_    0.850    0.016   54.555    0.000    0.819    0.880    0.850    0.850
      FEEL_ANXIOUS_Y    0.831    0.017   49.813    0.000    0.798    0.863    0.831    0.831

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.948    0.017   57.070    0.000    0.915    0.981    0.948    0.948

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1  -0.226    0.038   -5.957    0.000   -0.300   -0.152    -
0.226  -0.226
    DEPRESSED_Y2|2    0.718    0.040   17.837    0.000    0.639    0.796    0.718    0.718
    DEPRESSED_Y2|3    1.279    0.049   26.252    0.000    1.183    1.374    1.279    1.279
    INTEREST_Y2|t1  -0.437    0.034  -12.969    0.000   -0.504   -0.371    -
0.437  -0.437
    INTEREST_Y2|t2    0.645    0.038   17.035    0.000    0.571    0.719    0.645    0.645
    INTEREST_Y2|t3    1.319    0.053   25.090    0.000    1.216    1.422    1.319    1.319
    CONTROL_WORRY_  -0.208    0.032   -6.541    0.000   -0.270   -0.146    -
0.208  -0.208
    CONTROL_WORRY_    0.630    0.042   15.190    0.000    0.549    0.712    0.630    0.630
    CONTROL_WORRY_    1.247    0.047   26.707    0.000    1.156    1.339    1.247    1.247
    FEEL_ANXIOUS_Y  -0.668    0.030  -22.188    0.000   -0.727   -0.609    -
0.668  -0.668
    FEEL_ANXIOUS_Y    0.496    0.033   15.109    0.000    0.432    0.561    0.496    0.496
    FEEL_ANXIOUS_Y    1.058    0.041   26.040    0.000    0.978    1.138    1.058    1.058

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.191          0.191    0.191    0.191    0.191
    .INTEREST_Y2      0.395          0.395    0.395    0.395    0.395
    .CONTROL_WORRY_   0.278          0.278    0.278    0.278    0.278
    .FEEL_ANXIOUS_Y   0.310          0.310    0.310    0.310    0.310
    dep              1.000          1.000    1.000    1.000    1.000
    anx              1.000          1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.18.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	-0.00	0.00		
CONTROL_WORRY_Y2	-0.01	0.01	0.00	
FEEL_ANXIOUS_Y2	0.01	-0.02	-0.00	

2.18.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	4.75	-0.05	-0.05
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	4.75	-0.06	-0.06
INTEREST_Y2	~~	CONTROL_WORRY_Y2	4.75	0.05	0.05
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	4.75	0.06	0.06

2.19 Sweden

2.19.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.65	0.80	
INTEREST_Y2	0.65	1.00	0.57	
CONTROL_WORRY_Y2	0.80	0.57	1.00	
FEEL_ANXIOUS_Y2	0.77	0.53	0.89	
X				
Mean	0.65	0.77	0.54	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	55.12	30.78	8.14	
INTEREST_Y2.1	51.20	27.37	14.57	
CONTROL_WORRY_Y2.1	63.25	24.10	7.86	
FEEL_ANXIOUS_Y2.1	47.71	36.97	9.04	

2.19.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.003	0.036	1	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.337
Sensitivity 0%	5%	1%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
6.201	1	NA	0.005	0.021	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 15 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	11609.0108778427

Model Test User Model:

	Standard	Scaled
Test Statistic	6.201	7.397
Degrees of freedom	1	1
P-value (Unknown)	NA	0.007
Scaling correction factor		0.838
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	160300.240	32726.852
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		4.898

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	0.999
Robust Comparative Fit Index (CFI)		0.999
Robust Tucker-Lewis Index (TLI)		0.992

Root Mean Square Error of Approximation:

RMSEA	0.021	0.023
90 Percent confidence interval - lower	0.008	0.010
90 Percent confidence interval - upper	0.038	0.041
P-value H ₀ : RMSEA ≤ 0.050	0.998	0.996
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.065
90 Percent confidence interval - lower		0.027
90 Percent confidence interval - upper		0.112
P-value H ₀ : Robust RMSEA ≤ 0.050		0.222
P-value H ₀ : Robust RMSEA ≥ 0.080		0.343

Standardized Root Mean Square Residual:

SRMR	0.005	0.005
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.965	0.005	175.714	0.000	0.954	0.976	0.965	0.965
INTEREST_Y2	0.678	0.011	60.798	0.000	0.656	0.699	0.678	0.678

```

    anx =~
      CONTROL_WORRY_    0.961    0.004    245.552    0.000    0.953    0.968    0.961    0.961
      FEEL_ANXIOUS_Y    0.924    0.005    186.890    0.000    0.914    0.934    0.924    0.924

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.865    0.008    102.921    0.000    0.848    0.881    0.865    0.865

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1    0.129    0.015     8.671    0.000    0.100    0.158    0.129    0.129
    DEPRESSED_Y2|2    1.076    0.018    58.875    0.000    1.040    1.112    1.076    1.076
    DEPRESSED_Y2|3    1.559    0.025    62.614    0.000    1.510    1.608    1.559    1.559
    INTEREST_Y2|t1    0.030    0.015     1.948    0.051   -0.000    0.060    0.030    0.030
    INTEREST_Y2|t2    0.792    0.018    44.786    0.000    0.757    0.826    0.792    0.792
    INTEREST_Y2|t3    1.486    0.020    73.860    0.000    1.447    1.525    1.486    1.486
    CONTROL_WORRY_    0.339    0.014    23.452    0.000    0.310    0.367    0.339    0.339
    CONTROL_WORRY_    1.143    0.017    66.879    0.000    1.110    1.177    1.143    1.143
    CONTROL_WORRY_    1.666    0.022    74.844    0.000    1.622    1.709    1.666    1.666
    FEEL_ANXIOUS_Y   -0.058    0.015    -3.807    0.000   -0.087   -0.028    -
0.058   -0.058
    FEEL_ANXIOUS_Y    1.023    0.017    58.824    0.000    0.989    1.057    1.023    1.023
    FEEL_ANXIOUS_Y    1.531    0.024    63.768    0.000    1.484    1.578    1.531    1.531

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2      0.069                0.069    0.069    0.069    0.069
    .INTEREST_Y2        0.541                0.541    0.541    0.541    0.541
    .CONTROL_WORRY_     0.077                0.077    0.077    0.077    0.077
    .FEEL_ANXIOUS_Y     0.146                0.146    0.146    0.146    0.146
    dep                 1.000                1.000    1.000    1.000    1.000
    anx                 1.000                1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.19.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.01	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.01	0.00	

2.19.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	6.20	0.03	0.03
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	6.20	-0.02	-0.02
INTEREST_Y2	~~	CONTROL_WORRY_Y2	6.20	0.02	0.02
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	6.20	-0.03	-0.03

2.20 Tanzania

2.20.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.36	0.52	
INTEREST_Y2	0.36	1.00	0.34	
CONTROL_WORRY_Y2	0.52	0.34	1.00	
FEEL_ANXIOUS_Y2	0.55	0.36	0.64	
X				
Mean	1.20	1.17	0.85	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	38.93	16.96	29.04	
INTEREST_Y2.1	42.45	16.31	22.78	
CONTROL_WORRY_Y2.1	55.43	13.40	21.44	
FEEL_ANXIOUS_Y2.1	54.19	13.26	22.96	

2.20.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.007	0.04	0.999	NONE
Specificity 95%	95%	95%	95%	
Level-1	NONE	NONE	NONE	0.484
Sensitivity 1%	4%	0%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.087	1	NA	0.001	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 14 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	5583.00000008529

Model Test User Model:

	Standard	Scaled
Test Statistic	0.087	0.074
Degrees of freedom	1	1
P-value (Unknown)	NA	0.785
Scaling correction factor		1.172
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	9217.728	3281.746
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		2.810

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.001	1.002
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.005

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.024	0.023
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.055
P-value H ₀ : Robust RMSEA ≤ 0.050		0.935
P-value H ₀ : Robust RMSEA ≥ 0.080		0.010

Standardized Root Mean Square Residual:

SRMR	0.001	0.001
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.737	0.020	36.085	0.000	0.697	0.777	0.737	0.737
INTEREST_Y2	0.484	0.019	25.503	0.000	0.447	0.522	0.484	0.484

anx =~									
CONTROL_WORRY_	0.779	0.017	47.006	0.000	0.747	0.812	0.779	0.779	
FEEL_ANXIOUS_Y	0.827	0.016	50.766	0.000	0.796	0.859	0.827	0.827	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.900	0.027	33.854	0.000	0.848	0.952	0.900	0.900	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.281	0.019	-14.772	0.000	-0.318	-0.244	-	-	
0.281 -0.281									
DEPRESSED_Y2 2	0.148	0.019	7.704	0.000	0.111	0.186	0.148	0.148	
DEPRESSED_Y2 3	1.034	0.029	35.654	0.000	0.977	1.091	1.034	1.034	
INTEREST_Y2 t1	-0.190	0.025	-7.706	0.000	-0.239	-0.142	-	-	
0.190 -0.190									
INTEREST_Y2 t2	0.221	0.021	10.309	0.000	0.179	0.263	0.221	0.221	
INTEREST_Y2 t3	0.898	0.023	38.659	0.000	0.852	0.944	0.898	0.898	
CONTROL_WORRY_	0.137	0.018	7.579	0.000	0.101	0.172	0.137	0.137	
CONTROL_WORRY_	0.491	0.019	25.692	0.000	0.453	0.528	0.491	0.491	
CONTROL_WORRY_	1.297	0.025	51.757	0.000	1.248	1.346	1.297	1.297	
FEEL_ANXIOUS_Y	0.105	0.026	4.129	0.000	0.055	0.155	0.105	0.105	
FEEL_ANXIOUS_Y	0.452	0.026	17.110	0.000	0.401	0.504	0.452	0.452	
FEEL_ANXIOUS_Y	1.305	0.031	42.156	0.000	1.245	1.366	1.305	1.305	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.457				0.457	0.457	0.457	0.457	
.INTEREST_Y2	0.765				0.765	0.765	0.765	0.765	
.CONTROL_WORRY_	0.393				0.393	0.393	0.393	0.393	
.FEEL_ANXIOUS_Y	0.315				0.315	0.315	0.315	0.315	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.20.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	0.00	-0.00	0.00	
FEEL_ANXIOUS_Y2	-0.00	0.00	-0.00	

2.20.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.09	0.01	0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.09	-0.01	-0.01
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.09	-0.01	-0.01
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.09	0.01	0.01

2.21 Turkey

2.21.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.65	0.65	
INTEREST_Y2	0.65	1.00	0.56	
CONTROL_WORRY_Y2	0.65	0.56	1.00	
FEEL_ANXIOUS_Y2	0.68	0.62	0.70	
X				
Mean	1.32	1.28	0.94	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	33.29	23.16	22.41	
INTEREST_Y2.1	37.26	20.41	19.25	
CONTROL_WORRY_Y2.1	50.44	20.87	13.21	
FEEL_ANXIOUS_Y2.1	30.28	26.05	17.38	

2.21.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.01	0.075	0.997	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.243
Sensitivity 1%	4%	0%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.216	1	NA	0.005	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 13 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	500.000000452455

Model Test User Model:

	Standard	Scaled
Test Statistic	0.216	0.240
Degrees of freedom	1	1
P-value (Unknown)	NA	0.624
Scaling correction factor		0.899
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	2428.102	712.802
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		3.414

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.002	1.006
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.022

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.092	0.093
P-value H ₀ : RMSEA ≤ 0.050	0.800	0.789
P-value H ₀ : RMSEA ≥ 0.080	0.081	0.086
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.210
P-value H ₀ : Robust RMSEA ≤ 0.050		0.664
P-value H ₀ : Robust RMSEA ≥ 0.080		0.281

Standardized Root Mean Square Residual:

SRMR	0.005	0.005
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.856	0.043	20.136	0.000	0.773	0.939	0.856	0.856
INTEREST_Y2	0.758	0.042	17.863	0.000	0.675	0.841	0.758	0.758

anx =~									
CONTROL_WORRY_	0.808	0.040	20.004	0.000	0.729	0.887	0.808	0.808	
FEEL_ANXIOUS_Y	0.867	0.041	20.916	0.000	0.786	0.948	0.867	0.867	
Covariances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
dep ~~									
anx	0.928	0.045	20.405	0.000	0.839	1.017	0.928	0.928	
Thresholds:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
DEPRESSED_Y2 1	-0.432	0.069	-6.251	0.000	-0.567	-0.296	-		
0.432 -0.432									
DEPRESSED_Y2 2	0.163	0.086	1.893	0.058	-0.006	0.331	0.163	0.163	
DEPRESSED_Y2 3	0.802	0.091	8.778	0.000	0.623	0.981	0.802	0.802	
INTEREST_Y2 t1	-0.325	0.070	-4.624	0.000	-0.463	-0.187	-		
0.325 -0.325									
INTEREST_Y2 t2	0.193	0.074	2.615	0.009	0.048	0.338	0.193	0.193	
INTEREST_Y2 t3	0.736	0.086	8.599	0.000	0.568	0.904	0.736	0.736	
CONTROL_WORRY_	0.011	0.081	0.138	0.890	-0.147	0.169	0.011	0.011	
CONTROL_WORRY_	0.562	0.092	6.115	0.000	0.382	0.743	0.562	0.562	
CONTROL_WORRY_	1.016	0.093	10.925	0.000	0.834	1.198	1.016	1.016	
FEEL_ANXIOUS_Y	-0.517	0.092	-5.615	0.000	-0.697	-0.336	-		
0.517 -0.517									
FEEL_ANXIOUS_Y	0.159	0.076	2.105	0.035	0.011	0.307	0.159	0.159	
FEEL_ANXIOUS_Y	0.634	0.098	6.459	0.000	0.442	0.827	0.634	0.634	
Variances:									
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all	
.DEPRESSED_Y2	0.267				0.267	0.267	0.267	0.267	
.INTEREST_Y2	0.425				0.425	0.425	0.425	0.425	
.CONTROL_WORRY_	0.347				0.347	0.347	0.347	0.347	
.FEEL_ANXIOUS_Y	0.248				0.248	0.248	0.248	0.248	
dep	1.000				1.000	1.000	1.000	1.000	
anx	1.000				1.000	1.000	1.000	1.000	

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.21.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	0.01	-0.01	0.00	
FEEL_ANXIOUS_Y2	-0.01	0.01	0.00	

2.21.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.22	0.03	0.03
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.22	-0.03	-0.03
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.22	-0.03	-0.03
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.22	0.03	0.03

2.22 United Kingdom

2.22.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.83	0.81	
INTEREST_Y2	0.83	1.00	0.72	
CONTROL_WORRY_Y2	0.81	0.72	1.00	
FEEL_ANXIOUS_Y2	0.78	0.68	0.87	
X				
Mean	0.83	0.89	0.85	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	48.04	29.90	13.45	
INTEREST_Y2.1	45.44	29.33	16.36	
CONTROL_WORRY_Y2.1	48.27	28.99	12.86	
FEEL_ANXIOUS_Y2.1	42.88	32.83	14.32	

2.22.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.003	0.037	1	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.154
Sensitivity 0%	6%	2%		

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.766	1	NA	0.003	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 17 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	3619.00000002024

Model Test User Model:

	Standard	Scaled
Test Statistic	0.766	0.685
Degrees of freedom	1	1
P-value (Unknown)	NA	0.408
Scaling correction factor		1.118
Shift parameter		0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	57888.352	9720.348
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		5.957

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.000
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.002

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.042	0.041
P-value H ₀ : RMSEA ≤ 0.050	0.984	0.985
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.147
P-value H ₀ : Robust RMSEA ≤ 0.050		0.552
P-value H ₀ : Robust RMSEA ≥ 0.080		0.289

Standardized Root Mean Square Residual:

SRMR	0.003	0.003
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.970	0.008	116.311	0.000	0.954	0.987	0.970	0.970
INTEREST_Y2	0.854	0.014	63.000	0.000	0.828	0.881	0.854	0.854

anx =~								
CONTROL_WORRY_	0.948	0.008	124.018	0.000	0.933	0.963	0.948	0.948
FEEL_ANXIOUS_Y	0.913	0.010	95.893	0.000	0.894	0.931	0.913	0.913
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.882	0.013	67.898	0.000	0.857	0.908	0.882	0.882
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	-0.049	0.032	-1.518	0.129	-0.112	0.014	-	
0.049 -0.049								
DEPRESSED_Y2 2	0.770	0.033	23.489	0.000	0.706	0.835	0.770	0.770
DEPRESSED_Y2 3	1.366	0.047	28.800	0.000	1.273	1.459	1.366	1.366
INTEREST_Y2 t1	-0.115	0.031	-3.709	0.000	-0.175	-0.054	-	
0.115 -0.115								
INTEREST_Y2 t2	0.667	0.032	21.122	0.000	0.605	0.729	0.667	0.667
INTEREST_Y2 t3	1.348	0.039	34.179	0.000	1.271	1.426	1.348	1.348
CONTROL_WORRY_	-0.043	0.032	-1.371	0.170	-0.105	0.019	-	
0.043 -0.043								
CONTROL_WORRY_	0.748	0.039	19.382	0.000	0.672	0.823	0.748	0.748
CONTROL_WORRY_	1.288	0.043	29.976	0.000	1.204	1.373	1.288	1.288
FEEL_ANXIOUS_Y	-0.180	0.032	-5.679	0.000	-0.241	-0.118	-	
0.180 -0.180								
FEEL_ANXIOUS_Y	0.697	0.034	20.390	0.000	0.630	0.764	0.697	0.697
FEEL_ANXIOUS_Y	1.283	0.040	32.087	0.000	1.205	1.362	1.283	1.283
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	0.059				0.059	0.059	0.059	0.059
.INTEREST_Y2	0.270				0.270	0.270	0.270	0.270
.CONTROL_WORRY_	0.101				0.101	0.101	0.101	0.101
.FEEL_ANXIOUS_Y	0.167				0.167	0.167	0.167	0.167
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.22.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.01	-0.00	

2.22.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.77	-0.02	-0.02
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.77	-0.01	-0.01
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.77	0.01	0.01
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.77	0.02	0.02

2.23 United States

2.23.1 Sample statistics

The following sample statistics, computed using the survey design adjusted estimates from the survey package, are used as input for the factor analyses. This facilitates replication of all analyses without the need to get the raw data from the Center for Open Science.

```
ci <- ci + 1
cur.country <- names(sample.stats)[ci]
tb_sample_stats(sample.stats[[cur.country]])
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	F
DEPRESSED_Y2	1.00	0.84	0.77	
INTEREST_Y2	0.84	1.00	0.68	
CONTROL_WORRY_Y2	0.77	0.68	1.00	
FEEL_ANXIOUS_Y2	0.75	0.66	0.85	
X				
Mean	0.61	0.67	0.69	
Standard.Deviation	1.00	1.00	1.00	
X.1				
Category	0.00	1.00	2.00	
DEPRESSED_Y2.1	56.84	29.86	8.58	
INTEREST_Y2.1	53.56	31.08	10.57	
CONTROL_WORRY_Y2.1	53.74	30.03	9.33	
FEEL_ANXIOUS_Y2.1	44.09	37.30	11.25	

2.23.2 Confirmatory factor analysis

```
fit <- cfa(
  mod, std.lv = TRUE, ordered=TRUE
  , sample.cov = sample.stats[[cur.country]]$sample.cov
  , sample.mean = sample.stats[[cur.country]]$sample.mean
```

```

, sample.nobs = sample.stats[[cur.country]]$sample.nobs
, sample.th = sample.stats[[cur.country]]$sample.th
, WLS.V = sample.stats[[cur.country]]$WLS.V
, NACOV = sample.stats[[cur.country]]$NACOV
)

dynamic::cfaHB(fit)

```

Your DFI cutoffs:

	SRMR	RMSEA	CFI	Magnitude
Level-0	0.003	0.038	1	NONE
Specificity 95%	95%	95%	95%	

Level-1	NONE	NONE	NONE	0.153
Sensitivity 1%	1%	5%	1%	

Empirical fit indices:

Chi-Square	df	p-value	SRMR	RMSEA	CFI
0.107	1	NA	0	0	1

```
summary(fit, standardized=TRUE, ci=TRUE, fit.measure=TRUE)
```

lavaan 0.6-21 ended normally after 15 iterations

Estimator	DWLS
Optimization method	NLMINB
Number of model parameters	17
Number of observations	32245.0003114482

Model Test User Model:

	Standard	Scaled
Test Statistic	0.107	0.150
Degrees of freedom	1	1
P-value (Unknown)	NA	0.699
Scaling correction factor		0.710
Shift parameter		-0.000
simple second-order correction		

Model Test Baseline Model:

Test statistic	325492.972	54618.447
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		5.960

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	1.000
Robust Comparative Fit Index (CFI)		1.000
Robust Tucker-Lewis Index (TLI)		1.001

Root Mean Square Error of Approximation:

RMSEA	0.000	0.000
90 Percent confidence interval - lower	0.000	0.000
90 Percent confidence interval - upper	0.010	0.011
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.000
90 Percent confidence interval - lower		0.000
90 Percent confidence interval - upper		0.037
P-value H ₀ : Robust RMSEA ≤ 0.050		0.989
P-value H ₀ : Robust RMSEA ≥ 0.080		0.000

Standardized Root Mean Square Residual:

SRMR	0.000	0.000
------	-------	-------

Parameter Estimates:

Parameterization	Delta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	0.976	0.004	276.098	0.000	0.969	0.983	0.976	0.976
INTEREST_Y2	0.861	0.005	173.645	0.000	0.851	0.871	0.861	0.861

```

    anx =~
      CONTROL_WORRY_    0.934    0.004   243.128    0.000    0.927    0.942    0.934    0.934
      FEEL_ANXIOUS_Y    0.912    0.005   202.287    0.000    0.903    0.921    0.912    0.912

Covariances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    dep ~~
      anx      0.841    0.006   144.876    0.000    0.829    0.852    0.841    0.841

Thresholds:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    DEPRESSED_Y2|1    0.172    0.013   12.986    0.000    0.146    0.198    0.172    0.172
    DEPRESSED_Y2|2    1.112    0.016   69.382    0.000    1.081    1.144    1.112    1.112
    DEPRESSED_Y2|3    1.673    0.028   60.823    0.000    1.619    1.727    1.673    1.673
    INTEREST_Y2|t1    0.089    0.011    8.170    0.000    0.068    0.111    0.089    0.089
    INTEREST_Y2|t2    1.021    0.016   64.749    0.000    0.990    1.052    1.021    1.021
    INTEREST_Y2|t3    1.665    0.022   74.045    0.000    1.621    1.709    1.665    1.665
    CONTROL_WORRY_    0.094    0.013    7.344    0.000    0.069    0.119    0.094    0.094
    CONTROL_WORRY_    0.985    0.016   61.917    0.000    0.954    1.016    0.985    0.985
    CONTROL_WORRY_    1.483    0.020   74.159    0.000    1.444    1.522    1.483    1.483
    FEEL_ANXIOUS_Y   -0.149    0.011  -13.111    0.000   -0.171   -0.126    -
0.149   -0.149
    FEEL_ANXIOUS_Y    0.892    0.015   59.970    0.000    0.863    0.922    0.892    0.892
    FEEL_ANXIOUS_Y    1.449    0.020   73.237    0.000    1.411    1.488    1.449    1.449

Variances:
      Estimate Std.Err z-value P(>|z|) ci.lower ci.upper Std.lv Std.all
    .DEPRESSED_Y2    0.047
                                0.047    0.047    0.047    0.047
    .INTEREST_Y2      0.259
                                0.259    0.259    0.259    0.259
    .CONTROL_WORRY_   0.127
                                0.127    0.127    0.127    0.127
    .FEEL_ANXIOUS_Y   0.168
                                0.168    0.168    0.168    0.168
    dep              1.000
                                1.000    1.000    1.000    1.000
    anx              1.000
                                1.000    1.000    1.000    1.000

```

```
LIST.CFA.FIT[[cur.country]] <- fit
```

2.23.2.1 Residual correlations

Residual correlation greater than |0.05| are bolded.

```
tb_residual_cor(fit)
```

Variable	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
DEPRESSED_Y2	0.00			
INTEREST_Y2	0.00	0.00		
CONTROL_WORRY_Y2	-0.00	0.00	0.00	
FEEL_ANXIOUS_Y2	0.00	-0.00	0.00	

2.23.2.2 Modification indices

```
tb_mod_indices(fit, sort.=TRUE, maximum.number = 12)
```

lhs	op	rhs	mi	epc	sepc.lv
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	0.11	-0.00	-0.00
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	0.11	0.00	0.00
INTEREST_Y2	~~	CONTROL_WORRY_Y2	0.11	0.00	0.00
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	0.11	-0.00	-0.00

3 Fit summary

Summary of fitted models ordered by RMSEA.

```
## samples sizes
fit.n <- lapply(sample.stats, \(x) x$ng) |> bind_rows() |> t() |> as.data.frame()
colnames(fit.n) <- "N"
fit.n$N <- .round(fit.n$N,0)
fit.n <- fit.n |> rownames_to_column("Country")

fit.list <- lapply(LIST.CFA.FIT, function(x){
  fitMeasures(
    object = x,
    fit.measures = c("chisq.scaled", "df.scaled", "pvalue.scaled", "rmsea.scaled", "rmsea.ci", "cfi.scaled")
  )
})

fit.tb <- fit.list |> bind_rows()
rownames(fit.tb) <- names(fit.list)
fit.tb <- fit.tb |> rownames_to_column("Country")
fit.tb <- left_join(fit.n, fit.tb)
fit.tb |>
  arrange(rmsea.scaled) |>
  flextable() |>
  colformat_double(digits = 3)
```

Country	N	chisq.scaled	df.scaled	pvalue.scaled	rm-sea.scaled	rm-sea.ci.lower	rm-sea.ci.upper	cfi.scaled
Egypt	3040	0.095	1.000	0.758	0.000	0.000	0.033	1.000
Germany	5529	0.093	1.000	0.761	0.000	0.000	0.024	1.000
Hong Kong	707	0.001	1.000	0.979	0.000	0.000	0.000	1.000
Japan	13972	0.000	1.000	0.987	0.000	0.000	0.000	1.000
Kenya	7698	0.222	1.000	0.637	0.000	0.000	0.024	1.000
Poland	6478	0.396	1.000	0.529	0.000	0.000	0.028	1.000

Country	N	chisq.scaled	df.scaled	pvalue.scaled	rm-sea.scaled	rm-sea.ci.lower	rm-sea.ci.upper	cfi.scaled
South Africa	978	0.002	1.000	0.961	0.000	0.000	0.000	1.000
Tanzania	5583	0.074	1.000	0.785	0.000	0.000	0.023	1.000
Turkey	500	0.240	1.000	0.624	0.000	0.000	0.093	1.000
United Kingdom	3619	0.685	1.000	0.408	0.000	0.000	0.041	1.000
United States	32245	0.150	1.000	0.699	0.000	0.000	0.011	1.000
Argentina	2932	1.448	1.000	0.229	0.012	0.000	0.053	1.000
Australia	2582	1.461	1.000	0.227	0.013	0.000	0.056	1.000
Nigeria	3146	2.086	1.000	0.149	0.019	0.000	0.055	0.999
Philippines	2682	2.349	1.000	0.125	0.022	0.000	0.061	0.999
Mexico	2278	2.206	1.000	0.137	0.023	0.000	0.066	1.000
Sweden	11609	7.397	1.000	0.007	0.023	0.010	0.041	1.000
Indonesia	2684	2.685	1.000	0.101	0.025	0.000	0.063	1.000
Spain	2924	3.249	1.000	0.071	0.028	0.000	0.064	0.999
Brazil	4274	5.199	1.000	0.023	0.031	0.009	0.060	1.000
China	4544	10.744	1.000	0.001	0.046	0.024	0.073	0.999
India	6374	17.938	1.000	0.000	0.052	0.032	0.074	0.997
Israel	2490	9.240	1.000	0.002	0.058	0.028	0.094	0.997

3.1 Composite reliability and AVE estimates

```
fit.rel <- lapply(LIST.CFA.FIT, function(x){
  y=semTools::compRelSEM(x, return.total = TRUE)
  data.frame(DEP = y[1], ANX=y[2], total=y[3])
}) |> bind_rows(.id="Country")

flextable(fit.rel) |>
```

```
colformat_double(digits = 3) |>
add_header_lines("Composite reliability estimates (coefficient omega).") |>
autofit()
```

Composite reliability estimates (coefficient omega).			
Country	DEP	ANX	total
Argentina	0.802	0.801	0.881
Australia	0.861	0.863	0.917
Brazil	0.759	0.767	0.859
China	0.623	0.797	0.825
Egypt	0.611	0.767	0.810
Germany	0.823	0.730	0.868
Hong Kong	0.687	0.853	0.868
India	0.526	0.680	0.743
Indonesia	0.607	0.781	0.820
Israel	0.802	0.841	0.900
Japan	0.869	0.863	0.926
Kenya	0.581	0.656	0.760
Mexico	0.812	0.796	0.886
Nigeria	0.572	0.596	0.731
Philippines	0.544	0.702	0.765
Poland	0.754	0.767	0.858
South Africa	0.563	0.579	0.722
Spain	0.770	0.767	0.867
Sweden	0.738	0.883	0.887
Tanzania	0.477	0.700	0.728
Turkey	0.727	0.759	0.847
United Kingdom	0.860	0.880	0.926
United States	0.858	0.863	0.918

```

fit.ave <- lapply(LIST.CFA.FIT, function(x){
  y=semTools::AVE(x)
  data.frame(DEP = y[1], ANX=y[2])
}) |> bind_rows(.id="Country")
flectable(fit.ave) |>
  colformat_double(digits = 3) |>
  add_header_lines("Average variance explained.") |>
  autofit()

```

Average variance explained.		
Country	DEP	ANX
Argentina	0.749	0.752
Australia	0.822	0.848
Brazil	0.696	0.705
China	0.571	0.783
Egypt	0.509	0.708
Germany	0.805	0.672
Hong Kong	0.639	0.853
India	0.450	0.600
Indonesia	0.546	0.750
Israel	0.767	0.830
Japan	0.854	0.856
Kenya	0.482	0.570
Mexico	0.767	0.752
Nigeria	0.459	0.489
Philippines	0.435	0.626
Poland	0.739	0.758
South Africa	0.455	0.474
Spain	0.707	0.706
Sweden	0.695	0.888
Tanzania	0.389	0.646

Average variance explained.		
Country	DEP	ANX
Turkey	0.654	0.702
United Kingdom	0.836	0.866
United States	0.847	0.852

3.2 Coefficient alpha

```
## USE psych package
## Coefficient Alpha of the 12-item composite
COUNTRIES <- sort(as.character(unique(df.cc$COUNTRY)))
names(COUNTRIES) <- COUNTRIES
x=COUNTRIES[1]
list.alpha <- map(COUNTRIES, \(x){

  cat("## ===== ##\n")
  cat(paste0("## Country: ", x, "\n\n"))

  tmp.dat = df.cc %>%
    filter(COUNTRY == x)
  svy.df <- svydesign(
    data = tmp.dat,
    ids = ~PSU,
    strata = ~STRATA,
    weights = ~AVG.SAMP.ATTR.WGT
  )

  fit.alpha <- svycralpha(reformulate(PHQ4.items), design = svy.df, na.rm=TRUE)
  cat(paste0("## Coefficient alpha (survey weighted): ", .round(fit.alpha,3)), "\n\n")
  suppressMessages({psych.alpha <- psych::alpha(tmp.dat[,PHQ4.items], warnings = FALSE)})
  cat("## Coefficeint alpha without survey adjustments:\n")
  print(psych.alpha)

  data.frame(svyalpha = fit.alpha, unadj.alpha=psych.alpha$total[1], unadj.alpha.lb = psych.
})

## ===== ##
## Country: Argentina
```

Coefficient alpha (survey weighted): 0.852

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.86	0.86	0.83	0.6	6	0.0029	0.94	0.83	0.61

95% confidence boundaries

	lower	alpha	upper
Feldt	0.85	0.86	0.86
Duhachek	0.85	0.86	0.86

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.80	0.80	0.74	0.57	4.0	0.0043	0.0083	0.53	
INTEREST_Y2	0.84	0.84	0.78	0.63	5.2	0.0034	0.0013	0.62	
CONTROL_WORRY_Y2	0.83	0.83	0.77	0.61	4.7	0.0037	0.0053	0.62	
FEEL_ANXIOUS_Y2	0.81	0.81	0.76	0.59	4.4	0.0040	0.0080	0.60	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	2918	0.86	0.87	0.81	0.75	0.82	0.97
INTEREST_Y2	2911	0.81	0.81	0.72	0.65	1.01	0.97
CONTROL_WORRY_Y2	2919	0.83	0.83	0.75	0.69	0.93	1.04
FEEL_ANXIOUS_Y2	2917	0.85	0.85	0.77	0.72	1.02	1.01

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.48	0.31	0.11	0.09	0.57
INTEREST_Y2	0.36	0.39	0.14	0.11	0.57
CONTROL_WORRY_Y2	0.44	0.31	0.12	0.13	0.57
FEEL_ANXIOUS_Y2	0.37	0.37	0.13	0.13	0.57

=====

Country: Australia

Coefficient alpha (survey weighted): 0.874

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.87	0.87	0.86	0.63	6.8	0.0034	0.67	0.72	0.63

95% confidence boundaries

	lower	alpha	upper
Feldt	0.87	0.87	0.88
Duhachek	0.87	0.87	0.88

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.82	0.82	0.77	0.60	4.4	0.0052	0.016	0.52	
INTEREST_Y2	0.86	0.86	0.81	0.67	6.1	0.0039	0.004	0.64	
CONTROL_WORRY_Y2	0.83	0.83	0.79	0.62	5.0	0.0048	0.011	0.63	
FEEL_ANXIOUS_Y2	0.84	0.84	0.79	0.63	5.1	0.0047	0.010	0.64	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	2578	0.88	0.88	0.84	0.78	0.62	0.83
INTEREST_Y2	2573	0.81	0.81	0.73	0.67	0.66	0.85
CONTROL_WORRY_Y2	2577	0.86	0.86	0.80	0.74	0.66	0.86
FEEL_ANXIOUS_Y2	2577	0.85	0.85	0.79	0.73	0.76	0.86

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.56	0.31	0.08	0.05	0.33
INTEREST_Y2	0.53	0.32	0.10	0.05	0.33
CONTROL_WORRY_Y2	0.54	0.32	0.09	0.06	0.33
FEEL_ANXIOUS_Y2	0.46	0.39	0.09	0.06	0.33

=====

Country: Brazil

Coefficient alpha (survey weighted): 0.841

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.85	0.85	0.82	0.59	5.8	0.0021	1.2	0.9	0.61

```

95% confidence boundaries
      lower alpha upper
Feldt      0.85  0.85  0.86
Duhachek  0.85  0.85  0.86

```

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha se	var.r	med.r
DEPRESSED_Y2	0.80	0.80	0.73	0.57	3.9	0.0031	0.00600	0.53
INTEREST_Y2	0.84	0.84	0.78	0.63	5.1	0.0025	0.00095	0.64
CONTROL_WORRY_Y2	0.82	0.82	0.75	0.60	4.4	0.0028	0.00362	0.62
FEEL_ANXIOUS_Y2	0.80	0.80	0.74	0.58	4.1	0.0030	0.00299	0.60

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	4269	0.85	0.86	0.80	0.73	0.94	1.0
INTEREST_Y2	4257	0.80	0.80	0.69	0.64	1.18	1.1
CONTROL_WORRY_Y2	4259	0.84	0.83	0.75	0.69	1.22	1.1
FEEL_ANXIOUS_Y2	4255	0.85	0.85	0.78	0.72	1.30	1.1

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.44	0.30	0.14	0.12	0.68
INTEREST_Y2	0.33	0.31	0.19	0.16	0.68
CONTROL_WORRY_Y2	0.34	0.29	0.16	0.20	0.68
FEEL_ANXIOUS_Y2	0.28	0.34	0.16	0.22	0.68

=====

Country: China

Coefficient alpha (survey weighted): 0.811

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.81	0.82	0.78	0.53	4.5	0.0044	0.78	0.6	0.53

95% confidence boundaries

	lower	alpha	upper
Feldt	0.81	0.81	0.82
Duhachek	0.81	0.81	0.82

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.75	0.75	0.69	0.50	3.0	0.0063	0.01934	0.44	
INTEREST_Y2	0.84	0.84	0.77	0.63	5.1	0.0040	0.00082	0.61	
CONTROL_WORRY_Y2	0.74	0.74	0.67	0.49	2.9	0.0065	0.01170	0.45	
FEEL_ANXIOUS_Y2	0.74	0.75	0.68	0.50	3.0	0.0063	0.00930	0.45	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	4541	0.82	0.83	0.76	0.68	0.73	0.71
INTEREST_Y2	4544	0.73	0.71	0.54	0.50	1.00	0.82
CONTROL_WORRY_Y2	4543	0.84	0.84	0.78	0.69	0.62	0.76
FEEL_ANXIOUS_Y2	4541	0.82	0.83	0.77	0.68	0.78	0.71

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.40	0.48	0.10	0.02	0.1
INTEREST_Y2	0.29	0.45	0.22	0.04	0.1
CONTROL_WORRY_Y2	0.53	0.35	0.10	0.02	0.1
FEEL_ANXIOUS_Y2	0.36	0.51	0.10	0.02	0.1

=====

Country: Egypt

Coefficient alpha (survey weighted): 0.777

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.77	0.76	0.72	0.45	3.2	0.0055	1.2	0.81	0.45

95% confidence boundaries

	lower	alpha	upper
Feldt	0.75	0.77	0.78
Duhachek	0.75	0.77	0.78

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.69	0.69	0.61	0.42	2.2	0.0078	0.0195	0.34	
INTEREST_Y2	0.77	0.77	0.70	0.53	3.4	0.0057	0.0021	0.51	

CONTROL_WORRY_Y2	0.68	0.68	0.60	0.42	2.1	0.0080	0.0062	0.41
FEEL_ANXIOUS_Y2	0.69	0.69	0.60	0.42	2.2	0.0079	0.0074	0.41

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	3039	0.79	0.79	0.69	0.60	1.0	1.05
INTEREST_Y2	3023	0.67	0.68	0.50	0.44	1.1	0.98
CONTROL_WORRY_Y2	3039	0.80	0.79	0.71	0.62	1.2	1.06
FEEL_ANXIOUS_Y2	3039	0.80	0.79	0.70	0.61	1.5	1.11

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.38	0.35	0.12	0.15	0.36
INTEREST_Y2	0.32	0.41	0.13	0.13	0.36
CONTROL_WORRY_Y2	0.33	0.36	0.14	0.17	0.36
FEEL_ANXIOUS_Y2	0.20	0.38	0.14	0.28	0.36

=====

Country: Germany

Coefficient alpha (survey weighted): 0.849

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.86	0.86	0.83	0.61	6.3	0.0023	0.7	0.73	0.61

95% confidence boundaries

	lower	alpha	upper
Feldt	0.86	0.86	0.87
Duhachek	0.86	0.86	0.87

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.80	0.80	0.73	0.57	4.0	0.0036	0.00049	0.57	
INTEREST_Y2	0.82	0.82	0.76	0.61	4.7	0.0031	0.00022	0.62	
CONTROL_WORRY_Y2	0.84	0.84	0.78	0.63	5.1	0.0029	0.00759	0.62	
FEEL_ANXIOUS_Y2	0.84	0.84	0.79	0.64	5.2	0.0029	0.00635	0.62	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
--	---	-------	-------	-------	--------	------	----

DEPRESSED_Y2	5512	0.88	0.88	0.84	0.77	0.67	0.85
INTEREST_Y2	5517	0.84	0.84	0.78	0.71	0.60	0.84
CONTROL_WORRY_Y2	5517	0.83	0.83	0.73	0.68	0.76	0.92
FEEL_ANXIOUS_Y2	5506	0.82	0.82	0.72	0.68	0.78	0.85

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.53	0.32	0.09	0.05	0.42
INTEREST_Y2	0.58	0.28	0.09	0.05	0.42
CONTROL_WORRY_Y2	0.50	0.31	0.11	0.07	0.42
FEEL_ANXIOUS_Y2	0.44	0.39	0.11	0.05	0.42

=====

Country: Hong Kong

Coefficient alpha (survey weighted): 0.853

Coefficient alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.85	0.85	0.83	0.58	5.6	0.0046	1	0.66	0.59

95% confidence boundaries

	lower	alpha	upper
Feldt	0.84	0.85	0.86
Duhachek	0.84	0.85	0.86

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha se	var.r	med.r
DEPRESSED_Y2	0.77	0.77	0.73	0.53	3.4	0.0074	0.03155	0.44
INTEREST_Y2	0.89	0.89	0.84	0.72	7.7	0.0036	0.00043	0.72
CONTROL_WORRY_Y2	0.77	0.78	0.72	0.54	3.5	0.0073	0.02083	0.49
FEEL_ANXIOUS_Y2	0.78	0.79	0.74	0.55	3.7	0.0070	0.02313	0.49

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	704	0.87	0.88	0.83	0.77	0.94	0.77
INTEREST_Y2	707	0.71	0.71	0.53	0.50	1.23	0.82
CONTROL_WORRY_Y2	706	0.87	0.87	0.84	0.76	0.81	0.81
FEEL_ANXIOUS_Y2	706	0.86	0.86	0.81	0.74	1.01	0.79

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.30	0.49	0.18	0.03	0.77
INTEREST_Y2	0.18	0.47	0.28	0.07	0.77
CONTROL_WORRY_Y2	0.41	0.40	0.17	0.03	0.77
FEEL_ANXIOUS_Y2	0.25	0.53	0.17	0.05	0.77

=====

Country: India

Coefficient alpha (survey weighted): 0.695

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.7	0.7	0.65	0.37	2.3	0.0044	1.2	0.81	0.37

95% confidence boundaries

	lower	alpha	upper
Feldt	0.69	0.7	0.71
Duhachek	0.69	0.7	0.71

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.59	0.59	0.51	0.32	1.4	0.0064	0.0203	0.26	
INTEREST_Y2	0.73	0.73	0.65	0.48	2.8	0.0041	0.0014	0.49	
CONTROL_WORRY_Y2	0.61	0.61	0.54	0.34	1.6	0.0061	0.0228	0.30	
FEEL_ANXIOUS_Y2	0.59	0.60	0.51	0.33	1.5	0.0063	0.0093	0.30	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	6357	0.77	0.77	0.67	0.56	1.1	1.1
INTEREST_Y2	6359	0.62	0.61	0.38	0.32	1.4	1.2
CONTROL_WORRY_Y2	6347	0.76	0.75	0.63	0.52	1.1	1.2
FEEL_ANXIOUS_Y2	6351	0.76	0.77	0.67	0.55	1.1	1.1

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.38	0.24	0.23	0.14	0.5
INTEREST_Y2	0.30	0.22	0.22	0.26	0.5
CONTROL_WORRY_Y2	0.43	0.20	0.19	0.18	0.5

```

FEEL_ANXIOUS_Y2  0.43 0.22 0.21 0.14  0.5
## ===== ##
## Country: Indonesia

## Coefficient alpha (survey weighted): 0.799

## Coefficeint alpha without survey adjustments:

Reliability analysis
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha std.alpha G6(smc) average_r S/N    ase mean    sd median_r
      0.82      0.82      0.78      0.53 4.5 0.0036 0.71 0.72      0.52

      95% confidence boundaries
            lower alpha upper
Feldt      0.81  0.82  0.82
Duhachek  0.81  0.82  0.82

Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N alpha se  var.r med.r
DEPRESSED_Y2      0.75      0.75      0.69      0.50 3.0  0.0053 0.0183  0.42
INTEREST_Y2       0.83      0.83      0.77      0.63 5.0  0.0034 0.0010  0.63
CONTROL_WORRY_Y2  0.75      0.75      0.68      0.50 3.0  0.0053 0.0135  0.44
FEEL_ANXIOUS_Y2   0.74      0.74      0.66      0.49 2.8  0.0055 0.0088  0.44

Item statistics
      n raw.r std.r r.cor r.drop mean    sd
DEPRESSED_Y2  2681  0.83  0.83  0.76  0.68 0.65 0.87
INTEREST_Y2   2662  0.71  0.71  0.54  0.49 0.89 0.90
CONTROL_WORRY_Y2 2678  0.83  0.83  0.76  0.68 0.59 0.89
FEEL_ANXIOUS_Y2 2677  0.84  0.84  0.79  0.70 0.73 0.90

Non missing response frequency for each item
      0    1    2    3 miss
DEPRESSED_Y2  0.55 0.32 0.06 0.07 0.62
INTEREST_Y2   0.38 0.44 0.10 0.09 0.62
CONTROL_WORRY_Y2 0.61 0.26 0.06 0.07 0.62
FEEL_ANXIOUS_Y2 0.50 0.35 0.07 0.08 0.62
## ===== ##
## Country: Israel

## Coefficient alpha (survey weighted): 0.876

```

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.87	0.87	0.85	0.63	6.9	0.0035	0.56	0.68	0.65

95% confidence boundaries

	lower	alpha	upper
Feldt	0.86	0.87	0.88
Duhachek	0.86	0.87	0.88

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.81	0.81	0.76	0.59	4.3	0.0056	0.0135	0.60	
INTEREST_Y2	0.87	0.87	0.82	0.69	6.7	0.0037	0.0016	0.70	
CONTROL_WORRY_Y2	0.85	0.85	0.80	0.66	5.7	0.0043	0.0042	0.65	
FEEL_ANXIOUS_Y2	0.81	0.81	0.76	0.59	4.3	0.0054	0.0103	0.65	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	2471	0.89	0.89	0.84	0.79	0.60	0.82
INTEREST_Y2	2472	0.81	0.80	0.69	0.64	0.62	0.83
CONTROL_WORRY_Y2	2454	0.83	0.83	0.75	0.69	0.54	0.79
FEEL_ANXIOUS_Y2	2467	0.88	0.89	0.85	0.79	0.47	0.76

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.58	0.29	0.09	0.04	0.33
INTEREST_Y2	0.57	0.28	0.11	0.04	0.33
CONTROL_WORRY_Y2	0.61	0.26	0.09	0.03	0.33
FEEL_ANXIOUS_Y2	0.66	0.24	0.07	0.03	0.33

=====

Country: Japan

Coefficient alpha (survey weighted): 0.910

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

```

raw_alpha std.alpha G6(smc) average_r S/N    ase mean    sd median_r
      0.91      0.91      0.9      0.73  11 0.00098 0.73 0.81      0.75

95% confidence boundaries
      lower alpha upper
Feldt      0.91 0.91 0.92
Duhachek 0.91 0.91 0.92

Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N alpha se    var.r med.r
DEPRESSED_Y2      0.87      0.87      0.82      0.68 6.5    0.0016 0.00482 0.68
INTEREST_Y2      0.91      0.91      0.87      0.77 10.2   0.0011 0.00078 0.76
CONTROL_WORRY_Y2 0.90      0.90      0.86      0.74 8.7    0.0013 0.00410 0.75
FEEL_ANXIOUS_Y2 0.88      0.88      0.84      0.71 7.3    0.0015 0.00626 0.75

Item statistics
      n raw.r std.r r.cor r.drop mean    sd
DEPRESSED_Y2    13900 0.93 0.93 0.91    0.87 0.72 0.91
INTEREST_Y2     13905 0.86 0.85 0.78    0.74 0.81 0.94
CONTROL_WORRY_Y2 13938 0.87 0.88 0.82    0.78 0.54 0.84
FEEL_ANXIOUS_Y2 13848 0.91 0.91 0.87    0.83 0.85 0.92

Non missing response frequency for each item
      0    1    2    3 miss
DEPRESSED_Y2    0.53 0.29 0.11 0.07 0.32
INTEREST_Y2     0.48 0.29 0.16 0.07 0.32
CONTROL_WORRY_Y2 0.64 0.22 0.09 0.05 0.32
FEEL_ANXIOUS_Y2 0.43 0.36 0.13 0.08 0.33
## ===== ##
## Country: Kenya

## Coefficient alpha (survey weighted): 0.738

## Coefficeint alpha without survey adjustments:

Reliability analysis
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha std.alpha G6(smc) average_r S/N    ase mean    sd median_r
      0.74      0.74      0.68      0.41 2.8 0.004    1.1 0.77      0.41

95% confidence boundaries

```

	lower	alpha	upper
Feldt	0.73	0.74	0.74
Duhachek	0.73	0.74	0.74

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.66	0.66	0.57	0.39	1.9	0.0055	0.00472	0.37	
INTEREST_Y2	0.72	0.72	0.63	0.46	2.5	0.0046	0.00061	0.47	
CONTROL_WORRY_Y2	0.67	0.67	0.58	0.41	2.1	0.0053	0.00319	0.39	
FEEL_ANXIOUS_Y2	0.65	0.65	0.56	0.39	1.9	0.0056	0.00187	0.39	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	7695	0.76	0.77	0.65	0.56	1.1	1.0
INTEREST_Y2	7693	0.70	0.70	0.53	0.46	1.2	1.0
CONTROL_WORRY_Y2	7696	0.76	0.75	0.62	0.53	1.1	1.1
FEEL_ANXIOUS_Y2	7696	0.77	0.77	0.66	0.57	1.0	1.0

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.32	0.42	0.12	0.15	0.32
INTEREST_Y2	0.27	0.44	0.12	0.17	0.32
CONTROL_WORRY_Y2	0.35	0.36	0.12	0.17	0.32
FEEL_ANXIOUS_Y2	0.36	0.38	0.13	0.13	0.32

=====

Country: Mexico

Coefficient alpha (survey weighted): 0.859

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.86	0.86	0.83	0.61	6.4	0.003	0.88	0.82	0.62

95% confidence boundaries

	lower	alpha	upper
Feldt	0.86	0.86	0.87
Duhachek	0.86	0.86	0.87

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha se	var.r	med.r
DEPRESSED_Y2	0.80	0.80	0.74	0.58	4.1	0.0045	0.0031	0.57
INTEREST_Y2	0.84	0.85	0.79	0.65	5.5	0.0036	0.0021	0.64
CONTROL_WORRY_Y2	0.84	0.84	0.79	0.64	5.3	0.0037	0.0043	0.65
FEEL_ANXIOUS_Y2	0.81	0.82	0.75	0.60	4.4	0.0043	0.0036	0.60

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	2272	0.87	0.87	0.83	0.76	0.82	0.96
INTEREST_Y2	2268	0.81	0.82	0.72	0.67	0.94	0.97
CONTROL_WORRY_Y2	2269	0.83	0.82	0.73	0.68	0.90	1.02
FEEL_ANXIOUS_Y2	2272	0.86	0.86	0.80	0.74	0.86	0.95

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.47	0.32	0.12	0.09	0.61
INTEREST_Y2	0.40	0.37	0.13	0.10	0.61
CONTROL_WORRY_Y2	0.46	0.30	0.13	0.12	0.61
FEEL_ANXIOUS_Y2	0.44	0.35	0.12	0.09	0.61

=====

Country: Nigeria

Coefficient alpha (survey weighted): 0.713

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.72	0.72	0.66	0.39	2.5	0.0056	1.2	0.78	0.39

95% confidence boundaries

	lower	alpha	upper
Feldt	0.71	0.72	0.73
Duhachek	0.71	0.72	0.73

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha se	var.r	med.r
DEPRESSED_Y2	0.63	0.63	0.54	0.37	1.7	0.0077	0.00365	0.35
INTEREST_Y2	0.70	0.70	0.61	0.43	2.3	0.0064	0.00031	0.43
CONTROL_WORRY_Y2	0.64	0.65	0.55	0.38	1.8	0.0075	0.00463	0.36
FEEL_ANXIOUS_Y2	0.64	0.64	0.55	0.38	1.8	0.0075	0.00124	0.36

```

Item statistics
      n raw.r std.r r.cor r.drop mean  sd
DEPRESSED_Y2    3139  0.76  0.76  0.64  0.54  1.2 1.0
INTEREST_Y2     3138  0.69  0.69  0.51  0.44  1.5 1.1
CONTROL_WORRY_Y2 3135  0.75  0.75  0.62  0.52  1.2 1.1
FEEL_ANXIOUS_Y2  3131  0.75  0.75  0.62  0.52  1.1 1.0

Non missing response frequency for each item
      0    1    2    3 miss
DEPRESSED_Y2    0.33 0.32 0.21 0.14 0.54
INTEREST_Y2     0.22 0.34 0.22 0.23 0.54
CONTROL_WORRY_Y2 0.33 0.32 0.17 0.17 0.54
FEEL_ANXIOUS_Y2  0.37 0.30 0.19 0.13 0.54
## ===== ##
## Country: Philippines

## Coefficient alpha (survey weighted): 0.726

## Coefficeint alpha without survey adjustments:

Reliability analysis
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha std.alpha G6(smc) average_r S/N ase mean sd median_r
      0.72      0.72      0.67      0.39 2.6 0.0062  1.3 0.79      0.37

95% confidence boundaries
      lower alpha upper
Feldt    0.71  0.72  0.73
Duhachek 0.71  0.72  0.73

Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N alpha se var.r med.r
DEPRESSED_Y2    0.65    0.65    0.56    0.38 1.9  0.0083 0.0087  0.34
INTEREST_Y2     0.71    0.71    0.63    0.46 2.5  0.0068 0.0015  0.46
CONTROL_WORRY_Y2 0.64    0.64    0.55    0.37 1.8  0.0086 0.0059  0.33
FEEL_ANXIOUS_Y2  0.63    0.63    0.53    0.36 1.7  0.0088 0.0021  0.34

Item statistics
      n raw.r std.r r.cor r.drop mean  sd
DEPRESSED_Y2    2680  0.74  0.75  0.62  0.52  1.1 1.0
INTEREST_Y2     2677  0.67  0.67  0.48  0.41  1.5 1.1

```

CONTROL_WORRY_Y2	2681	0.77	0.76	0.64	0.54	1.5	1.2
FEEL_ANXIOUS_Y2	2682	0.77	0.77	0.67	0.56	1.1	1.1

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.37	0.30	0.22	0.12	0.49
INTEREST_Y2	0.22	0.30	0.28	0.21	0.49
CONTROL_WORRY_Y2	0.25	0.26	0.20	0.29	0.49
FEEL_ANXIOUS_Y2	0.38	0.27	0.22	0.13	0.49

=====

Country: Poland

Coefficient alpha (survey weighted): 0.854

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.83	0.83	0.8	0.56	5	0.0027	0.43	0.54	0.56

95% confidence boundaries

	lower	alpha	upper
Feldt	0.83	0.83	0.84
Duhachek	0.83	0.83	0.84

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.77	0.78	0.70	0.54	3.5	0.0039	0.0039	0.52	
INTEREST_Y2	0.81	0.81	0.74	0.58	4.2	0.0033	0.0026	0.61	
CONTROL_WORRY_Y2	0.77	0.77	0.70	0.53	3.4	0.0039	0.0027	0.53	
FEEL_ANXIOUS_Y2	0.80	0.80	0.74	0.58	4.1	0.0034	0.0026	0.59	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	6445	0.83	0.84	0.76	0.69	0.35	0.63
INTEREST_Y2	6453	0.80	0.79	0.68	0.62	0.52	0.70
CONTROL_WORRY_Y2	6443	0.83	0.84	0.77	0.70	0.34	0.63
FEEL_ANXIOUS_Y2	6434	0.80	0.80	0.70	0.63	0.52	0.67

Non missing response frequency for each item

0	1	2	3	miss
---	---	---	---	------

```

DEPRESSED_Y2      0.72 0.22 0.04 0.01 0.38
INTEREST_Y2       0.59 0.32 0.07 0.02 0.38
CONTROL_WORRY_Y2  0.73 0.21 0.04 0.01 0.38
FEEL_ANXIOUS_Y2   0.56 0.37 0.05 0.02 0.38
## ===== ##
## Country: South Africa

## Coefficient alpha (survey weighted): 0.699

## Coefficeint alpha without survey adjustments:

Reliability analysis
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

      raw_alpha std.alpha G6(smc) average_r S/N      ase mean      sd median_r
      0.7        0.7      0.64      0.37 2.3 0.0095  1.2 0.75      0.38

      95% confidence boundaries
            lower alpha upper
Feldt      0.68  0.7  0.72
Duhachek  0.68  0.7  0.72

Reliability if an item is dropped:

      raw_alpha std.alpha G6(smc) average_r S/N alpha se      var.r med.r
DEPRESSED_Y2      0.61      0.61  0.51      0.34 1.5  0.013 0.00172  0.33
INTEREST_Y2       0.66      0.66  0.57      0.40 2.0  0.011 0.00027  0.39
CONTROL_WORRY_Y2  0.63      0.63  0.53      0.36 1.7  0.013 0.00207  0.38
FEEL_ANXIOUS_Y2   0.64      0.64  0.55      0.37 1.8  0.012 0.00204  0.38

Item statistics

      n raw.r std.r r.cor r.drop mean  sd
DEPRESSED_Y2  977 0.75 0.75 0.63  0.53 1.2 1.0
INTEREST_Y2   976 0.69 0.69 0.52  0.44 1.2 1.0
CONTROL_WORRY_Y2 977 0.74 0.73 0.60  0.50 1.3 1.1
FEEL_ANXIOUS_Y2 978 0.72 0.72 0.56  0.47 1.1 1.0

Non missing response frequency for each item
      0  1  2  3 miss
DEPRESSED_Y2  0.29 0.37 0.18 0.16 0.63
INTEREST_Y2   0.30 0.38 0.17 0.14 0.63
CONTROL_WORRY_Y2 0.30 0.32 0.18 0.19 0.63
FEEL_ANXIOUS_Y2 0.36 0.35 0.16 0.13 0.63
## ===== ##

```

```

## Country: Spain

## Coefficient alpha (survey weighted): 0.854

## Coefficeint alpha without survey adjustments:

Reliability analysis
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

      raw_alpha std.alpha G6(smc) average_r S/N    ase mean    sd median_r
      0.86      0.86      0.82      0.6    6 0.0029  1.1 0.82      0.62

      95% confidence boundaries
            lower alpha upper
Feldt      0.85  0.86  0.86
Duhachek  0.85  0.86  0.86

Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N alpha se    var.r med.r
DEPRESSED_Y2      0.80      0.80      0.73      0.57 4.0    0.0043 3.2e-
03 0.55
INTEREST_Y2      0.84      0.84      0.78      0.63 5.2    0.0035 3.2e-
05 0.64
CONTROL_WORRY_Y2  0.81      0.81      0.75      0.59 4.4    0.0041 2.7e-
03 0.62
FEEL_ANXIOUS_Y2  0.82      0.82      0.75      0.60 4.5    0.0040 2.0e-
03 0.62

Item statistics
      n raw.r std.r r.cor r.drop mean    sd
DEPRESSED_Y2  2918 0.86 0.86 0.80 0.74 0.97 0.98
INTEREST_Y2   2919 0.80 0.81 0.70 0.65 1.05 0.94
CONTROL_WORRY_Y2 2920 0.85 0.84 0.77 0.71 0.99 1.01
FEEL_ANXIOUS_Y2 2915 0.84 0.84 0.76 0.70 1.23 0.98

Non missing response frequency for each item
      0    1    2    3 miss
DEPRESSED_Y2  0.38 0.37 0.14 0.11 0.54
INTEREST_Y2   0.32 0.41 0.18 0.10 0.54
CONTROL_WORRY_Y2 0.40 0.33 0.16 0.12 0.54
FEEL_ANXIOUS_Y2 0.23 0.45 0.16 0.15 0.54
## ===== ##
## Country: Sweden

```

Coefficient alpha (survey weighted): 0.854

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.85	0.86	0.84	0.6	6	0.002	0.67	0.74	0.61

95% confidence boundaries

	lower	alpha	upper
Feldt	0.85	0.85	0.86
Duhachek	0.85	0.85	0.86

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.78	0.79	0.76	0.56	3.8	0.0032	0.0408	0.45	
INTEREST_Y2	0.89	0.89	0.85	0.73	8.1	0.0016	0.0028	0.70	
CONTROL_WORRY_Y2	0.78	0.79	0.74	0.55	3.7	0.0031	0.0174	0.53	
FEEL_ANXIOUS_Y2	0.79	0.79	0.74	0.56	3.8	0.0030	0.0170	0.53	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	11575	0.87	0.88	0.82	0.76	0.65	0.87
INTEREST_Y2	11515	0.73	0.72	0.56	0.52	0.78	0.94
CONTROL_WORRY_Y2	11565	0.87	0.88	0.85	0.77	0.54	0.84
FEEL_ANXIOUS_Y2	11560	0.87	0.87	0.84	0.75	0.73	0.87

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.56	0.30	0.08	0.06	0.23
INTEREST_Y2	0.51	0.27	0.15	0.07	0.24
CONTROL_WORRY_Y2	0.64	0.23	0.08	0.05	0.23
FEEL_ANXIOUS_Y2	0.49	0.35	0.09	0.06	0.23

=====

Country: Tanzania

Coefficient alpha (survey weighted): 0.692

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.7	0.7	0.65	0.37	2.4	0.0052	1	0.8	0.35

95% confidence boundaries

	lower	alpha	upper
Feldt	0.69	0.7	0.71
Duhachek	0.69	0.7	0.71

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.62	0.62	0.55	0.36	1.7	0.0071	0.0214	0.27	
INTEREST_Y2	0.72	0.72	0.64	0.47	2.6	0.0051	0.0030	0.46	
CONTROL_WORRY_Y2	0.61	0.61	0.52	0.34	1.6	0.0072	0.0103	0.29	
FEEL_ANXIOUS_Y2	0.59	0.59	0.50	0.33	1.4	0.0075	0.0064	0.29	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	5571	0.74	0.75	0.61	0.51	1.18	1.1
INTEREST_Y2	5567	0.65	0.63	0.41	0.35	1.21	1.2
CONTROL_WORRY_Y2	5568	0.75	0.76	0.65	0.53	0.87	1.1
FEEL_ANXIOUS_Y2	5572	0.77	0.78	0.68	0.56	0.87	1.1

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.40	0.17	0.29	0.14	0.39
INTEREST_Y2	0.42	0.16	0.23	0.20	0.39
CONTROL_WORRY_Y2	0.55	0.13	0.22	0.10	0.39
FEEL_ANXIOUS_Y2	0.54	0.13	0.24	0.09	0.39

=====

Country: Turkey

Coefficient alpha (survey weighted): 0.821

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.85	0.85	0.82	0.58	5.6	0.0065	1.2	0.94	0.6

```

95% confidence boundaries
      lower alpha upper
Feldt      0.84  0.85  0.86
Duhachek   0.84  0.85  0.86

```

```

Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N alpha se  var.r med.r
DEPRESSED_Y2      0.78      0.78   0.71      0.54 3.5   0.0101 0.0055  0.54
INTEREST_Y2       0.84      0.84   0.77      0.63 5.1   0.0074 0.0020  0.61
CONTROL_WORRY_Y2  0.82      0.82   0.77      0.61 4.7   0.0080 0.0050  0.62
FEEL_ANXIOUS_Y2   0.79      0.79   0.73      0.56 3.8   0.0095 0.0066  0.59

```

```

Item statistics
      n raw.r std.r r.cor r.drop mean  sd
DEPRESSED_Y2  498  0.87  0.87  0.82   0.76 1.22 1.1
INTEREST_Y2   497  0.79  0.79  0.68   0.62 1.26 1.2
CONTROL_WORRY_Y2 499  0.80  0.81  0.70   0.65 0.92 1.1
FEEL_ANXIOUS_Y2 499  0.85  0.85  0.79   0.72 1.36 1.1

```

Non missing response frequency for each item

```

      0    1    2    3 miss
DEPRESSED_Y2  0.36 0.25 0.18 0.20 0.66
INTEREST_Y2   0.37 0.23 0.19 0.22 0.66
CONTROL_WORRY_Y2 0.49 0.24 0.13 0.14 0.66
FEEL_ANXIOUS_Y2 0.29 0.29 0.19 0.23 0.66

```

```
## ===== ##
```

```
## Country: United Kingdom
```

```
## Coefficient alpha (survey weighted): 0.904
```

```
## Coefficeint alpha without survey adjustments:
```

Reliability analysis

```
Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)
```

```

raw_alpha std.alpha G6(smc) average_r S/N   ase mean  sd median_r
      0.9      0.9   0.89      0.7 9.2 0.0022 0.79 0.83   0.71

```

```

95% confidence boundaries
      lower alpha upper
Feldt      0.9   0.9  0.91
Duhachek   0.9   0.9  0.91

```

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.86	0.86	0.82	0.67	6.2	0.0034	0.0109	0.62	
INTEREST_Y2	0.89	0.89	0.85	0.73	8.3	0.0025	0.0026	0.72	
CONTROL_WORRY_Y2	0.87	0.87	0.82	0.69	6.5	0.0032	0.0057	0.70	
FEEL_ANXIOUS_Y2	0.87	0.87	0.83	0.70	6.9	0.0030	0.0050	0.72	

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	3596	0.90	0.90	0.86	0.82	0.76	0.93
INTEREST_Y2	3610	0.85	0.85	0.77	0.73	0.82	0.96
CONTROL_WORRY_Y2	3612	0.89	0.89	0.85	0.80	0.75	0.95
FEEL_ANXIOUS_Y2	3601	0.88	0.88	0.83	0.78	0.82	0.94

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.51	0.30	0.12	0.07	0.33
INTEREST_Y2	0.48	0.29	0.14	0.08	0.33
CONTROL_WORRY_Y2	0.53	0.28	0.11	0.08	0.33
FEEL_ANXIOUS_Y2	0.47	0.32	0.12	0.08	0.33

=====

Country: United States

Coefficient alpha (survey weighted): 0.886

Coefficeint alpha without survey adjustments:

Reliability analysis

Call: psych::alpha(x = tmp.dat[, PHQ4.items], warnings = FALSE)

raw_alpha	std.alpha	G6(smc)	average_r	S/N	ase	mean	sd	median_r
0.87	0.87	0.86	0.63	6.8	0.0011	0.57	0.67	0.62

95% confidence boundaries

	lower	alpha	upper
Feldt	0.87	0.87	0.87
Duhachek	0.87	0.87	0.87

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	average_r	S/N	alpha	se	var.r	med.r
DEPRESSED_Y2	0.82	0.82	0.76	0.60	4.4	0.0016	0.0133	0.54	
INTEREST_Y2	0.85	0.85	0.80	0.66	5.8	0.0013	0.0037	0.63	

CONTROL_WORRY_Y2	0.83	0.83	0.78	0.62	5.0	0.0015	0.0111	0.62
FEEL_ANXIOUS_Y2	0.84	0.84	0.79	0.63	5.2	0.0015	0.0094	0.63

Item statistics

	n	raw.r	std.r	r.cor	r.drop	mean	sd
DEPRESSED_Y2	32155	0.87	0.88	0.83	0.77	0.50	0.75
INTEREST_Y2	32118	0.82	0.82	0.74	0.68	0.54	0.78
CONTROL_WORRY_Y2	32194	0.86	0.85	0.79	0.73	0.55	0.80
FEEL_ANXIOUS_Y2	32147	0.85	0.84	0.78	0.72	0.67	0.81

Non missing response frequency for each item

	0	1	2	3	miss
DEPRESSED_Y2	0.63	0.28	0.06	0.03	0.16
INTEREST_Y2	0.60	0.29	0.08	0.03	0.16
CONTROL_WORRY_Y2	0.60	0.28	0.07	0.04	0.16
FEEL_ANXIOUS_Y2	0.50	0.37	0.08	0.05	0.16

3.2.1 Summary table

```
## Alpha summary table
list.alpha |>
  bind_rows(.id="Country") |>
  rename(
    unadj.alpha = 3,
    unadj.alpha.ci.lb = 4,
    unadj.alpha.ci.ub = 5
  ) |>
  arrange(svyalpha) |>
  flextable() |>
  colformat_double(digits = 3) |>
  add_header_lines("Summary of coefficient alpha estimates") |>
  autofit()
```

Summary of coefficient alpha estimates				
Country	svyalpha	unadj.alpha	unadj.alpha.ci.lb	unadj.alpha.ci.ub
Tanzania	0.692	0.699	0.689	0.709
India	0.695	0.698	0.689	0.706
South Africa	0.699	0.699	0.680	0.717

Summary of coefficient alpha estimates				
Country	svyalpha	unadj.alpha	unadj.alpha.ci.lb	unadj.alpha.ci.ub
Nigeria	0.713	0.717	0.706	0.728
Philippines	0.726	0.721	0.709	0.733
Kenya	0.738	0.736	0.728	0.744
Egypt	0.777	0.766	0.754	0.776
Indonesia	0.799	0.817	0.810	0.824
China	0.811	0.814	0.805	0.822
Turkey	0.821	0.848	0.835	0.861
Brazil	0.841	0.853	0.849	0.857
Germany	0.849	0.862	0.857	0.866
Argentina	0.852	0.858	0.852	0.863
Hong Kong	0.853	0.848	0.839	0.856
Poland	0.854	0.832	0.827	0.837
Sweden	0.854	0.853	0.849	0.857
Spain	0.854	0.857	0.851	0.863
Mexico	0.859	0.863	0.858	0.869
Australia	0.874	0.872	0.865	0.879
Israel	0.876	0.872	0.865	0.879
United States	0.886	0.871	0.868	0.873
United Kingdom	0.904	0.902	0.898	0.906
Japan	0.910	0.914	0.912	0.916

4 Multi-Group CFA

Next, multi-group CFA models were estimated using increasingly restrictive tests of invariance for completeness. The separate country CFA analyses conducted previously provide a more holistic assessment of the uniqueness of the measurement properties within each country.

```
## Need to re-structure the lists for input into lavaan

lst.cov <- list()
lst.mean <- list()
lst.ng <- list()
#lst.th <- list()
#lst.nacov <- list()
#lst.wls.v <- list()

for(cur.country in COUNTRIES){
  lst.cov[[cur.country]] <- sample.stats[[cur.country]]$cov
  lst.mean[[cur.country]] <- sample.stats[[cur.country]]$mean
  lst.ng[[cur.country]] <- sample.stats[[cur.country]]$sample.nobs
  #lst.th[[cur.country]] <- sample.stats[[cur.country]]$sample.th
  #lst.nacov[[cur.country]] <- sample.stats[[cur.country]]$NACOV
  #lst.wls.v[[cur.country]] <- sample.stats[[cur.country]]$WLS.V
}
```

Note. Do to how many groups there are (ng=23), the output of the specific models is not printed.

4.1 Covariance matrix input – allows for direct replication

- Pro: Fully accounts for complex sampling design within each country.
- Con: Does not account for the discrete nature of these data with a categorical model.

4.1.1 Configural Model

```
fit.config <- cfa(  
  mod, std.lv = TRUE, ordered=TRUE,  
  sample.cov = lst.cov,  
  sample.mean = lst.mean,  
  sample.nobs = lst.ng  
)  
  
fit.config
```

lavaan 0.6-21 ended normally after 267 iterations

Estimator	ML
Optimization method	NLMINB
Number of model parameters	299
Number of observations per group:	
Argentina	2932.00000000153
Australia	2582.00004721915
Brazil	4274.00000072482
China	4544.00000002019
Egypt	3040.00004437456
Germany	5529.00000403925
Hong Kong	707.000248016404
India	6374.00000045487
Indonesia	2684.000001417
Israel	2490.00002081761
Japan	13972.0000004316
Kenya	7698.00001112736
Mexico	2278.00000004553
Nigeria	3146.00011189409
Philippines	2682.00024216278
Poland	6478.00001620523
South Africa	978.000000002357
Spain	2924.00000076902
Sweden	11609.0108778427
Tanzania	5583.00000008529
Turkey	500.000000452455
United Kingdom	3619.00000002024
United States	32245.0003114482

Model Test User Model:

Test statistic	164.448
Degrees of freedom	23
P-value (Chi-square)	0.000
Test statistic for each group:	
Argentina	6.916
Australia	1.092
Brazil	15.986
China	9.389
Egypt	0.110
Germany	0.023
Hong Kong	0.042
India	26.214
Indonesia	12.422
Israel	26.343
Japan	11.075
Kenya	2.321
Mexico	7.137
Nigeria	4.365
Philippines	7.918
Poland	13.170
South Africa	0.001
Spain	11.909
Sweden	1.741
Tanzania	0.582
Turkey	0.884
United Kingdom	1.554
United States	3.255

Modification indices

```
tb_mod_indices(fit.config, sort.=TRUE, maximum.number = 20)
```

lhs	op	rhs	block	group	level	mi
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	10	10	1	26.20
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	10	10	1	26.20
INTEREST_Y2	~~	CONTROL_WORRY_Y2	10	10	1	26.20
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	10	10	1	26.20

lhs	op	rhs	block	group	level	mi
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	26.16
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	26.16
INTEREST_Y2	~~	CONTROL_WORRY_Y2	8	8	1	26.16
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	8	8	1	26.16
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	3	3	1	15.96
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	3	3	1	15.96
INTEREST_Y2	~~	CONTROL_WORRY_Y2	3	3	1	15.96
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	3	3	1	15.96
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	16	16	1	13.16
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	16	16	1	13.16
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	16	16	1	13.16
INTEREST_Y2	~~	CONTROL_WORRY_Y2	16	16	1	13.16
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	9	9	1	12.39
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	9	9	1	12.39
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	9	9	1	12.39
INTEREST_Y2	~~	CONTROL_WORRY_Y2	9	9	1	12.39

4.1.2 Metric Invariance Model

```
fit.metric <- cfa(  
  mod, std.lv = TRUE,  
  sample.cov = lst.cov,  
  sample.mean = lst.mean,  
  sample.nobs = lst.ng,  
  group.equal = "loadings"  
)  
  
fit.metric
```

lavaan 0.6-21 ended normally after 356 iterations

Estimator	ML
Optimization method	NLMINB
Number of model parameters	343
Number of equality constraints	88
Number of observations per group:	
Argentina	2932.00000000153
Australia	2582.00004721915
Brazil	4274.00000072482
China	4544.00000002019
Egypt	3040.00004437456
Germany	5529.00000403925
Hong Kong	707.000248016404
India	6374.00000045487
Indonesia	2684.000001417
Israel	2490.00002081761
Japan	13972.0000004316
Kenya	7698.00001112736
Mexico	2278.00000004553
Nigeria	3146.00011189409
Philippines	2682.00024216278
Poland	6478.00001620523
South Africa	978.000000002357
Spain	2924.00000076902
Sweden	11609.0108778427
Tanzania	5583.00000008529
Turkey	500.000000452455

United Kingdom	3619.00000002024
United States	32245.0003114482

Model Test User Model:

Test statistic	1228.537
Degrees of freedom	67
P-value (Chi-square)	0.000
Test statistic for each group:	
Argentina	9.375
Australia	9.694
Brazil	25.169
China	41.106
Egypt	42.362
Germany	28.282
Hong Kong	29.240
India	153.808
Indonesia	51.963
Israel	48.200
Japan	341.269
Kenya	5.839
Mexico	8.697
Nigeria	4.839
Philippines	12.627
Poland	80.887
South Africa	2.058
Spain	19.883
Sweden	138.476
Tanzania	35.314
Turkey	4.899
United Kingdom	28.989
United States	105.561

Modification indices

```
tb_mod_indices(fit.metric, sort.=TRUE, maximum.number = 20)
```

lhs	op	rhs	block	group	level	mi
dep	=~	FEEL_ANXIOUS_Y2	11	11	1	366.60
dep	=~	CONTROL_WORRY_Y2	11	11	1	366.60
anx	=~	DEPRESSED_Y2	19	19	1	145.49

lhs	op	rhs	block	group	level	mi
anx	=~	INTEREST_Y2	19	19	1	145.49
anx	=~	DEPRESSED_Y2	8	8	1	122.02
anx	=~	INTEREST_Y2	8	8	1	122.02
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	92.27
dep	=~	CONTROL_WORRY_Y2	23	23	1	87.63
dep	=~	FEEL_ANXIOUS_Y2	23	23	1	87.63
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	78.49
anx	=~	INTEREST_Y2	23	23	1	67.21
anx	=~	DEPRESSED_Y2	23	23	1	67.21
DEPRESSED_Y2	~~	CONTROL_WORRY_Y2	11	11	1	60.60
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	23	23	1	58.36
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	11	11	1	58.22
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	16	16	1	54.45
anx	=~	DEPRESSED_Y2	16	16	1	44.48
anx	=~	INTEREST_Y2	16	16	1	44.48
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	9	9	1	43.03
anx	=~	DEPRESSED_Y2	5	5	1	41.44

4.1.3 Scalar Invariance Model

```
fit.scalar <- cfa(  
  mod, std.lv = TRUE,  
  sample.cov = lst.cov,  
  sample.mean = lst.mean,  
  sample.nobs = lst.ng,  
  group.equal = c("loadings", "intercepts")  
)  
  
fit.scalar
```

lavaan 0.6-21 ended normally after 398 iterations

Estimator	ML
Optimization method	NLMINB
Number of model parameters	387
Number of equality constraints	176
Number of observations per group:	
Argentina	2932.00000000153
Australia	2582.00004721915
Brazil	4274.00000072482
China	4544.00000002019
Egypt	3040.00004437456
Germany	5529.00000403925
Hong Kong	707.000248016404
India	6374.00000045487
Indonesia	2684.000001417
Israel	2490.00002081761
Japan	13972.0000004316
Kenya	7698.00001112736
Mexico	2278.00000004553
Nigeria	3146.00011189409
Philippines	2682.00024216278
Poland	6478.00001620523
South Africa	978.000000002357
Spain	2924.00000076902
Sweden	11609.0108778427
Tanzania	5583.00000008529
Turkey	500.000000452455

United Kingdom	3619.00000002024
United States	32245.0003114482

Model Test User Model:

Test statistic	6620.295
Degrees of freedom	111
P-value (Chi-square)	0.000

Test statistic for each group:

Argentina	103.415
Australia	22.722
Brazil	235.722
China	267.819
Egypt	181.012
Germany	535.131
Hong Kong	95.954
India	599.286
Indonesia	185.466
Israel	355.942
Japan	1307.276
Kenya	350.820
Mexico	153.423
Nigeria	284.882
Philippines	830.715
Poland	146.147
South Africa	70.615
Spain	73.750
Sweden	329.139
Tanzania	126.377
Turkey	50.148
United Kingdom	55.421
United States	259.111

Modification indices

```
tb_mod_indices(fit.scalar, sort.=TRUE, maximum.number = 20)
```

lhs	op	rhs	block	group	level	mi
anx	=~	DEPRESSED_Y2	19	19	1	190.4
anx	=~	INTEREST_Y2	19	19	1	190.4
anx	=~	DEPRESSED_Y2	9	9	1	163.7

lhs	op	rhs	block	group	level	mi
dep	=~	CONTROL_WORRY_Y2	15	15	1	143.64
INTEREST_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	125.84
dep	=~	CONTROL_WORRY_Y2	10	10	1	121.44
dep	=~	FEEL_ANXIOUS_Y2	10	10	1	121.44
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	120.34
dep	=~	FEEL_ANXIOUS_Y2	11	11	1	118.84
dep	=~	CONTROL_WORRY_Y2	11	11	1	118.84
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	9	9	1	117.04
anx	=~	INTEREST_Y2	4	4	1	116.84
anx	=~	DEPRESSED_Y2	4	4	1	116.84
anx	=~	INTEREST_Y2	6	6	1	113.84
anx	=~	DEPRESSED_Y2	6	6	1	113.84
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	9	9	1	112.64
dep	=~	FEEL_ANXIOUS_Y2	15	15	1	112.14
anx	=~	INTEREST_Y2	8	8	1	101.94
anx	=~	DEPRESSED_Y2	8	8	1	101.94
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	15	15	1	92.39

4.1.4 Strict Invariance Model

```
fit.strict <- cfa(  
  mod, std.lv = TRUE,  
  sample.cov = lst.cov,  
  sample.mean = lst.mean,  
  sample.nobs = lst.ng,  
  group.equal = c("loadings", "intercepts", "residuals")  
)  
  
fit.strict
```

lavaan 0.6-21 ended normally after 338 iterations

Estimator	ML
Optimization method	NLMINB
Number of model parameters	387
Number of equality constraints	264
Number of observations per group:	
Argentina	2932.00000000153
Australia	2582.00004721915
Brazil	4274.00000072482
China	4544.00000002019
Egypt	3040.00004437456
Germany	5529.00000403925
Hong Kong	707.000248016404
India	6374.00000045487
Indonesia	2684.000001417
Israel	2490.00002081761
Japan	13972.0000004316
Kenya	7698.00001112736
Mexico	2278.00000004553
Nigeria	3146.00011189409
Philippines	2682.00024216278
Poland	6478.00001620523
South Africa	978.000000002357
Spain	2924.00000076902
Sweden	11609.0108778427
Tanzania	5583.00000008529
Turkey	500.000000452455

United Kingdom	3619.00000002024
United States	32245.0003114482

Model Test User Model:

Test statistic	47824.968
Degrees of freedom	199
P-value (Chi-square)	0.000

Test statistic for each group:

Argentina	113.875
Australia	503.190
Brazil	910.253
China	800.341
Egypt	1120.177
Germany	1409.220
Hong Kong	237.058
India	6123.654
Indonesia	285.494
Israel	778.077
Japan	5085.612
Kenya	3319.665
Mexico	216.073
Nigeria	2171.421
Philippines	2847.441
Poland	2210.430
South Africa	736.982
Spain	202.186
Sweden	2881.518
Tanzania	4050.378
Turkey	284.100
United Kingdom	644.615
United States	10893.208

Modification indices

```
tb_mod_indices(fit.strict, sort.=TRUE, maximum.number = 20)
```

lhs	op	rhs	block	group	level	mi
DEPRESSED_Y2	~~	INTEREST_Y2	8	8	1	6,067.73
DEPRESSED_Y2	~~	INTEREST_Y2	20	20	1	5,691.27
DEPRESSED_Y2	~~	INTEREST_Y2	23	23	1	4,519.85

lhs	op	rhs	block	group	level	mi
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	8	8	1	3,804.79
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	23	23	1	3,375.01
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	12	12	1	2,910.87
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	15	15	1	2,147.70
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	14	14	1	1,946.31
DEPRESSED_Y2	~~	INTEREST_Y2	12	12	1	1,906.53
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	19	19	1	1,620.58
DEPRESSED_Y2	~~	INTEREST_Y2	15	15	1	1,473.30
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	20	20	1	1,466.89
DEPRESSED_Y2	~~	INTEREST_Y2	14	14	1	1,278.69
DEPRESSED_Y2	~~	FEEL_ANXIOUS_Y2	11	11	1	966.09
DEPRESSED_Y2	~~	INTEREST_Y2	11	11	1	814.22
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	17	17	1	800.73
DEPRESSED_Y2	~~	INTEREST_Y2	5	5	1	750.13
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	3	3	1	730.54
CONTROL_WORRY_Y2	~~	FEEL_ANXIOUS_Y2	5	5	1	508.51
anx	=~	INTEREST_Y2	23	23	1	417.37

4.1.5 Fit Comparison

```
# model comparison tests
summary(compareFit(fit.config, fit.metric, fit.scalar, fit.strict))
```

Nested Model Comparison

Chi-Squared Difference Test

	Df	AIC	BIC	Chisq	Chisq diff	RMSEA	Df diff	Pr(>Chisq)
fit.config	23	1138560	1141480	164.45				
fit.metric	67	1139536	1142027	1228.54	1064	0.064326	44	< 2.2e-16 ***
fit.scalar	111	1144840	1146901	6620.29	5392	0.147282	44	< 2.2e-16 ***
fit.strict	199	1185869	1187070	47824.97	41205	0.288775	88	< 2.2e-16 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Model Fit Indices

	chisq	df	pvalue	rmsea	cfi	tli	srmr	aic	bic
fit.config	164.448†	23	.000	.033†	0.999†	0.996†	.003†	1138560.053†	1141480.249†
fit.metric	1228.537	67	.000	.056	0.995	.990	.025	1139536.142	1142026.610
fit.scalar	6620.295	111	.000	.102	.973	.966	.043	1144839.900	1146900.641
fit.strict	47824.968	199	.000	.207	.800	.861	.085	1185868.573	1187069.858

Differences in Fit Indices

	df	rmsea	cfi	tli	srmr	aic	bic
fit.metric - fit.config	44	0.022	-0.004	-0.006	0.022	976.089	546.361
fit.scalar - fit.metric	44	0.047	-0.022	-0.024	0.018	5303.758	4874.030
fit.strict - fit.scalar	88	0.104	-0.173	-0.105	0.043	41028.673	40169.218

4.2 Person-level data input

- Pro: Accounted for the discrete nature of these data with a categorical model.
- Con: Does not account for complex sampling design within each country.

Summary of models to be fitted:

1. A fully invariant (baseline) model to estimate the degree of potential misfit.
2. Configural model

4.2.1 Full invariant-ignoring group membership

Model only have 1 degree of freedom so there is no room for freeing parameters.

```
fit.fullinvar <- cfa(  
  model = mod  
  , data = df.cc  
  , std.lv = TRUE  
  , ordered = TRUE  
  , parameterization = "theta"  
  , missing = "pairwise"  
)  
  
summary(fit.fullinvar, ci=TRUE, fit.measure=TRUE, standardize=TRUE)
```

lavaan 0.6-21 ended normally after 55 iterations

Estimator	DWLS	
Optimization method	NLMINB	
Number of model parameters	17	
	Used	Total
Number of observations	128842	207919
Number of missing patterns	15	

Model Test User Model:

	Standard	Scaled
Test Statistic	36.919	135.375
Degrees of freedom	1	1
P-value (Unknown)	NA	0.000
Scaling correction factor		0.273
Shift parameter		0.000

simple second-order correction

Model Test Baseline Model:

Test statistic	933071.313	645034.952
Degrees of freedom	6	6
P-value	NA	0.000
Scaling correction factor		1.447

User Model versus Baseline Model:

Comparative Fit Index (CFI)	1.000	1.000
Tucker-Lewis Index (TLI)	1.000	0.999
Robust Comparative Fit Index (CFI)		0.999
Robust Tucker-Lewis Index (TLI)		0.995

Root Mean Square Error of Approximation:

RMSEA	0.017	0.032
90 Percent confidence interval - lower	0.012	0.028
90 Percent confidence interval - upper	0.022	0.037
P-value H ₀ : RMSEA ≤ 0.050	1.000	1.000
P-value H ₀ : RMSEA ≥ 0.080	0.000	0.000
Robust RMSEA		0.044
90 Percent confidence interval - lower		0.038
90 Percent confidence interval - upper		0.051
P-value H ₀ : Robust RMSEA ≤ 0.050		0.930
P-value H ₀ : Robust RMSEA ≥ 0.080		0.000

Standardized Root Mean Square Residual:

SRMR	0.004	0.004
------	-------	-------

Parameter Estimates:

Parameterization	Theta
Standard errors	Robust.sem
Information	Expected
Information saturated (h1) model	Unstructured

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep =~								
DEPRESSED_Y2	2.383	0.022	106.366	0.000	2.339	2.426	2.383	0.922
INTEREST_Y2	1.172	0.006	191.938	0.000	1.160	1.184	1.172	0.761
anx =~								
CONTROL_WORRY_	1.789	0.011	163.070	0.000	1.768	1.811	1.789	0.873
FEEL_ANXIOUS_Y	1.715	0.010	180.359	0.000	1.696	1.733	1.715	0.864
Covariances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
dep ~~								
anx	0.891	0.001	610.482	0.000	0.888	0.894	0.891	0.891
Thresholds:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2 1	0.085	0.009	9.283	0.000	0.067	0.103	0.085	0.033
DEPRESSED_Y2 2	2.318	0.020	115.581	0.000	2.279	2.357	2.318	0.897
DEPRESSED_Y2 3	3.740	0.029	128.881	0.000	3.683	3.796	3.740	1.447
INTEREST_Y2 t1	-0.152	0.005	-28.365	0.000	-0.162	-0.141	-	
0.152 -0.099								
INTEREST_Y2 t2	1.150	0.006	178.862	0.000	1.138	1.163	1.150	0.747
INTEREST_Y2 t3	2.057	0.008	259.828	0.000	2.042	2.073	2.057	1.335
CONTROL_WORRY_	0.192	0.007	26.093	0.000	0.177	0.206	0.192	0.094
CONTROL_WORRY_	1.787	0.011	168.670	0.000	1.766	1.808	1.787	0.872
CONTROL_WORRY_	2.823	0.013	211.624	0.000	2.797	2.849	2.823	1.377
FEEL_ANXIOUS_Y	-0.264	0.007	-38.616	0.000	-0.277	-0.251	-	
0.264 -0.133								
FEEL_ANXIOUS_Y	1.643	0.009	175.460	0.000	1.625	1.661	1.643	0.828
FEEL_ANXIOUS_Y	2.737	0.012	222.150	0.000	2.712	2.761	2.737	1.379
Variances:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
.DEPRESSED_Y2	1.000				1.000	1.000	1.000	0.150
.INTEREST_Y2	1.000				1.000	1.000	1.000	0.421
.CONTROL_WORRY_	1.000				1.000	1.000	1.000	0.238
.FEEL_ANXIOUS_Y	1.000				1.000	1.000	1.000	0.254
dep	1.000				1.000	1.000	1.000	1.000
anx	1.000				1.000	1.000	1.000	1.000
Scales y*:								
	Estimate	Std.Err	z-value	P(> z)	ci.lower	ci.upper	Std.lv	Std.all
DEPRESSED_Y2	0.387				0.387	0.387	0.387	1.000
INTEREST_Y2	0.649				0.649	0.649	0.649	1.000

CONTROL_WORRY_	0.488	0.488	0.488	0.488	1.000
FEEL_ANXIOUS_Y	0.504	0.504	0.504	0.504	1.000

```
#### Residuals
```

```
residuals(fit.fullinvar)
```

```
$type
```

```
[1] "raw"
```

```
$cov
```

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.008	0.000	
FEEL_ANXIOUS_Y2	0.004	-0.008	0.000	0.000

```
$mean
```

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

```
$th
```

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

Note. The largest residual correlation is between items Interest and Feel Anxious. However, given that analyses are conducted separately for the Depressed and Anxious factors, not accounting for a residual correlation cross-factors is not very important. Any major sources of potential non-invariance in factor loadings are of primary concern. Differences in level/location/scale of each item is not entirely problematic as the focal issue is on differences in how responses to the items relate to underlying factor and to other constructs (e.g., covariance not location).

We will now proceed with testing the invariance of the above model across countries to identify which countries contribute the most to misfit—the chi-square contribution specially.

4.2.2 Configural Model

Identification constraints:

- Latent response variable (LRV) distribution for each observed item cannot be uniquely identified in each country. Comparisons in the item location and scale not possible.
- LRV residual variance fixed to 1 in all countries
- LRV location fixed to 0 in all countries
- loadings freely estimated (not comparable across countries)
- thresholds freely estimated (not comparable across countries)
- factor means fixed to 0 in all countries (not comparable across countries)
- factor variances fixed to 1 in all countries (not comparable across countries)

```
mod.config <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
)  
summary(mod.config)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were iden

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

This model hypothesizes only configural invariance.

```
#cat(as.character(mod.config))
##
fit.config <- cfa(
  model = as.character(mod.config)
  , data = df.cc
  , group = "COUNTRY"
  , ordered = TRUE
  , parameterization = "theta"
  , missing = "pairwise"
)

fit.config
```

lavaan 0.6-21 ended normally after 2199 iterations

Estimator	DWLS	
Optimization method	NLMINB	
Number of model parameters	391	
Number of observations per group:	Used	Total
Sweden	11607	15068
United Kingdom	3619	5368
Germany	5528	9506
China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729
India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312

Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	
Mexico	8	
Nigeria	9	
Philippines	4	
Poland	9	
South Africa	4	
Spain	7	
Tanzania	10	
Turkey	3	
United States	14	
Hong Kong	3	

Model Test User Model:

	Standard	Scaled
Test Statistic	54.100	169.061
Degrees of freedom	23	23
P-value (Unknown)	NA	0.000
Scaling correction factor		0.323
Shift parameter		1.430
simple second-order correction		
Test statistic for each group:		
Sweden	13.164	13.164
United Kingdom	0.044	0.044
Germany	3.963	3.963
China	20.178	20.178
Argentina	0.596	0.596
Australia	0.054	0.054
Brazil	7.125	7.125
Egypt	0.190	0.190

India	54.867	54.867
Indonesia	2.425	2.425
Israel	21.580	21.580
Japan	0.842	0.842
Kenya	0.286	0.286
Mexico	5.993	5.993
Nigeria	14.838	14.838
Philippines	6.677	6.677
Poland	5.935	5.935
South Africa	0.089	0.089
Spain	1.359	1.359
Tanzania	4.286	4.286
Turkey	0.100	0.100
United States	4.344	4.344
Hong Kong	0.127	0.127

```
#### Residuals
residuals(fit.config)
```

```
$Sweden
$Sweden$type
[1] "raw"
```

```
$Sweden$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000  0.000
CONTROL_WORRY_Y2 -0.002  0.011  0.000
FEEL_ANXIOUS_Y2  0.003 -0.011  0.000  0.000
```

```
$Sweden$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$Sweden$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0              0              0              0
      FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
              0              0
```

```
$`United Kingdom`
```

```
$`United Kingdom`$type
[1] "raw"
```

```
$`United Kingdom`$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0
INTEREST_Y2      0      0
CONTROL_WORRY_Y2  0      0      0
FEEL_ANXIOUS_Y2  0      0      0      0
```

```
$`United Kingdom`$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
      0              0              0              0
```

```
$`United Kingdom`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
      0              0              0              0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      0              0
```

```
$Germany
$Germany$type
[1] "raw"
```

```
$Germany$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 -0.004 0.006 0.000
FEEL_ANXIOUS_Y2  0.005 -0.007 0.000 0.000
```

```
$Germany$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
      0              0              0              0
```

```
$Germany$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
      0              0              0              0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      0              0
```

\$China
\$China\$type
[1] "raw"

\$China\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.020	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.019	0.000	0.000

\$China\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$China\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$Argentina
\$Argentina\$type
[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.002	-0.004	0.000	
FEEL_ANXIOUS_Y2	-0.002	0.003	0.000	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

```
$Australia
$Australia$type
[1] "raw"
```

```
$Australia$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2  0.000 -0.001  0.000
FEEL_ANXIOUS_Y2  0.000  0.001  0.000  0.000
```

```
$Australia$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Australia$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0                0                0                0                0
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                0                0
```

```
$Brazil
$Brazil$type
[1] "raw"
```

```
$Brazil$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.006  0.010  0.000
FEEL_ANXIOUS_Y2  0.005 -0.009  0.000  0.000
```

```
$Brazil$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Brazil$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0                0                0                0                0
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                0                0
```

```
$Egypt
$Egypt$type
[1] "raw"
```

```
$Egypt$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2  0.001 -0.002  0.000
FEEL_ANXIOUS_Y2 -0.001  0.002  0.000  0.000
```

```
$Egypt$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Egypt$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0                0                0                0                0
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                0                0
```

```
$India
$India$type
[1] "raw"
```

```
$India$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.012  0.038  0.000
FEEL_ANXIOUS_Y2  0.008 -0.035  0.000  0.000
```

```
$India$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$India$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0                0                0                0                0
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
```

```

0
0

$Indonesia
$Indonesia$type
[1] "raw"

$Indonesia$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 -0.004 0.010 0.000
FEEL_ANXIOUS_Y2  0.003 -0.008 0.000 0.000

$Indonesia$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
0
0
0
0

$Indonesia$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
0
0
0
0
0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
0
0

$Israel
$Israel$type
[1] "raw"

$Israel$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 0.015 -0.034 0.000
FEEL_ANXIOUS_Y2 -0.007 0.016 0.000 0.000

$Israel$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
0
0
0
0

$Israel$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
0
0
0
0
0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
0
0

```

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
0	0

\$Japan
\$Japan\$type
[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.002	0.000	
FEEL_ANXIOUS_Y2	0.000	0.001	0.000	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$Kenya
\$Kenya\$type
[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.001	0.002	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.001	0.000	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2

	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$Mexico
\$Mexico\$type
[1] "raw"

\$Mexico\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.012	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.011	0.000	0.000

\$Mexico\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Mexico\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$Nigeria
\$Nigeria\$type
[1] "raw"

\$Nigeria\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.013	0.021	0.000	
FEEL_ANXIOUS_Y2	0.012	-0.022	0.000	0.000

\$Nigeria\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Nigeria\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

```
$Philippines
$Philippines$type
[1] "raw"
```

```
$Philippines$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 -0.011 0.015 0.000
FEEL_ANXIOUS_Y2  0.008 -0.015 0.000 0.000
```

```
$Philippines$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
0 0 0 0
```

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

```
$Poland
$Poland$type
[1] "raw"
```

```
$Poland$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 0.005 -0.007 0.000
FEEL_ANXIOUS_Y2 -0.008 0.008 0.000 0.000
```

```
$Poland$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
0 0 0 0
```

```
$Poland$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
      0                0                0                0                0
      FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      0                0
```

```
$`South Africa`
$`South Africa`$type
[1] "raw"
```

```
$`South Africa`$cov
      DEPRESSED_Y2      INTEREST_Y2      CONTROL_WORRY_Y2      FEEL_ANXIOUS_Y2
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 0.002 -0.003 0.000
FEEL_ANXIOUS_Y2 -0.002 0.003 0.000 0.000
```

```
$`South Africa`$mean
      DEPRESSED_Y2      INTEREST_Y2      CONTROL_WORRY_Y2      FEEL_ANXIOUS_Y2
      0                0                0                0
```

```
$`South Africa`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
      0                0                0                0                0
      FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      0                0
```

```
$Spain
$Spain$type
[1] "raw"
```

```
$Spain$cov
      DEPRESSED_Y2      INTEREST_Y2      CONTROL_WORRY_Y2      FEEL_ANXIOUS_Y2
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 -0.003 0.005 0.000
FEEL_ANXIOUS_Y2 0.003 -0.005 0.000 0.000
```

```
$Spain$mean
      DEPRESSED_Y2      INTEREST_Y2      CONTROL_WORRY_Y2      FEEL_ANXIOUS_Y2
      0                0                0                0
```

```
$Spain$th
  DEPRESSED_Y2|t1    DEPRESSED_Y2|t2    DEPRESSED_Y2|t3    INTEREST_Y2|t1    INTEREST_Y2|t2
0                0                0                0                0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
0                0
```

```
$Tanzania
$Tanzania$type
[1] "raw"
```

```
$Tanzania$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2    0.000
INTEREST_Y2     0.000 0.000
CONTROL_WORRY_Y2 -0.005 0.011 0.000
FEEL_ANXIOUS_Y2  0.004 -0.010 0.000 0.000
```

```
$Tanzania$mean
      DEPRESSED_Y2    INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
0                0                0                0
```

```
$Tanzania$th
  DEPRESSED_Y2|t1    DEPRESSED_Y2|t2    DEPRESSED_Y2|t3    INTEREST_Y2|t1    INTEREST_Y2|t2
0                0                0                0                0
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
0                0
```

```
$Turkey
$Turkey$type
[1] "raw"
```

```
$Turkey$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2    0.000
INTEREST_Y2     0.000 0.000
CONTROL_WORRY_Y2 0.002 -0.004 0.000
FEEL_ANXIOUS_Y2 -0.001 0.003 0.000 0.000
```

```
$Turkey$mean
      DEPRESSED_Y2    INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
```

	0	0	0	0	
--	---	---	---	---	--

\$Turkey\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$`United States`

\$`United States`\$type

[1] "raw"

\$`United States`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.002	0.003	0.000	
FEEL_ANXIOUS_Y2	0.002	-0.003	0.000	0.000

\$`United States`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United States`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

\$`Hong Kong`

\$`Hong Kong`\$type

[1] "raw"

\$`Hong Kong`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.001	0.004	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.004	0.000	0.000

\$`Hong Kong`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2	
0	0	0	0	
\$`Hong Kong`\$th				
DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

Based on the residuals, we found unexplained correlation between items Interest and Feel Anxious in China, India, Indonesia, and Israel, which is not concerning.

4.2.3 Threshold Invariance Model

Identification constraints:

- LRV distribution for each observed item is identified based on fixed thresholds. Comparisons in the item location and scale not possible.
- LRV residual variance freely estimated (except for group 1, Sweden, for identification fixed to 1.0)
- LRV location freely estimated (except for group 1, Sweden, for identification fixed to 0.0)
- loadings freely estimated (comparable across countries)
- thresholds freely estimated but constrained to equal across countries
- factor means fixed to 0 in all countries (not comparable across countries)
- factor variances fixed to 1 in all countries (not comparable across countries)

```
mod.threshold <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
  , group.equal = "thresholds"  
)  
  
summary(mod.threshold)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were iden

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

The following types of parameter were constrained to equality across groups:

thresholds

```
cat(as.character(mod.threshold))
```

LOADINGS:

[illegible]

THRESHOLDS:

[illegible]

```
## INTERCEPTS:
```

[illegible]

```
## UNIQUE-FACTOR VARIANCES:
```

[illegible]

```
## LATENT MEANS/INTERCEPTS:
```

```
dep ~ c(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)*1 + c(alpha.1.g
anx ~ c(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)*1 + c(alpha.2.g
```

```
## COMMON-FACTOR VARIANCES:
```

```
dep ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*dep + c(psi.1_1
anx ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*anx + c(psi.2_2
```

```
## COMMON-FACTOR COVARIANCES:
```

```
dep ~~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
```

```
fit.threshold <- cfa(
  model = as.character(mod.threshold)
  , data = df.cc
  , group = "COUNTRY"
  , ordered = TRUE
  , parameterization = "theta"
  , missing = "pairwise"
)

fit.threshold
```

lavaan 0.6-21 ended normally after 1994 iterations

Estimator	DWLS	
Optimization method	NLMINB	
Number of model parameters	567	
Number of equality constraints	264	
Number of observations per group:	Used	Total
Sweden	11607	15068
United Kingdom	3619	5368
Germany	5528	9506
China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729

India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312
Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	
Mexico	8	
Nigeria	9	
Philippines	4	
Poland	9	
South Africa	4	
Spain	7	
Tanzania	10	
Turkey	3	
United States	14	
Hong Kong	3	

Model Test User Model:

	Standard	Scaled
Test Statistic	2256.698	5592.781

Degrees of freedom	111	111
P-value (Unknown)	NA	0.000
Scaling correction factor		0.404
Shift parameter		11.291
simple second-order correction		
Test statistic for each group:		
Sweden	140.843	140.843
United Kingdom	11.747	11.747
Germany	14.303	14.303
China	95.741	95.741
Argentina	40.549	40.549
Australia	23.648	23.648
Brazil	13.470	13.470
Egypt	175.749	175.749
India	882.097	882.097
Indonesia	232.105	232.105
Israel	41.380	41.380
Japan	115.548	115.548
Kenya	764.211	764.211
Mexico	19.578	19.578
Nigeria	86.640	86.640
Philippines	222.929	222.929
Poland	14.934	14.934
South Africa	5.281	5.281
Spain	32.349	32.349
Tanzania	2384.784	2384.784
Turkey	8.970	8.970
United States	239.600	239.600
Hong Kong	26.325	26.325

```
#### Residuals
```

```
residuals(fit.threshold)
```

```
$$Sweden
```

```
$$Sweden$type
```

```
[1] "raw"
```

```
$$Sweden$cov
```

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.003	0.011	0.000	

FEEL_ANXIOUS_Y2 0.003 -0.011 0.000 0.000

\$Sweden\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Sweden\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.011	0.044	-0.043	0.017	0.009	0.004
0.050	0.053	0.001	-0.004	0.009	0.004
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.035	-0.037				

\$`United Kingdom`

\$`United Kingdom`\$type

[1] "raw"

\$`United Kingdom`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0			
INTEREST_Y2	0	0		
CONTROL_WORRY_Y2	0	0	0	
FEEL_ANXIOUS_Y2	0	0	0	0

\$`United Kingdom`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United Kingdom`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.006	-0.021	0.022	0.009	0.008	0.008
0.026	0.025	0.002	-0.008	0.008	0.008
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.018	0.018				

\$Germany

\$Germany\$type

[1] "raw"

\$Germany\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.006	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.007	0.000	0.000

\$Germany\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0		0	0

\$Germany\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.006	0.025	-0.027	-	
0.005	0.019	-0.021	-0.002	0.008
0.008	-0.001			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.003	-0.003			

\$China

\$China\$type

[1] "raw"

\$China\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.020	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.019	0.000	0.000

\$China\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$China\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.001	0.006	-0.012	0.029	
0.073	0.123	0.007	-0.030	0.052
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.001	-0.002			

\$Argentina

\$Argentina\$type

[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.002	-0.004	0.000	
FEEL_ANXIOUS_Y2	-0.002	0.003	0.000	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.005	0.017	-0.016	-	-
0.023	0.061	-0.053	-0.011	0.034
0.028	-0.011			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.032	-0.028			

\$Australia

\$Australia\$type

[1] "raw"

\$Australia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.000	-0.001	0.000	
FEEL_ANXIOUS_Y2	0.000	0.001	0.000	0.000

\$Australia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Australia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.007	0.028	-0.031	-	-
0.009	0.031	-0.034	-0.010	0.037
0.039	-0.011			

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
0.043	-0.046

```
$Brazil
$Brazil$type
[1] "raw"
```

```
$Brazil$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.006  0.010  0.000
FEEL_ANXIOUS_Y2  0.005 -0.009  0.000  0.000
```

```
$Brazil$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$Brazil$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.002              -0.005              0.005              0.005
0.013              0.010              -0.002              0.004              -
0.003              -0.009
      FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
              0.023              -0.017
```

```
$Egypt
$Egypt$type
[1] "raw"
```

```
$Egypt$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2  0.001 -0.002  0.000
FEEL_ANXIOUS_Y2 -0.001  0.002  0.000  0.000
```

```
$Egypt$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

\$Egypt\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.022	0.062	-0.049	-	
0.039		0.101	-0.082	-0.021	0.053
0.041		-0.042			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.090	-0.063			

\$India

\$India\$type

[1] "raw"

\$India\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.012	0.038	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.035	0.000	0.000

\$India\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$India\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.051	-0.133	0.121	0.030	
0.066		0.045	0.038	-0.098	0.078
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.141	0.131			

\$Indonesia

\$Indonesia\$type

[1] "raw"

\$Indonesia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.010	0.000	
FEEL_ANXIOUS_Y2	0.003	-0.008	0.000	0.000

\$Indonesia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Indonesia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.028	0.117	-0.101	-	-
0.046	0.145	-0.126	-0.018	0.069
0.060	-0.024			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.099	-0.088			

\$Israel

\$Israel\$type

[1] "raw"

\$Israel\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.015	-0.034	0.000	
FEEL_ANXIOUS_Y2	-0.007	0.016	0.000	0.000

\$Israel\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Israel\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.003	-0.014	0.017	0.011	
0.041	0.054	0.011	-0.043	0.061
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.039	0.055			

\$Japan

\$Japan\$type

[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			

INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.002	0.000	
FEEL_ANXIOUS_Y2	0.000	0.001	0.000	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.004	-0.014	0.015	0.017	
0.052	0.057	0.007	-0.028	0.031
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.012	0.013			

\$Kenya

\$Kenya\$type

[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.001	0.002	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.001	0.000	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.039	0.108	-0.085	-	
0.067	0.159	-0.117	-0.028	0.076
0.058	-0.014			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.041	-0.036			

\$Mexico

\$Mexico\$type

[1] "raw"

\$Mexico\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.012	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.011	0.000	0.000

\$Mexico\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Mexico\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.005	0.015	-0.014	-	
0.018		0.051	-0.045	-0.004	0.013
0.011		-0.001			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.003	-0.003			

\$Nigeria

\$Nigeria\$type

[1] "raw"

\$Nigeria\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.013	0.021	0.000	
FEEL_ANXIOUS_Y2	0.012	-0.022	0.000	0.000

\$Nigeria\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Nigeria\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.022	-0.054	0.048	-	
0.006		0.012	-0.008	0.000	0.001
0.001		0.028			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.080	0.075			

```
$Philippines
$Philippines$type
[1] "raw"
```

```
$Philippines$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2 -0.011 0.015 0.000
FEEL_ANXIOUS_Y2  0.008 -0.015 0.000 0.000
```

```
$Philippines$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Philippines$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0.039                -0.101                0.099                0.036                0.014
0.069                0.052                0.010                -0.021
          FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
                -0.126                0.122
```

```
$Poland
$Poland$type
[1] "raw"
```

```
$Poland$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2 0.005 -0.007 0.000
FEEL_ANXIOUS_Y2 -0.008 0.008 0.000 0.000
```

```
$Poland$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Poland$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                -0.002                0.010                -0.016                -
          FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
```

0.001	0.007	-0.012	-0.001	0.003
0.005	-0.005			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.030	-0.051			

```
$`South Africa`
$`South Africa`$type
[1] "raw"
```

```
$`South Africa`$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 0.002 -0.003 0.000
FEEL_ANXIOUS_Y2 -0.002 0.003 0.000 0.000
```

```
$`South Africa`$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$`South Africa`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2      INTEREST_Y2|t3
      -0.005              0.012              -0.009              -              -              -
0.019              0.044              -0.036              0.001              -
0.002              0.002              0.004
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      -0.011              0.010
```

```
$Spain
$Spain$type
[1] "raw"
```

```
$Spain$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 -0.003 0.005 0.000
FEEL_ANXIOUS_Y2 0.003 -0.005 0.000 0.000
```

```
$Spain$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
```

	0	0	0	0	
--	---	---	---	---	--

\$Spain\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.010	0.030	-0.027	-	-
0.009		0.022	-0.022	0.003	-
0.008		0.007	-0.022		
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.055	-0.047			

\$Tanzania

\$Tanzania\$type

[1] "raw"

\$Tanzania\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.005	0.011	0.000	
FEEL_ANXIOUS_Y2	0.004	-0.010	0.000	0.000

\$Tanzania\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Tanzania\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.086	-0.218	0.202	0.057	
0.136		0.103	0.073	-0.199	0.205
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.236	0.273			

\$Turkey

\$Turkey\$type

[1] "raw"

\$Turkey\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.003	-0.005	0.000	

FEEL_ANXIOUS_Y2 -0.001 0.002 0.000 0.000

\$Turkey\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Turkey\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.020	-0.052	0.041	0.021		
0.050	0.036	0.009	-0.026	0.021	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.036	0.028				

\$`United States`

\$`United States`\$type

[1] "raw"

\$`United States`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.002	0.003	0.000	
FEEL_ANXIOUS_Y2	0.002	-0.003	0.000	0.000

\$`United States`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United States`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.008	0.038	-0.045	-		
0.005	0.019	-0.024	-0.010	0.041	
0.045	-0.007				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.033	-0.039				

\$`Hong Kong`

\$`Hong Kong`\$type

[1] "raw"

\$`Hong Kong`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.001	0.004	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.004	0.000	0.000

\$`Hong Kong`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`Hong Kong`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.018	-0.054	0.100	0.029		
0.054	0.070	0.026	-0.086	0.164	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.014	0.021				

```
fit.res.thr0 <- lapply(residuals(fit.threshold), \(x) x$th)
fit.res.thr <- fit.res.thr0 |> bind_rows() |> as.data.frame()
rownames(fit.res.thr) <- paste0(names(fit.res.thr0), " (", 1:length(names(fit.res.thr0)), ")")
fit.res.thr |> select(contains("t3")) |> mutate(across(everything(), ~round(.,2)))
```

	DEPRESSED_Y2 t3	INTEREST_Y2 t3	CONTROL_WORRY_Y2 t3	FEEL_ANXIOUS_Y2 t3
Sweden (1)	-0.04	0.05	0.00	-
0.04				
United Kingdom (2)	0.02	0.03	0.01	0.02
Germany (3)	-0.03	-0.02	-0.01	0.00
China (4)	-0.01	0.12	0.05	0.00
Argentina (5)	-0.02	-0.05	-0.03	-
0.03				
Australia (6)	-0.03	-0.03	-0.04	-
0.05				
Brazil (7)	0.00	0.01	0.00	-
0.02				
Egypt (8)	-0.05	-0.08	-0.04	-
0.06				
India (9)	0.12	0.04	0.08	0.13
Indonesia (10)	-0.10	-0.13	-0.06	-
0.09				
Israel (11)	0.02	0.05	0.06	0.05
Japan (12)	0.01	0.06	0.03	0.01

Kenya (13)	-0.09	-0.12	-0.06	-
0.04				
Mexico (14)	-0.01	-0.05	-0.01	0.00
Nigeria (15)	0.05	-0.01	0.00	0.08
Philippines (16)	0.10	0.05	0.01	0.12
Poland (17)	-0.02	-0.01	-0.01	-
0.05				
South Africa (18)	-0.01	-0.04	0.00	0.01
Spain (19)	-0.03	-0.02	0.01	-
0.05				
Tanzania (20)	0.20	0.10	0.20	0.27
Turkey (21)	0.04	0.04	0.02	0.03
United States (22)	-0.05	-0.02	-0.04	-
0.04				
Hong Kong (23)	0.10	0.07	0.16	0.02

Lack of fit, likely due to non-invariance in some pair of thresholds. Next, relax the threshold invariance model to only constrain the first two thresholds to equality and freely estimate the third in a “partial” invariance model in countries where the threshold residual is “large (>0.10)” for each item.

- DEPRESSED: India (9), Indonesia (10), Philippines (16), Tanzania (20), and Hong Kong (23)
- INTEREST: China (4), Indonesia (10), Kenya (13), Tanzania (20)
- CONTROL_WORRY: Tanzania (20), and Hong Kong (23)
- FEEL_ANXIOUS: India (9), Philippines (16), Tanzania (20)

4.2.4 Threshold (Partial) Invariance Model

Identification constraints:

- LRV distribution for each observed item is identified based on fixed thresholds. Comparisons in the item location and scale not possible.
- LRV residual variance freely estimated (except for group 1, Sweden, for identification fixed to 1.0)
- LRV location freely estimated (except for group 1, Sweden, for identification fixed to 0.0)
- loadings freely estimated (comparable across countries)
- thresholds freely estimated but constrained to equal across countries except for the third threshold which is freely estimated in some countries
- factor means fixed to 0 in all countries (not comparable across countries)
- factor variances fixed to 1 in all countries (not comparable across countries)

```
mod.threshold.partial <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
  , group.equal = "thresholds"  
  , group.partial = c(  
    'DEPRESSED_Y2 | t3',  
    'INTEREST_Y2 | t3',  
    'CONTROL_WORRY_Y2 | t3',  
    'FEEL_ANXIOUS_Y2 | t3'  
  )  
)  
  
summary(mod.threshold.partial)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were iden

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

The following types of parameter were constrained to equality across groups:

thresholds, with the exception of:

	lhs	op	rhs
row-1:	DEPRESSED_Y2		t3
row-2:	INTEREST_Y2		t3
row-3:	CONTROL_WORRY_Y2		t3
row-4:	FEEL_ANXIOUS_Y2		t3

[illegible]

[illegible][illegible][illegible]

```
dep ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*dep + c(psi.1_1, psi.1_2, psi.1_3, psi.1_4, psi.1_5, psi.1_6, psi.1_7, psi.1_8, psi.1_9, psi.1_10, psi.1_11, psi.1_12, psi.1_13, psi.1_14, psi.1_15, psi.1_16, psi.1_17, psi.1_18, psi.1_19, psi.1_20)*psi.1
anx ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*anx + c(psi.2_1, psi.2_2, psi.2_3, psi.2_4, psi.2_5, psi.2_6, psi.2_7, psi.2_8, psi.2_9, psi.2_10, psi.2_11, psi.2_12, psi.2_13, psi.2_14, psi.2_15, psi.2_16, psi.2_17, psi.2_18, psi.2_19, psi.2_20)*psi.2
```

[illegible]

```
fit.threshold.partial
```

205

Estimator	DWLS	
Optimization method	NLMINB	
Number of model parameters	567	
Number of equality constraints	250	
Number of observations per group:	Used	Total
Sweden	11607	15068
United Kingdom	3619	5368
Germany	5528	9506
China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729
India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312
Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	

Mexico	8
Nigeria	9
Philippines	4
Poland	9
South Africa	4
Spain	7
Tanzania	10
Turkey	3
United States	14
Hong Kong	3

Model Test User Model:

	Standard	Scaled
Test Statistic	604.883	1551.415
Degrees of freedom	97	97
P-value (Unknown)	NA	0.000
Scaling correction factor		0.392
Shift parameter		8.655
simple second-order correction		
Test statistic for each group:		
Sweden	75.894	75.894
United Kingdom	32.310	32.310
Germany	14.562	14.562
China	43.769	43.769
Argentina	37.582	37.582
Australia	13.168	13.168
Brazil	15.281	15.281
Egypt	142.947	142.947
India	285.441	285.441
Indonesia	82.998	82.998
Israel	57.111	57.111
Japan	176.074	176.074
Kenya	192.798	192.798
Mexico	24.400	24.400
Nigeria	148.348	148.348
Philippines	39.133	39.133
Poland	10.179	10.179
South Africa	9.918	9.918
Spain	17.465	17.465
Tanzania	3.852	3.852
Turkey	14.780	14.780
United States	106.277	106.277
Hong Kong	7.129	7.129

```
#### Residuals
```

```
residuals(fit.threshold.partial)
```

```
$Sweden
```

```
$Sweden$type
```

```
[1] "raw"
```

```
$Sweden$cov
```

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.003	0.011	0.000	
FEEL_ANXIOUS_Y2	0.003	-0.011	0.000	0.000

```
$Sweden$mean
```

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

```
$Sweden$th
```

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.004	0.018	-0.018	0.015		
0.043	0.046	0.003	-0.012	0.014	
0.003					
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.015	-0.016				

```
$`United Kingdom`
```

```
$`United Kingdom`$type
```

```
[1] "raw"
```

```
$`United Kingdom`$cov
```

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0			
INTEREST_Y2	0	0		
CONTROL_WORRY_Y2	0	0	0	
FEEL_ANXIOUS_Y2	0	0	0	0

```
$`United Kingdom`$mean
```

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United Kingdom`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.012	-0.045	0.050	0.006	0.017
0.019	0.018	0.005	-0.017	0.017
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.036	0.038			

\$Germany

\$Germany\$type

[1] "raw"

\$Germany\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.006	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.007	0.000	0.000

\$Germany\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Germany\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.000	-0.002	0.002	-	-
0.007	0.026	-0.028	0.001	-
0.002	0.002	0.004		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.018	0.023			

\$China

\$China\$type

[1] "raw"

\$China\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.020	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.019	0.000	0.000

\$China\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$China\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.005	-0.024	0.051	0.000	
0.041	0.070	0.005		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.021	0.042			

\$Argentina

\$Argentina\$type

[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.002	-0.004	0.000	
FEEL_ANXIOUS_Y2	-0.002	0.003	0.000	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.002	-0.008	0.008	-	
0.026	0.069	-0.059	-0.008	0.024
0.020	-0.004			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.012	-0.011			

\$Australia

\$Australia\$type

[1] "raw"

\$Australia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			

INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.000	-0.001	0.000	
FEEL_ANXIOUS_Y2	0.000	0.001	0.000	0.000

\$Australia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Australia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.000	0.001	-0.001	-	-
0.011	0.039	-0.042	-0.007	0.027
0.028	-0.005			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.021	-0.024			

\$Brazil

\$Brazil\$type

[1] "raw"

\$Brazil\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.006	0.010	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.009	0.000	0.000

\$Brazil\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Brazil\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.009	-0.029	0.026	0.002	-
0.006	0.004	0.002	-0.005	0.004
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.000	0.000			

\$Egypt

\$Egypt\$type

[1] "raw"

\$Egypt\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.002	0.000	
FEEL_ANXIOUS_Y2	-0.001	0.002	0.000	0.000

\$Egypt\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Egypt\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.011	0.036	-0.030	-	-
0.043	0.109	-0.088	-0.016	0.042
0.033	-0.030			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.070	-0.051			

\$India

\$India\$type

[1] "raw"

\$India\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.012	0.038	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.035	0.000	0.000

\$India\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$India\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.000	0.000	0.000	0.028	-
0.060	0.040	0.039	-0.106	0.086
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.000	0.000			

```
$Indonesia
$Indonesia$type
[1] "raw"
```

```
$Indonesia$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.004  0.010  0.000
FEEL_ANXIOUS_Y2  0.003 -0.008  0.000  0.000
```

```
$Indonesia$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Indonesia$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                -0.020                0.089                -0.081                0.000                0.000
0.015                0.059                -0.053                -0.018
          FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
                0.079                -0.072
```

```
$Israel
$Israel$type
[1] "raw"
```

```
$Israel$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2  0.015 -0.034  0.000
FEEL_ANXIOUS_Y2 -0.007  0.016  0.000  0.000
```

```
$Israel$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Israel$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0.009                -0.038                0.051                0.010                0.010
0.034                0.044                0.013                -0.052                0.075
```

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
-0.055	0.079

\$Japan
\$Japan\$type
[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.002	0.000	
FEEL_ANXIOUS_Y2	0.000	0.001	0.000	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.010	-0.038	0.042	0.015	
0.045	0.049	0.009	-0.036	0.042
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.031	0.034			

\$Kenya
\$Kenya\$type
[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.001	0.002	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.001	0.000	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.026	0.077	-0.064	0.000	
0.024		0.066	-0.051	-0.007	
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.021	-0.019			

\$Mexico
\$Mexico\$type
[1] "raw"

\$Mexico\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	0.012	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.011	0.000	0.000

\$Mexico\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Mexico\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.003	-0.011	0.011	-	
0.021		0.059	-0.051	-0.001	0.003
0.003		0.004			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.016	0.017			

\$Nigeria
\$Nigeria\$type
[1] "raw"

\$Nigeria\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.013	0.021	0.000	
FEEL_ANXIOUS_Y2	0.012	-0.022	0.000	0.000

\$Nigeria\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Nigeria\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.029	-0.081	0.075	-	-
0.010	0.019	-0.014	0.004	-
0.009	0.008	0.032		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.097	0.095			

\$Philippines

\$Philippines\$type

[1] "raw"

\$Philippines\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.011	0.015	0.000	
FEEL_ANXIOUS_Y2	0.008	-0.015	0.000	0.000

\$Philippines\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Philippines\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.000	0.000	0.000	0.032	
0.062	0.045	0.014	-0.030	0.021
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.000	0.000			

\$Poland

\$Poland\$type

[1] "raw"

\$Poland\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		

```
CONTROL_WORRY_Y2  0.005 -0.007  0.000
FEEL_ANXIOUS_Y2  -0.008  0.008  0.000  0.000
```

\$Poland\$mean

```
DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
              0              0              0              0
```

\$Poland\$th

```
DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.002              -0.014              0.023              -              -
0.003              0.014              -0.025              0.001              -
0.006              0.010              -0.001
FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
              0.009              -0.015
```

\$`South Africa`

\$`South Africa`\$type

[1] "raw"

\$`South Africa`\$cov

```
DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000  0.000
CONTROL_WORRY_Y2  0.002 -0.003  0.000
FEEL_ANXIOUS_Y2  -0.002  0.003  0.000  0.000
```

\$`South Africa`\$mean

```
DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
              0              0              0              0
```

\$`South Africa`\$th

```
DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.006              -0.017              0.015              -              -
0.022              0.052              -0.042              0.005              -
0.012              0.010              0.010
FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
              -0.030              0.028
```

\$Spain

\$Spain\$type

[1] "raw"

\$Spain\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.003	0.005	0.000	
FEEL_ANXIOUS_Y2	0.003	-0.005	0.000	0.000

\$Spain\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Spain\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.001	0.002	-0.002	-	-
0.012	0.031	-0.030	0.006	-
0.018	0.017	-0.012		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.031	-0.028			

\$Tanzania

\$Tanzania\$type

[1] "raw"

\$Tanzania\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.005	0.011	0.000	
FEEL_ANXIOUS_Y2	0.004	-0.010	0.000	0.000

\$Tanzania\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Tanzania\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0	0	0	0	0
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0	0			

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
0.012	-0.015

```
$`Hong Kong`
$`Hong Kong`$type
[1] "raw"
```

```
$`Hong Kong`$cov
              DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2    0.000
INTEREST_Y2     0.000 0.000
CONTROL_WORRY_Y2 -0.001 0.004 0.000
FEEL_ANXIOUS_Y2  0.001 -0.004 0.000 0.000
```

```
$`Hong Kong`$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$`Hong Kong`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.000              0.000              0.000              0.024              0.000
0.044              0.057              0.000              0.000              0.000
      FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
              -0.039              0.059
```

```
fit.res.thr0 <- lapply(residuals(fit.threshold.partial), \(x) x$th)
fit.res.thr <- fit.res.thr0 |> bind_rows() |> as.data.frame()
rownames(fit.res.thr) <- paste0(names(fit.res.thr0), " (", 1:length(names(fit.res.thr0)), ")")
fit.res.thr |> select(contains("t3")) |> mutate(across(everything(), ~round(.,2)))
```

	DEPRESSED_Y2 t3	INTEREST_Y2 t3	CONTROL_WORRY_Y2 t3	FEEL_ANXIOUS_Y2 t3
Sweden (1)	-0.02	0.05	0.01	-
0.02				
United Kingdom (2)	0.05	0.02	0.02	0.04
Germany (3)	0.00	-0.03	0.00	0.02
China (4)	0.05	0.00	0.07	0.04
Argentina (5)	0.01	-0.06	-0.02	-
0.01				
Australia (6)	0.00	-0.04	-0.03	-
0.02				
Brazil (7)	0.03	0.00	0.00	0.00

Egypt (8)	-0.03	-0.09	-0.03	-
0.05				
India (9)	0.00	0.04	0.09	0.00
Indonesia (10)	-0.08	0.00	-0.05	-
0.07				
Israel (11)	0.05	0.04	0.07	0.08
Japan (12)	0.04	0.05	0.04	0.03
Kenya (13)	-0.06	0.00	-0.05	-
0.02				
Mexico (14)	0.01	-0.05	0.00	0.02
Nigeria (15)	0.07	-0.01	0.01	0.09
Philippines (16)	0.00	0.05	0.02	0.00
Poland (17)	0.02	-0.02	0.01	-
0.02				
South Africa (18)	0.01	-0.04	0.01	0.03
Spain (19)	0.00	-0.03	0.02	-
0.03				
Tanzania (20)	0.00	0.00	0.00	0.00
Turkey (21)	0.06	0.03	0.03	0.04
United States (22)	-0.01	-0.03	-0.03	-
0.01				
Hong Kong (23)	0.00	0.06	0.00	0.06

Model fit is much better, nearly back to the fit of the configural model (as expected).

4.2.5 Metric Invariance Model

```
mod.metric <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
  , group.equal = c("thresholds","loadings")  
  , group.partial = c(  
    'DEPRESSED_Y2 | t3',  
    'INTEREST_Y2 | t3',  
    'CONTROL_WORRY_Y2 | t3',  
    'FEEL_ANXIOUS_Y2 | t3'  
  )  
)  
  
summary(mod.metric)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were identified

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

The following types of parameter were constrained to equality across groups:

thresholds, with the exception of:

	lhs	op	rhs
row-1:	DEPRESSED_Y2		t3
row-2:	INTEREST_Y2		t3
row-3:	CONTROL_WORRY_Y2		t3
row-4:	FEEL_ANXIOUS_Y2		t3

loadings

```
#cat(as.character(mod.metric))
# copy the threshold partial invariance from previous model over
mod.metric <- "
## LOADINGS:

dep =~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
dep =~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
anx =~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
anx =~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,

## THRESHOLDS:

DEPRESSED_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
DEPRESSED_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
DEPRESSED_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
INTEREST_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
INTEREST_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
INTEREST_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
CONTROL_WORRY_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
CONTROL_WORRY_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
CONTROL_WORRY_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
FEEL_ANXIOUS_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
FEEL_ANXIOUS_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
FEEL_ANXIOUS_Y2 | c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,

## INTERCEPTS:

DEPRESSED_Y2 ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
INTEREST_Y2 ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
CONTROL_WORRY_Y2 ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,
FEEL_ANXIOUS_Y2 ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,

## UNIQUE-FACTOR VARIANCES:
```


Germany	5528	9506
China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729
India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312
Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	
Mexico	8	
Nigeria	9	
Philippines	4	
Poland	9	
South Africa	4	
Spain	7	
Tanzania	10	
Turkey	3	

United States	14
Hong Kong	3

Model Test User Model:

	Standard	Scaled
Test Statistic	1396.760	2962.036
Degrees of freedom	141	141
P-value (Unknown)	NA	0.000
Scaling correction factor		0.474
Shift parameter		13.208
simple second-order correction		
Test statistic for each group:		
Sweden	139.347	139.347
United Kingdom	61.284	61.284
Germany	139.151	139.151
China	64.101	64.101
Argentina	33.825	33.825
Australia	18.264	18.264
Brazil	19.868	19.868
Egypt	209.750	209.750
India	701.948	701.948
Indonesia	215.764	215.764
Israel	140.455	140.455
Japan	165.052	165.052
Kenya	320.276	320.276
Mexico	28.348	28.348
Nigeria	137.155	137.155
Philippines	133.523	133.523
Poland	99.999	99.999
South Africa	7.328	7.328
Spain	24.876	24.876
Tanzania	28.060	28.060
Turkey	16.406	16.406
United States	208.330	208.330
Hong Kong	48.925	48.925

```
#### Residuals
residuals(fit.metric)
```

```
$Sweden
$Sweden$type
[1] "raw"
```

\$\$Sweden\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.001	0.000		
CONTROL_WORRY_Y2	0.004	0.003	0.000	
FEEL_ANXIOUS_Y2	0.001	-0.024	0.000	0.000

\$\$Sweden\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$\$Sweden\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.016	0.009	-0.053	-	-
0.007	-0.037	0.084	0.022	-	-
0.022	-0.021	-0.021			
FEEL_ANXIOUS_Y2 t2	0.028	0.004			

\$`United Kingdom`

\$`United Kingdom`\$type

[1] "raw"

\$`United Kingdom`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.006	0.007	0.000	
FEEL_ANXIOUS_Y2	-0.003	0.009	0.000	0.000

\$`United Kingdom`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United Kingdom`\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.031	-0.020	0.104	0.044	
0.037	-0.029	-0.005	-0.011	0.028	
FEEL_ANXIOUS_Y2 t2	-0.037	0.024			

```
$Germany
$Germany$type
[1] "raw"
```

```
$Germany$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.012  0.030  0.000
FEEL_ANXIOUS_Y2  -0.013  0.008  0.000  0.000
```

```
$Germany$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Germany$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                -0.058                0.038                0.088                0.045                0.045
0.008                -0.112                0.017                -0.008                -
0.025                -0.012
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                -0.005                0.041
```

```
$China
$China$type
[1] "raw"
```

```
$China$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2  0.001  0.034  0.000
FEEL_ANXIOUS_Y2  -0.006 -0.021  0.000  0.000
```

```
$China$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$China$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                -0.004                -0.012                0.060                0.013                0.013
```

0.013	0.000	0.037	-0.063	0.007
0.021				

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
0.005	0.083

\$Argentina
\$Argentina\$type
[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.003	-0.011	0.000	
FEEL_ANXIOUS_Y2	0.003	0.000	0.000	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.016	-0.011	-0.014	-	-	-
0.037	0.068	-0.040	-0.017		0.029
0.012	0.003				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.013	-0.022				

\$Australia
\$Australia\$type
[1] "raw"

\$Australia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.005	0.007	0.000	
FEEL_ANXIOUS_Y2	-0.003	0.010	0.000	0.000

\$Australia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2

	0	0	0	0	
--	---	---	---	---	--

\$Australia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.021	0.018	0.027	0.008	
0.068	-0.011	0.031	-0.026	-
0.003				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.023	-0.032			

\$Brazil

\$Brazil\$type

[1] "raw"

\$Brazil\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.010	0.008	0.000	
FEEL_ANXIOUS_Y2	0.007	-0.005	0.000	0.000

\$Brazil\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Brazil\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.004	-0.024	0.028	0.008	
0.010	0.003	-0.015	0.000	0.018
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.019	0.000			

\$Egypt

\$Egypt\$type

[1] "raw"

\$Egypt\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.008	-0.055	0.000	

FEEL_ANXIOUS_Y2 0.036 -0.027 0.000 0.000

\$Egypt\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Egypt\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.039	0.023	-0.086	-	-
0.093	0.117	-0.024	-0.045	0.052
0.007	-0.002			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.069	-0.075			

\$India

\$India\$type

[1] "raw"

\$India\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.023	-0.037	0.000	
FEEL_ANXIOUS_Y2	0.052	-0.083	0.000	0.000

\$India\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$India\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.081	-0.082	0.000	-	-
0.040	-0.055	0.106	-0.021	-
0.089	0.145	0.072		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.074	0.000			

\$Indonesia

\$Indonesia\$type

[1] "raw"

\$Indonesia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.012	-0.027	0.000	
FEEL_ANXIOUS_Y2	0.019	-0.047	0.000	0.000

\$Indonesia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Indonesia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.047	0.054	-0.182	-	-
0.098	0.128	0.000	-0.015	0.061
0.055	-0.019			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.082	-0.074			

\$Israel

\$Israel\$type

[1] "raw"

\$Israel\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.008	-0.044	0.000	
FEEL_ANXIOUS_Y2	0.000	0.031	0.000	0.000

\$Israel\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Israel\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.012	-0.020	0.081	0.029	
0.050	0.015	-0.068	0.012	0.223
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.108	-0.045			

\$Japan
\$Japan\$type
[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.000	0.001	0.000	
FEEL_ANXIOUS_Y2	-0.001	0.003	0.000	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.007	-0.026	0.062	0.031		
0.055	0.032	0.015	-0.038	0.029	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.026	0.037				

\$Kenya
\$Kenya\$type
[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.002	-0.036	0.000	
FEEL_ANXIOUS_Y2	0.032	-0.013	0.000	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.005	0.072	-0.100	-		
0.046	0.045	0.000	-0.055	0.076	
0.022	0.019				

FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
0.015	-0.049

\$Mexico
\$Mexico\$type
[1] "raw"

\$Mexico\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.015	0.010	0.000	
FEEL_ANXIOUS_Y2	0.007	-0.004	0.000	0.000

\$Mexico\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Mexico\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.008	-0.003	0.020	-	
0.010	0.051	-0.060	-0.030	0.015
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.024	-0.016			

\$Nigeria
\$Nigeria\$type
[1] "raw"

\$Nigeria\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.030	0.003	0.000	
FEEL_ANXIOUS_Y2	0.032	-0.010	0.000	0.000

\$Nigeria\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Nigeria\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.032	-0.078	0.068	-	-
0.012		0.015	-0.007	-0.028	0.000
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.104	0.063			

```
$Philippines
$Philippines$type
[1] "raw"
```

```
$Philippines$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2 -0.018 -0.032 0.000
FEEL_ANXIOUS_Y2  0.049 -0.024 0.000 0.000
```

```
$Philippines$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.054	-0.055	0.000	-	-
0.005		-0.062	0.084	-0.039	
0.022		0.061	0.059		
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.061	0.000			

```
$Poland
$Poland$type
[1] "raw"
```

```
$Poland$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2  0.021 0.005 0.000
FEEL_ANXIOUS_Y2 -0.026 -0.011 0.000 0.000
```

```
$Poland$mean
```

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Poland\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.008	-0.019	0.001	-	-
0.007	0.015	-0.004	0.043	-
0.058	-0.109	-0.036		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.058	0.068			

\$`South Africa`
\$`South Africa`\$type
[1] "raw"

\$`South Africa`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.006	-0.004	0.000	
FEEL_ANXIOUS_Y2	0.003	0.011	0.000	0.000

\$`South Africa`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`South Africa`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.002	-0.012	0.014	-	-
0.017	0.047	-0.042	-0.004	-
0.008	0.015	0.016		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.029	0.017			

\$Spain
\$Spain\$type
[1] "raw"

\$Spain\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			

INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.004	0.008	0.000	
FEEL_ANXIOUS_Y2	-0.002	-0.012	0.000	0.000

\$Spain\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Spain\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.004	0.004	-0.012	-	-
0.015	0.028	-0.019	0.030	-
0.024	-0.015	-0.038		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.041	-0.008			

\$Tanzania

\$Tanzania\$type

[1] "raw"

\$Tanzania\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.007	0.001	0.000	
FEEL_ANXIOUS_Y2	0.011	-0.014	0.000	0.000

\$Tanzania\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Tanzania\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.014	-0.014	0.000	-	-
0.018	0.018	0.000	-0.024	0.026
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.021	0.000			

\$Turkey

\$Turkey\$type

[1] "raw"

\$Turkey\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.009	-0.002	0.000	
FEEL_ANXIOUS_Y2	-0.002	0.016	0.000	0.000

\$Turkey\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Turkey\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.008	-0.063	0.090	0.052	
0.053	0.003	-0.016	-0.024	0.058
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.055	0.020			

\$`United States`

\$`United States`\$type

[1] "raw"

\$`United States`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.013	0.000	
FEEL_ANXIOUS_Y2	-0.005	0.003	0.000	0.000

\$`United States`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United States`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.024	0.033	0.022	0.013	
0.065	-0.001	0.028	-0.049	-
0.009				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.020	-0.009			

```
$`Hong Kong`
$`Hong Kong`$type
[1] "raw"
```

```
$`Hong Kong`$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2      0.000 0.000
CONTROL_WORRY_Y2 0.015 -0.035 0.000
FEEL_ANXIOUS_Y2 0.002 -0.050 0.000 0.000
```

```
$`Hong Kong`$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$`Hong Kong`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.089              -0.102              0.000              -              -
0.062              -0.027              0.167              0.048              -
0.061              0.000              -0.025
      FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
              -0.016              0.100
```

```
## identify which pairs of correlations (items within the same factor) have largest residuals
## same factor item rescor
fit.res.cor0 <- lapply(residuals(fit.metric), \(x) data.frame(DEPRESS = x$cov[2,1], ANX=x$cov[3,1]))
fit.res.cor <- fit.res.cor0 |> bind_rows() |> as.data.frame()
rownames(fit.res.cor) <- paste0(names(fit.res.cor0), " (", 1:length(names(fit.res.cor0)), ")")
fit.res.cor #|> mutate(across(everything(), ~round(.,2)))
```

	DEPRESS	ANX
Sweden (1)	-6.325246e-04	8.021178e-05
United Kingdom (2)	3.426883e-06	-6.566824e-07
Germany (3)	4.381306e-06	-1.802459e-05
China (4)	8.030347e-06	1.236484e-06
Argentina (5)	-7.114621e-06	2.009582e-06
Australia (6)	2.308530e-06	2.287873e-06
Brazil (7)	1.303293e-06	-8.252728e-07
Egypt (8)	2.686466e-05	-1.262557e-05
India (9)	5.052292e-05	-8.423313e-06
Indonesia (10)	2.987899e-05	7.159464e-07

Israel (11)	-2.267338e-05	6.316134e-06
Japan (12)	-8.875708e-08	-4.057255e-07
Kenya (13)	2.418550e-06	3.804180e-06
Mexico (14)	1.680052e-05	8.150453e-07
Nigeria (15)	4.453965e-05	-4.476163e-05
Philippines (16)	3.134651e-05	1.090393e-05
Poland (17)	8.209925e-06	-2.492574e-07
South Africa (18)	7.976064e-05	-2.771396e-05
Spain (19)	2.607833e-05	7.538354e-06
Tanzania (20)	8.379747e-05	-1.842326e-04
Turkey (21)	1.768660e-04	-2.165513e-05
United States (22)	1.853053e-07	1.899777e-08
Hong Kong (23)	8.101316e-05	3.188586e-05

4.2.6 Scalar Invariance Model

```
mod.scalar <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
  , group.equal = c("thresholds","loadings", "intercepts")  
  , group.partial = c(  
    'DEPRESSED_Y2 | t3',  
    'INTEREST_Y2 | t3',  
    'CONTROL_WORRY_Y2 | t3',  
    'FEEL_ANXIOUS_Y2 | t3'  
  )  
)  
  
summary(mod.scalar)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were iden

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

The following types of parameter were constrained to equality across groups:

thresholds, with the exception of:

loadings
intercepts

```
mod.scalar <- "  
## LOADINGS:
```

THRESHOLDS:

```
## INTERCEPTS:
```

```
## UNIQUE-FACTOR VARIANCES:
```


China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729
India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312
Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	
Mexico	8	
Nigeria	9	
Philippines	4	
Poland	9	
South Africa	4	
Spain	7	
Tanzania	10	
Turkey	3	
United States	14	

Hong Kong

3

Model Test User Model:

	Standard	Scaled
Test Statistic	4483.002	8014.899
Degrees of freedom	185	185
P-value (Unknown)	NA	0.000
Scaling correction factor		0.561
Shift parameter		21.058
simple second-order correction		
Test statistic for each group:		
Sweden	291.331	291.331
United Kingdom	74.725	74.725
Germany	458.888	458.888
China	238.878	238.878
Argentina	87.995	87.995
Australia	50.182	50.182
Brazil	216.765	216.765
Egypt	418.630	418.630
India	898.124	898.124
Indonesia	226.898	226.898
Israel	229.842	229.842
Japan	1317.661	1317.661
Kenya	656.355	656.355
Mexico	87.668	87.668
Nigeria	632.157	632.157
Philippines	986.352	986.352
Poland	143.201	143.201
South Africa	168.708	168.708
Spain	84.512	84.512
Tanzania	51.928	51.928
Turkey	107.398	107.398
United States	499.138	499.138
Hong Kong	87.564	87.564

```
#### Residuals
```

```
residuals(fit.scalar)
```

```
$Sweden
```

```
$Sweden$type
```

```
[1] "raw"
```

\$Sweden\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.021	0.000	
FEEL_ANXIOUS_Y2	0.013	-0.037	0.000	0.000

\$Sweden\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Sweden\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.018	-0.026	-0.072	0.037	
0.007	-0.055			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.006	-0.017			

\$`United Kingdom`

\$`United Kingdom`\$type

[1] "raw"

\$`United Kingdom`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	0.008	0.000	
FEEL_ANXIOUS_Y2	-0.006	0.001	0.000	0.000

\$`United Kingdom`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United Kingdom`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.037	-0.040	0.092	0.053	
0.022	-0.011	-0.045	-0.041	0.002
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.006	0.067			

\$Germany

\$Germany\$type
[1] "raw"

\$Germany\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.023	0.014	0.000	
FEEL_ANXIOUS_Y2	-0.008	-0.035	0.000	0.000

\$Germany\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Germany\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.158	-0.036	0.044	0.140		
0.038	-0.064	-0.058	-0.057	0.052	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.052	0.109				

\$China

\$China\$type
[1] "raw"

\$China\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.002	0.042	0.000	
FEEL_ANXIOUS_Y2	-0.009	-0.012	0.000	0.000

\$China\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$China\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.096	0.040	0.110	-		
0.113	-0.116	0.000	0.043	-	
0.061	0.004	-0.025			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				

-0.003 0.093

\$Argentina
\$Argentina\$type
[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.000	0.003	0.000	
FEEL_ANXIOUS_Y2	-0.006	0.009	0.000	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.084	0.026	0.022	-		
0.114	0.016	-0.077	-0.033		0.017
0.024	0.017				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.022	-0.003				

\$Australia
\$Australia\$type
[1] "raw"

\$Australia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.011	-0.007	0.000	
FEEL_ANXIOUS_Y2	0.000	-0.013	0.000	0.000

\$Australia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Australia\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.069	-0.026	0.003	0.059	0.021
0.028		-0.039	0.013	-0.041	
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.040	-0.004			

\$Brazil
\$Brazil\$type
[1] "raw"

\$Brazil\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.018	0.022	0.000	
FEEL_ANXIOUS_Y2	-0.001	0.010	0.000	0.000

\$Brazil\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Brazil\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.099	0.043	0.095	-	-
0.105		-0.097	-0.066	-0.034	
0.010		0.011	0.032		
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.004	0.000			

\$Egypt
\$Egypt\$type
[1] "raw"

\$Egypt\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.005	-0.075	0.000	
FEEL_ANXIOUS_Y2	0.054	-0.028	0.000	0.000

\$Egypt\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Egypt\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.010	-0.008	-0.102	-	-
0.055	0.151	0.003	0.081	0.153
0.128				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.046	-0.172			

\$India

\$India\$type

[1] "raw"

\$India\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.019	-0.032	0.000	
FEEL_ANXIOUS_Y2	0.046	-0.083	0.000	0.000

\$India\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$India\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.145	0.011	0.000	-	-
0.166	-0.136	0.056	-0.060	-
0.107	0.138	0.096		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.036	0.000			

\$Indonesia

\$Indonesia\$type

[1] "raw"

\$Indonesia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			

INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.001	-0.025	0.000	
FEEL_ANXIOUS_Y2	0.021	-0.033	0.000	0.000

\$Indonesia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Indonesia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.105	0.073	-0.167	-	-
0.160	0.080	0.000	0.018	0.080
0.048	-0.044			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.058	-0.086			

\$Israel

\$Israel\$type

[1] "raw"

\$Israel\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.026	-0.041	0.000	
FEEL_ANXIOUS_Y2	-0.003	-0.001	0.000	0.000

\$Israel\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Israel\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.076	-0.077	0.045	0.095	
0.162	-0.044	0.188	0.139	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.042	0.035			

\$Japan

\$Japan\$type

[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.014	-0.012	0.000	
FEEL_ANXIOUS_Y2	0.007	0.010	0.000	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.001	-0.037	0.057	0.027	
0.050	0.041	0.172	0.091	0.139
0.114				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.151	-0.079			

\$Kenya

\$Kenya\$type

[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.024	-0.018	0.000	
FEEL_ANXIOUS_Y2	0.014	-0.035	0.000	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.010	0.053	-0.104	-	
0.033	0.074	0.000	-0.184	0.000
0.066	0.111			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.090	0.029			

```
$Mexico
$Mexico$type
[1] "raw"
```

```
$Mexico$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.001  0.022  0.000
FEEL_ANXIOUS_Y2  -0.003 -0.011  0.000  0.000
```

```
$Mexico$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Mexico$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0.015                0.001                0.030                -                -
0.033                0.039                -0.067                -0.116                -
0.046                -0.019                0.089
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                0.039                0.061
```

```
$Nigeria
$Nigeria$type
[1] "raw"
```

```
$Nigeria$cov
          DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000  0.000
CONTROL_WORRY_Y2 -0.013  0.037  0.000
FEEL_ANXIOUS_Y2  -0.001 -0.015  0.000  0.000
```

```
$Nigeria$mean
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2
                0                0                0                0
```

```
$Nigeria$th
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
                0.015                0.001                0.030                -                -
0.033                0.039                -0.067                -0.116                -
0.046                -0.019                0.089
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3
                0.039                0.061
```

	0.154	0.016	0.163	-	
0.191	-0.118	-0.109	-0.180		-
0.090	-0.017	0.169			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
	-0.010	0.160			

```
$Philippines
$Philippines$type
[1] "raw"
```

```
$Philippines$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2 -0.024 -0.045 0.000
FEEL_ANXIOUS_Y2  0.062 -0.021 0.000 0.000
```

```
$Philippines$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$Philippines$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.179              0.130              0.000              -
0.202              -0.188              0.007              -0.292              -
0.155              0.003              0.202
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
              0.248              0.000
```

```
$Poland
$Poland$type
[1] "raw"
```

```
$Poland$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2  0.008 0.014 0.000
FEEL_ANXIOUS_Y2 -0.032 0.004 0.000 0.000
```

```
$Poland$mean
```

	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
	0	0	0	0

\$Poland\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.062	-0.008	0.007	-	-
0.055	-0.009	-0.014	0.062	-	-
0.051	-0.112	-0.051			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.043	0.068			

\$`South Africa`

\$`South Africa`\$type

[1] "raw"

\$`South Africa`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.001	0.000		
CONTROL_WORRY_Y2	0.037	0.012	0.000	
FEEL_ANXIOUS_Y2	-0.023	-0.030	0.000	0.000

\$`South Africa`\$mean

	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
	0	0	0	0

\$`South Africa`\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.054	-0.060	-0.012	0.046	
0.233	-0.143	-0.061	0.178		
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.110	0.157			

\$Spain

\$Spain\$type

[1] "raw"

\$Spain\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		

CONTROL_WORRY_Y2	-0.001	0.001	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.008	0.000	0.000

\$Spain\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Spain\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.016	-0.002	-0.011	-	-
0.026	0.027	-0.015	0.102	0.033
0.104				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.024	-0.058			

\$Tanzania

\$Tanzania\$type

[1] "raw"

\$Tanzania\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.004	0.005	0.000	
FEEL_ANXIOUS_Y2	0.007	-0.015	0.000	0.000

\$Tanzania\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Tanzania\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.009	-0.037	0.000	0.010	
0.038	0.018	0.000	0.028	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.009	0.000			

\$Turkey

\$Turkey\$type

[1] "raw"

\$Turkey\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	-0.040	-0.026	0.000	
FEEL_ANXIOUS_Y2	0.014	0.028	0.000	0.000

\$Turkey\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Turkey\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.002	-0.070	0.087	0.048		
0.050	0.009	0.193	0.151	0.208	
0.131					
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.222	-0.132				

\$`United States`

\$`United States`\$type

[1] "raw"

\$`United States`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.000	0.000		
CONTROL_WORRY_Y2	0.010	-0.003	0.000	
FEEL_ANXIOUS_Y2	0.003	-0.018	0.000	0.000

\$`United States`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United States`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.073	-0.008	0.001	0.062		
0.027	-0.012	0.020	-0.057	0.000	
0.024	0.008				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				

```
$`Hong Kong`
$`Hong Kong`$type
[1] "raw"
```

```
$`Hong Kong`$cov
      DEPRES INTERE CONTRO FEEL_A
DEPRESSED_Y2      0.000
INTEREST_Y2       0.000 0.000
CONTROL_WORRY_Y2  0.014 -0.032 0.000
FEEL_ANXIOUS_Y2   0.002 -0.047 0.000 0.000
```

```
$`Hong Kong`$mean
      DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2 FEEL_ANXIOUS_Y2
              0              0              0              0
```

```
$`Hong Kong`$th
      DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2
              0.181              0.007              0.000              -              -
0.228      -0.130              0.104              0.057              -
0.055      0.000      -0.033
FEEL_ANXIOUS_Y2|t2 FEEL_ANXIOUS_Y2|t3
      -0.028              0.104
```

```
## identify which pairs of correlations (items within the same factor) have largest residuals
## same factor item rescor
fit.res.cor0 <- lapply(residuals(fit.scalar), \(x) data.frame(DEPRESS = x$cov[2,1], ANX=x$cov[3,1]))
fit.res.cor <- fit.res.cor0 |> bind_rows() |> as.data.frame()
rownames(fit.res.cor) <- paste0(names(fit.res.cor0), " (", 1:length(names(fit.res.cor0)), ")")
fit.res.cor #|> mutate(across(everything(), ~round(.,2)))
```

	DEPRESS	ANX
Sweden (1)	-1.325120e-04	1.861820e-06
United Kingdom (2)	7.328099e-07	1.363651e-06
Germany (3)	1.685685e-06	6.337867e-06
China (4)	8.312900e-07	1.069608e-06
Argentina (5)	2.674380e-05	-3.466722e-05
Australia (6)	-2.493032e-06	2.763891e-06
Brazil (7)	5.374889e-06	-7.270129e-06
Egypt (8)	7.308517e-05	-5.823201e-06
India (9)	-3.901486e-05	-1.420966e-05
Indonesia (10)	4.045523e-05	2.804949e-05
Israel (11)	1.706749e-06	-2.449710e-06

Japan (12)	-4.470905e-08	-7.228998e-08
Kenya (13)	4.942008e-06	-6.068164e-06
Mexico (14)	1.961333e-06	8.076772e-06
Nigeria (15)	9.879651e-06	-4.612385e-05
Philippines (16)	-1.188783e-04	3.704020e-05
Poland (17)	4.434515e-07	2.483007e-06
South Africa (18)	7.008936e-04	-5.468614e-05
Spain (19)	-3.695377e-06	2.912375e-05
Tanzania (20)	-1.180213e-04	2.067985e-05
Turkey (21)	2.929232e-04	-1.183088e-04
United States (22)	6.638926e-08	1.781706e-07
Hong Kong (23)	-5.466957e-05	3.457035e-05

4.2.7 Strict Invariance Model

```
mod.strict <- semTools::measEq.syntax(  
  configural.model = mod  
  , data = df.cc  
  , group = "COUNTRY"  
  , parameterization = "theta"  
  , ID.fac = "std.lv"  
  , ID.cat = "Wu.Estabrook.2016"  
  , ordered = TRUE  
  , group.equal = c("thresholds", "loadings", "intercepts", "residuals")  
  , group.partial = c(  
    'DEPRESSED_Y2 | t3',  
    'INTEREST_Y2 | t3',  
    'CONTROL_WORRY_Y2 | t3',  
    'FEEL_ANXIOUS_Y2 | t3'  
  )  
)  
  
summary(mod.strict)
```

This lavaan model syntax specifies a CFA with 4 manifest indicators (4 of which are ordinal)

To identify the location and scale of each common factor, the factor means and variances were

The location and scale of each latent item-response underlying 4 ordinal indicators were iden

<https://doi.org/10.1007/s11336-016-9506-0>

Pattern matrix indicating num(eric), ord(ered), and lat(ent) indicators per factor:

	dep	anx
DEPRESSED_Y2	ord	
INTEREST_Y2	ord	
CONTROL_WORRY_Y2		ord
FEEL_ANXIOUS_Y2		ord

The following types of parameter were constrained to equality across groups:

thresholds, with the exception of:

```
loadings
intercepts
residuals
```

261

```

DEPRESSED_Y2 ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*DEPRE
INTEREST_Y2 ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*INTERE
CONTROL_WORRY_Y2 ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*C
FEEL_ANXIOUS_Y2 ~~ c(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)*FEEL

## LATENT MEANS/INTERCEPTS:

dep ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)
anx ~ c(0, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)

## COMMON-FACTOR VARIANCES:

dep ~~ c(1, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)
anx ~~ c(1, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)

## COMMON-FACTOR COVARIANCES:

dep ~~ c(NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA)
"

fit.strict <- cfa(
  model = as.character(mod.strict)
  , data = df.cc
  , group = "COUNTRY"
  , ordered = TRUE
  , parameterization = "theta"
  , missing = "pairwise"
)

fit.strict

```

lavaan 0.6-21 ended normally after 602 iterations

Estimator	DWLS	
Optimization method	NLMINB	
Number of model parameters	479	
Number of equality constraints	338	
Number of observations per group:	Used	Total
Sweden	11607	15068

United Kingdom	3619	5368
Germany	5528	9506
China	4544	5022
Argentina	2928	6724
Australia	2581	3844
Brazil	4274	13203
Egypt	3040	4729
India	6372	12765
Indonesia	2681	6992
Israel	2489	3669
Japan	13968	20543
Kenya	7698	11389
Mexico	2278	5776
Nigeria	3146	6827
Philippines	2682	5292
Poland	6478	10389
South Africa	978	2651
Spain	2923	6290
Tanzania	5583	9075
Turkey	499	1473
United States	32239	38312
Hong Kong	707	3012
Number of missing patterns per group:		
Sweden	13	
United Kingdom	6	
Germany	8	
China	4	
Argentina	10	
Australia	7	
Brazil	8	
Egypt	5	
India	13	
Indonesia	6	
Israel	9	
Japan	9	
Kenya	6	
Mexico	8	
Nigeria	9	
Philippines	4	
Poland	9	
South Africa	4	
Spain	7	
Tanzania	10	

Turkey	3
United States	14
Hong Kong	3

Model Test User Model:

	Standard	Scaled
Test Statistic	17240.131	29765.275
Degrees of freedom	273	273
P-value (Unknown)	NA	0.000
Scaling correction factor		0.580
Shift parameter		31.059
simple second-order correction		
Test statistic for each group:		
Sweden	1552.858	1552.858
United Kingdom	242.631	242.631
Germany	823.895	823.895
China	641.161	641.161
Argentina	156.895	156.895
Australia	213.786	213.786
Brazil	462.248	462.248
Egypt	991.282	991.282
India	5538.998	5538.998
Indonesia	329.990	329.990
Israel	411.968	411.968
Japan	2248.470	2248.470
Kenya	2588.792	2588.792
Mexico	231.129	231.129
Nigeria	1780.996	1780.996
Philippines	2254.471	2254.471
Poland	408.791	408.791
South Africa	537.071	537.071
Spain	178.427	178.427
Tanzania	4827.496	4827.496
Turkey	187.715	187.715
United States	2919.554	2919.554
Hong Kong	236.650	236.650

```
#### Residuals
residuals(fit.strict)
```

```
$Sweden
$Sweden$type
```

[1] "raw"

\$\$Sweden\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.053	0.000		
CONTROL_WORRY_Y2	0.033	-0.066	0.000	
FEEL_ANXIOUS_Y2	0.014	-0.104	0.033	0.000

\$\$Sweden\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$\$Sweden\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.041	-0.019	-0.103	0.109	
0.080	-0.064	0.020	0.077	0.155
0.140				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.005	0.039			

\$`United Kingdom`

\$`United Kingdom`\$type

[1] "raw"

\$`United Kingdom`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.032	0.000		
CONTROL_WORRY_Y2	0.007	0.013	0.000	
FEEL_ANXIOUS_Y2	-0.013	-0.005	0.019	0.000

\$`United Kingdom`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`United Kingdom`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.104	-0.009	0.169	-	
0.011	0.008	0.096	-0.073	-
0.011	0.085	0.002		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			

-0.004 0.089

\$Germany
\$Germany\$type
[1] "raw"

\$Germany\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.026	0.000		
CONTROL_WORRY_Y2	-0.015	0.033	0.000	
FEEL_ANXIOUS_Y2	-0.015	0.012	-0.068	0.000

\$Germany\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Germany\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.217	-0.038	0.067	0.096		
0.024	-0.095	-0.123	0.099		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.042	0.063				

\$China
\$China\$type
[1] "raw"

\$China\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.048	0.000		
CONTROL_WORRY_Y2	-0.006	0.022	0.000	
FEEL_ANXIOUS_Y2	0.005	-0.020	0.077	0.000

\$China\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$China\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3

	0.057	0.086	0.192	-	
0.121	-0.103	0.000	-0.021		0.022
0.145					
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
	0.078	0.271			

\$Argentina
\$Argentina\$type
[1] "raw"

\$Argentina\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.021	0.000		
CONTROL_WORRY_Y2	-0.010	-0.011	0.000	
FEEL_ANXIOUS_Y2	0.007	0.014	-0.047	0.000

\$Argentina\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Argentina\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.054	0.037	0.048	-	-
0.131	0.024	-0.040	0.009	-
0.005	-0.070	0.060		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.012	-0.048		

\$Australia
\$Australia\$type
[1] "raw"

\$Australia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.047	0.000		
CONTROL_WORRY_Y2	0.011	-0.003	0.000	
FEEL_ANXIOUS_Y2	-0.003	-0.013	0.031	0.000

\$Australia\$mean

	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2	
	0	0	0	0	

\$Australia\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	-0.142	0.019	0.106	-	
0.011		0.117	0.115	-0.068	0.048
0.033					
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.052	0.035			

\$Brazil

\$Brazil\$type

[1] "raw"

\$Brazil\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.033	0.000		
CONTROL_WORRY_Y2	-0.023	-0.006	0.000	
FEEL_ANXIOUS_Y2	0.021	0.003	-0.063	0.000

\$Brazil\$mean

	DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
	0	0	0	0

\$Brazil\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.131	0.039	0.064	-	
0.047		-0.113	-0.125	0.034	-
0.045		-0.072	0.103		
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.026	0.000			

\$Egypt

\$Egypt\$type

[1] "raw"

\$Egypt\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			

INTEREST_Y2	-0.186	0.000		
CONTROL_WORRY_Y2	0.025	-0.051	0.000	
FEEL_ANXIOUS_Y2	0.025	-0.044	-0.098	0.000

\$Egypt\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Egypt\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.086	-0.040	-0.203	0.031	
0.063	0.123	0.163	0.086	-
0.020				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.071	-0.274			

\$India

\$India\$type

[1] "raw"

\$India\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.398	0.000		
CONTROL_WORRY_Y2	0.017	-0.122	0.000	
FEEL_ANXIOUS_Y2	0.097	-0.163	-0.280	0.000

\$India\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$India\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.254	0.010	0.000	0.083	
0.193	-0.210	0.027	-0.165	0.004
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.084	0.000			

\$Indonesia

\$Indonesia\$type

[1] "raw"

\$Indonesia\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.079	0.000		
CONTROL_WORRY_Y2	-0.006	-0.024	0.000	
FEEL_ANXIOUS_Y2	0.023	-0.025	-0.048	0.000

\$Indonesia\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Indonesia\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.133	0.038	-0.247	-	-
0.116	0.070	0.000	0.049	0.056
0.088	-0.002			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.038	-0.145			

\$Israel

\$Israel\$type

[1] "raw"

\$Israel\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.015	0.000		
CONTROL_WORRY_Y2	-0.054	-0.091	0.000	
FEEL_ANXIOUS_Y2	0.030	0.048	-0.008	0.000

\$Israel\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Israel\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.109	-0.072	0.063	0.075	
0.174	-0.127	0.079	0.178	
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.044	0.139			

\$Japan
\$Japan\$type
[1] "raw"

\$Japan\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.039	0.000		
CONTROL_WORRY_Y2	-0.019	-0.031	0.000	
FEEL_ANXIOUS_Y2	0.015	0.002	0.027	0.000

\$Japan\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0		0	0

\$Japan\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.068	0.004	0.150	-		
0.037	-0.027	0.137	0.135		0.117
0.174					
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
-0.128	-0.019				

\$Kenya
\$Kenya\$type
[1] "raw"

\$Kenya\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.154	0.000		
CONTROL_WORRY_Y2	-0.031	-0.004	0.000	
FEEL_ANXIOUS_Y2	0.013	0.027	-0.207	0.000

\$Kenya\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Kenya\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
0.070	0.013	-0.219	-		

0.015	0.116	0.000	-0.080	-
0.050	-0.194	0.207		
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.091	-0.026			

\$Mexico
\$Mexico\$type
[1] "raw"

\$Mexico\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.008	0.000		
CONTROL_WORRY_Y2	-0.049	-0.010	0.000	
FEEL_ANXIOUS_Y2	0.028	0.023	-0.060	0.000

\$Mexico\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Mexico\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2	INTEREST_Y2 t3
-0.003	-0.001	0.028	-	-	-
0.040	0.052	-0.029	-0.059		
0.100	-0.124	0.149			
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3				
0.055	0.048				

\$Nigeria
\$Nigeria\$type
[1] "raw"

\$Nigeria\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.217	0.000		
CONTROL_WORRY_Y2	-0.018	0.006	0.000	
FEEL_ANXIOUS_Y2	0.025	-0.022	-0.264	0.000

\$Nigeria\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
--------------	-------------	------------------	-----------------

	0	0	0	0	
--	---	---	---	---	--

\$Nigeria\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.252	0.002	0.078	-	-
0.042	-0.137	-0.238	-0.073	-	-
0.131	-0.132	0.284			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	-0.028	0.066			

\$Philippines

\$Philippines\$type

[1] "raw"

\$Philippines\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.274	0.000		
CONTROL_WORRY_Y2	-0.016	-0.015	0.000	
FEEL_ANXIOUS_Y2	0.034	-0.022	-0.277	0.000

\$Philippines\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Philippines\$th

	DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
	0.311	0.042	0.000	-	-
0.077	-0.236	-0.154	-0.229	-	-
0.204	-0.103	0.329			
	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
	0.185	0.000			

\$Poland

\$Poland\$type

[1] "raw"

\$Poland\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.034	0.000		

CONTROL_WORRY_Y2	0.015	0.058	0.000	
FEEL_ANXIOUS_Y2	-0.078	0.001	0.029	0.000

\$Poland\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Poland\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.000	0.005	0.052	-	
0.088	0.087	0.187	0.072	0.037
0.086				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.002	0.011			

\$`South Africa`

\$`South Africa`\$type

[1] "raw"

\$`South Africa`\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.190	0.000		
CONTROL_WORRY_Y2	0.007	0.012	0.000	
FEEL_ANXIOUS_Y2	-0.016	0.002	-0.314	0.000

\$`South Africa`\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$`South Africa`\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.049	-0.099	-0.139	0.126	
0.037	-0.115	-0.182	-0.181	0.296
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
0.100	0.074			

\$Spain

\$Spain\$type

[1] "raw"

\$Spain\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	0.002	0.000		
CONTROL_WORRY_Y2	-0.014	0.034	0.000	
FEEL_ANXIOUS_Y2	-0.015	0.019	-0.030	0.000

\$Spain\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Spain\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
-0.003	-0.017	-0.031	-	-
0.059	0.062	0.082	0.131	0.031
0.068				
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.044	-0.114			

\$Tanzania

\$Tanzania\$type

[1] "raw"

\$Tanzania\$cov

	DEPRES	INTERE	CONTRO	FEEL_A
DEPRESSED_Y2	0.000			
INTEREST_Y2	-0.427	0.000		
CONTROL_WORRY_Y2	0.020	-0.090	0.000	
FEEL_ANXIOUS_Y2	0.072	-0.083	-0.292	0.000

\$Tanzania\$mean

DEPRESSED_Y2	INTEREST_Y2	CONTROL_WORRY_Y2	FEEL_ANXIOUS_Y2
0	0	0	0

\$Tanzania\$th

DEPRESSED_Y2 t1	DEPRESSED_Y2 t2	DEPRESSED_Y2 t3	INTEREST_Y2 t1	INTEREST_Y2 t2
0.122	-0.227	0.000	0.263	-
0.139	0.000	0.034	-0.112	0.000
FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3			
-0.099	0.000			

0.048

	FEEL_ANXIOUS_Y2 t2	FEEL_ANXIOUS_Y2 t3
	0.032	0.037

```
$`Hong Kong`  
$`Hong Kong`$type  
[1] "raw"
```

```
$`Hong Kong`$cov  
          DEPRES INTERE CONTRO FEEL_A  
DEPRESSED_Y2      0.000  
INTEREST_Y2       0.065  0.000  
CONTROL_WORRY_Y2  0.027 -0.044  0.000  
FEEL_ANXIOUS_Y2 -0.003 -0.071  0.071  0.000
```

```
$`Hong Kong`$mean  
          DEPRESSED_Y2      INTEREST_Y2 CONTROL_WORRY_Y2  FEEL_ANXIOUS_Y2  
                0                0                0                0
```

```
$`Hong Kong`$th  
          DEPRESSED_Y2|t1      DEPRESSED_Y2|t2      DEPRESSED_Y2|t3      INTEREST_Y2|t1      INTEREST_Y2|t2  
                0.113                0.061                0.000                -                0.113  
0.250                -0.107                0.177                -0.077  
0.246  
          FEEL_ANXIOUS_Y2|t2  FEEL_ANXIOUS_Y2|t3  
                0.085                0.380
```

```
## identify which pairs of correlations (items within the same factor) have largest residuals  
## same factor item rescor  
fit.res.cor0 <- lapply(residuals(fit.strict), \(x) data.frame(DEPRESS = x$cov[2,1], ANX=x$cov[3,1]))  
fit.res.cor <- fit.res.cor0 |> bind_rows() |> as.data.frame()  
rownames(fit.res.cor) <- paste0(names(fit.res.cor0), " (", 1:length(names(fit.res.cor0)), ")")  
fit.res.cor #|> mutate(across(everything(), ~round(.,2)))
```

	DEPRESS	ANX
Sweden (1)	-0.053035145	0.033074148
United Kingdom (2)	0.032243256	0.019130252
Germany (3)	0.025862792	-0.068041088
China (4)	0.047893337	0.077313942
Argentina (5)	0.021142736	-0.047364341
Australia (6)	0.046502178	0.030612553

Brazil (7)	-0.033266111	-0.062544056
Egypt (8)	-0.186343957	-0.098343127
India (9)	-0.398301298	-0.280329565
Indonesia (10)	-0.078628875	-0.048058698
Israel (11)	0.015475790	-0.008085568
Japan (12)	0.039208463	0.026607969
Kenya (13)	-0.153819977	-0.207360034
Mexico (14)	0.008124919	-0.060065800
Nigeria (15)	-0.217098149	-0.264464503
Philippines (16)	-0.274159408	-0.277210981
Poland (17)	0.034064594	0.029362783
South Africa (18)	-0.190354154	-0.313516251
Spain (19)	0.001593898	-0.030403776
Tanzania (20)	-0.427481044	-0.291590323
Turkey (21)	-0.077143107	-0.115878463
United States (22)	0.047953895	0.029837192
Hong Kong (23)	0.064620088	0.071109710

4.2.8 Fit Comparison

```
# model comparison tests
summary(compareFit(fit.config, fit.threshold, fit.threshold.partial))
```

```
##### Nested Model Comparison #####
```

```
Scaled Chi-Squared Difference Test (method = "satorra.2000")
```

```
lavaan->unknown():
```

```
lavaan NOTE: The "Chisq" column contains standard test statistics, not the robust test the
statistics.
```

	Df	AIC	BIC	Chisq	Chisq diff	Df diff	Pr(>Chisq)
fit.config	23			54.10			
fit.threshold.partial	97			604.88	1346.7	74	< 2.2e-16 ***
fit.threshold	111			2256.70	3719.0	14	< 2.2e-16 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##### Model Fit Indices #####
```

	chisq.scaled	df.scaled	pvalue.scaled	rmsea.scaled	cfi.scaled	tli.scaled
fit.config	169.061†	23	.000	.034†	1.000†	0.999
fit.threshold.partial	1551.415	97	.000	.052	0.998	0.998
fit.threshold	5592.781	111	.000	.094	.994	.993

```
##### Differences in Fit Indices #####
```

	df.scaled	rmsea.scaled	cfi.scaled	tli.scaled	srmr
fit.threshold.partial - fit.config	74	0.018	-0.001	-	
0.001	0				
fit.threshold - fit.threshold.partial	14	0.042	-0.004	-	
0.005	0				

```
## compare all remaining models
```

```
summary(compareFit(fit.config, fit.threshold.partial, fit.metric, fit.scalar, fit.strict))
```

```
##### Nested Model Comparison #####
```

```
Scaled Chi-Squared Difference Test (method = "satorra.2000")
```

```
lavaan->unknown():
```

```
lavaan NOTE: The "Chisq" column contains standard test statistics, not the robust test th
statistics.
```

	Df	AIC	BIC	Chisq	Chisq diff	Df diff	Pr(>Chisq)
fit.config	23			54.10			
fit.threshold.partial	97			604.88	1346.7	74	< 2.2e-16 ***
fit.metric	141			1396.76	1300.5	44	< 2.2e-16 ***
fit.scalar	185			4483.00	4088.2	44	< 2.2e-16 ***
fit.strict	273			17240.13	21776.7	88	< 2.2e-16 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##### Model Fit Indices #####
```

	chisq.scaled	df.scaled	pvalue.scaled	rmsea.scaled	cfi.scaled	tli.scaled
fit.config	169.061†	23	.000	.034†	1.000†	0.999
fit.threshold.partial	1551.415	97	.000	.052	0.998	0.998
fit.metric	2962.036	141	.000	.060	0.997	0.997
fit.scalar	8014.899	185	.000	.087	.992	.994
fit.strict	29765.275	273	.000	.139	.970	.985

```
##### Differences in Fit Indices #####
```

	df.scaled	rmsea.scaled	cfi.scaled	tli.scaled	srmr
fit.threshold.partial - fit.config	74	0.018	-0.001	-	
0.001 0.000					
fit.metric - fit.threshold.partial	44	0.008	-0.001	-	
0.001 0.005					
fit.scalar - fit.metric	44	0.027	-0.005	-	
0.003 0.002					
fit.strict - fit.scalar	88	0.052	-0.022	-	
0.009 0.037					

5 Summary and Conclusions

The above tests of invariance and country-specific analyses provide evidence that the 2-factor model for the PHQ-4 is statistically approximately invariant across countries. First, the country-specific results only highlighted potential misfit of the two-factor model in the a potential lack of adequate correlation among items in difference factors—an unaccounted for residual variance or cross-loading. Such an un accounted for residual correlation is not particularly meaningful or impactful for our purposes of analyzing each factor of the PHQ-4 separately. We conclude from these analyses that within each country the separate factor construction is adequate.

Conclusion: The PHQ-4 two-factor model has evidence of at least configural invariance in Wave 2 of the GFS.

Secondly, based on the multi-group CFA analyses (with covariance matrix input and the person-level data input analyses), we conclude that there is partial invariance with respect to the thresholds. Once the third threshold is allowed to be freely estimated for these items and countries,

- DEPRESSED: India (9), Indonesia (10), Philippines (16), Tanzania (20), and Hong Kong (23)
- INTEREST: China (4), Indonesia (10), Kenya (13), Tanzania (20)
- CONTROL_WORRY: Tanzania (20), and Hong Kong (23)
- FEEL_ANXIOUS: India (9), Philippines (16), Tanzania (20),

that there is approximate metric invariance. Meaning that factor loadings are approximately equal across all countries implying that these items load on the depression and anxiety factors approximately the same across all countries. The model fit statistics did not show a meaningful discrepancy between the configural model, partial-threshold invariance model, and the metric invariance model. While the scaled-RMSEA is relatively high (0.06) in the metric invariance model, the other fit indices (scaled-CFI=0.997, scaled-TLI=0.997, SRMR=0.009) are quite good for such a large sample and large number of countries. **The SRMR is especially excellent where the model-implied correlations were, on average, less than 0.01 correlation units off.** While the “largest” discrepancy tended to occurred in the correlation between loss of interest (INTEREST) and worry about control (CONTROL_WORRY), even then the largest was ‘-0.06’ in Egypt.

Conclusion: The PHQ-4 two-factor model has evidence of at least metric invariance in Wave 2 of the GFS.