KU LEUVEN

Exploring attitudes towards supporting welfare by human values in Belgium and Spain

May 2021

1. Theoretical Framing

1.1 Human Values

Theory of Basic Human Values is developed by Shalom H. Schwartz and widely used cross-cultural studies of individual values. There are several motivational types of values, i.e., openness to change, self-enhancement, conservation and self-transcendence as shown in Fig 1. Human values are very useful to research measured variables such as attitudes and applicable across cultures and countries (Schwartz, S. H. 2012).

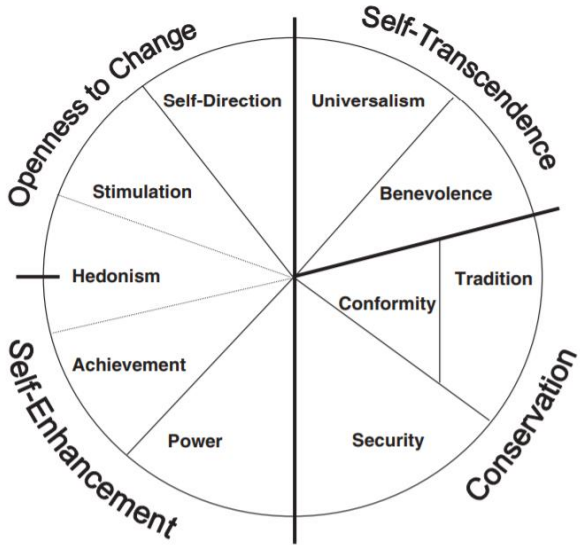

Fig 1 Structural Relations Among the 10 Values

These values are interconnected and influence each other. Some values result in either an accordance with one another or a conflict with other values. First dimension is openness to change versus conservation, which contrasts independence and obedience. The second bipolar dimension is self-enhancement versus self-transcendence and is concerned on the one side with the interests of one-self and on the other side of the welfare of others (Schwartz, S. H. 1992).

In this paper, conservation and self-transcendence are selected to analysis the attitude towards welfare supporting as shown in Tab 1.

Tab 1 Selected Values and Description

Value	Description
Benevolence	Preserving and enhancing the welfare of those with whom one is in frequent personal contact (the 'in-group').
Universalism	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.

Tradition	Respect, commitment, and acceptance of the customs and ideas that one's culture or religion provides.
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.
Security	Safety, harmony, and stability of society, of relationships, and of self.

1.2 Welfare attitude

Welfare attitude is a very complex phenomenon and has been researched by different means and methods. The primary aim of the welfare state can be seen in ensuring socio-economic security and socio-economic equality. An important question in this respect is whether people see a governmental responsibility for doing this (Heien, T. , and HJ Andreß 1999). To measure the attitude towards welfare, we can use the variables which measures about the responsibility of government. give many determinants of attitudes towards the welfare state, such as self-interest, values and cultural integration (Heien, T. , and HJ Andreß 1999; Gilens, and Martin).

1.3 Summary

By using human values, we can get information about the attitude towards welfare supporting. This process can be done by using SEM methods which is shown below. We will focus on the relation between values and attitudes of supporting welfare. We will refer to attitudes as individual's idea on favorableness of supporting certain objects. Attitudes will change in different contexts and situations, but values will be more durable. In this paper, I would expect that selected human values will influence attitudes towards welfare.

2. Research hypotheses

The theoretical considerations lead us to following hypotheses. I believe that:

(H1) individuals who have high values on self-transcendence will be more supportive of welfare.

(H2) individuals who are conservative will be more supportive of welfare.

(H3) There is measurement invariance between Belgium and Spain regarding the relationships among values and welfare supporting attitudes.

3. Description of the dataset

In this paper, the hypotheses will be tested by the European Social Survey (ESS4 2008)

which can be found on the ESS website[1]. The data in this round have a theme about welfare which would be suitable for my research.

To research and compare the welfare attitude between Belgium and Spain, the data of two countries are chosen. There are 1760 observations in Belgium and 2576 observations in Spain, respectively. By the method of computing scores for the 10 human values (Schwartz, Shalom H), several variables are selected as indicators for different latent variables as shown in Tab 2.

Table 2 Overview of Variables

Variable	Variable Description	Scale
iphlppl	Important to help people and care for others well-being.	1-6
iplylfr	Important to be loyal to friends and devote to people close.	1-6
ipeqopt	Important that people are treated equally and have equal opportunities.	1-6
ipudrst	Important to understand different people.	1-6
impenv	Important to care for nature and environment.	1-6
ipmodst	Important to be humble and modest, not draw attention.	1-6
imptrad	Important to follow traditions and customs	1-6
ipfrule	Important to do what is told and follow rules	1-6
ipbhprp	Important to behave properly.	1-6
impsafe	Important to live in secure and safe surroundings.	1-6
ipstrgv	Important that government is strong and ensures safety	1-6
gvslvol	Standard of living for the old, governments' responsibility.	0-10
gvslvue	Standard of living for the unemployed, governments' responsibility	0-10
gvhlthc	Health care for the sick, governments' responsibility	0-10

Based on the research of Schwartz, Shalom H, the variable related to self-transcendence (iphlppl, iplylfr, ipeqopt, ipudrst & impenv) and conservation (ipmodst, imptrad, ipfrule, ipbhprp, impsafe & ipstrgv) are scaled on 1-6, 1 meaning very like me and 6 meaning not like me at all. For example, the larger the number, the less conservative the individual is. The variables related to welfare attitude factor (gvslvol, gvslvue, gvhlthc) are scaled on 0-10 with 0 meaning not governments' responsibility at all and 10 meaning entirely governments' responsibility. The large values of these variables mean that the individual is more supportive of welfare

[1] ESS website: https://www.europeansocialsurvey.org/data/module-index.html

policies.

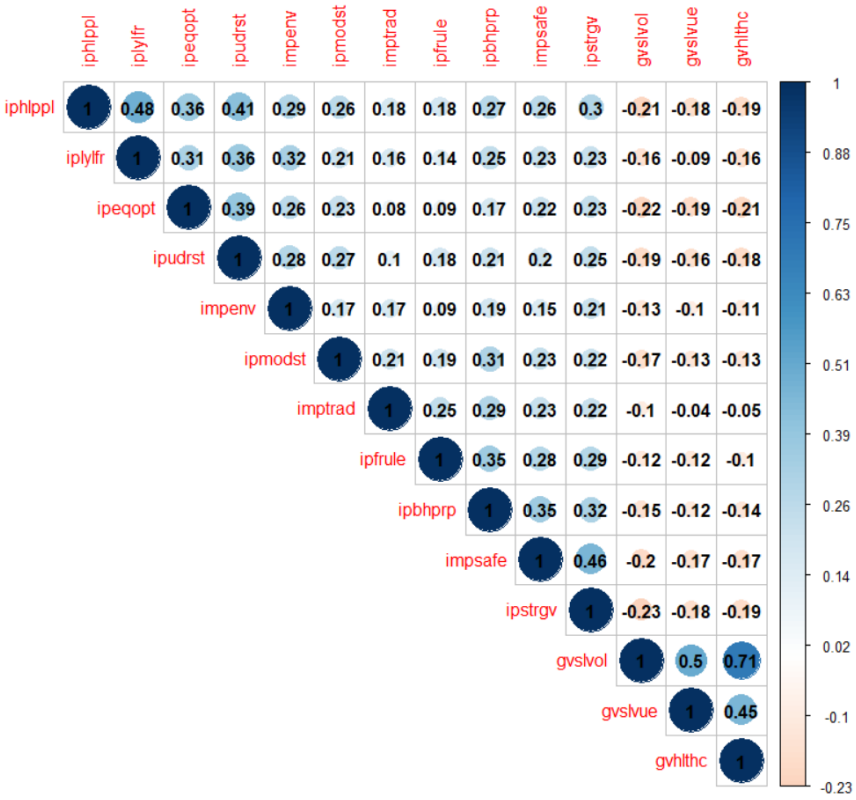

Fig 2 Correlation Matrix

To carry out the tests of the hypotheses, the welfare is regarded as dependent variable while the conservation and self-transcendence are regarded as independent variables. We only consider the selected human values and welfare supporting attitudes and will not include other variables to make the interpretation easy.

By Fig 2, we can have more understanding of the correlations among these variables. Clearly, all the variables of conservation and self-transcendence have positive correlations with each other. The variables of welfare supporting also have positive correlation with each other and the correlation of gvslvol and gvhlthc is 0.71 which is the largest one. As for the correlation between welfare and conservation/self-transcendence, they are all negative which means that high value on this construct will lead to low response.

4. Model strategy

4.1 MIMIC Model and Goodness of Fit

To investigate the relationship between the latent variables and test the hypotheses, CFA is

used to build the model. To check the goodness of fit, $\chi^2, CFI, TFI, RMSEA\ and\ SRME$ are compared with some the threshold values. For the original model, we can check the global fit measures as shown in Tab 3. Clearly, there are some statistics telling the bad fitting of the model. Because the $\chi 2$ statistics is a very sensible test and the size of dataset is large, the result is still acceptable as longs as other fit statistics show good results.

Tab 3 Goodness of Fit (Original Model)

Statistics	χ^2	$\chi^2\ p-value$	CFI	TFI	RMSEA	SRME
Original Model	**717.486**	0.000	0.953	**0.942**	0.045	0.032

As original model seems to have some room to improve to give better performance, we can use modification indices(mi) to improve the fitting of the model. Based on values of MI, we can add some covariances to the model, i.e., $impsafe \sim\sim ipstrgv\ \&\ ipbhprp \sim\sim ipstrgv$. After the revision of the original model, we can get the improved model and check the goodness of fit again as shown in Tab 4. The statistics give the evidence of the good fitting of the model. The path diagram of the model is shown in Fig 3.

Tab 4 Goodness of Fit (Improved Model)

Statistics	χ^2	$\chi^2\ p-value$	CFI	TFI	RMSEA	SRME
Improved Model	568.73	0.000	0.964	0.954	0.040	0.031

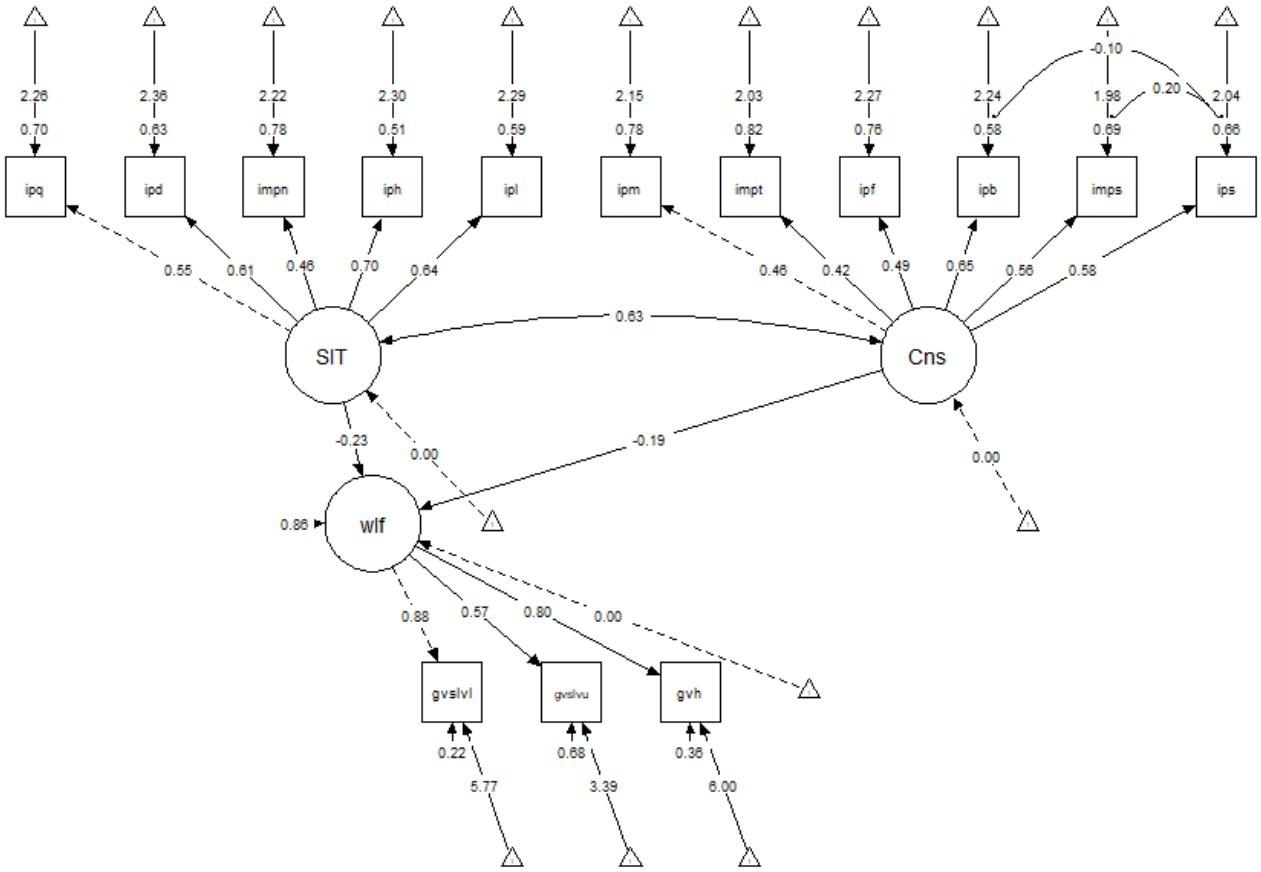

Fig 3 Diagram of Model

To be more specified, the Chi-Squared Difference test can be done to check whether the improved model is better than the original model as shown in Tab 5. Based on the results, we can believe that the improved model has better fitting of the model than original model.

Tab 5 Comparison of Models

Statistics	Df	AIC	BIC	Chisq	Chisq Diff	Df diff	$Pr(> Chisq)$
Improved Model	72	169925	170225	568.73			
Original Model	74	170070	170357	717.49	148.75	2	$< 2.2e-16$

4.2 Parameters of the Model

As shown in Tab 6, standardized factor loadings are all significant and this is consistent with the theory we used. At the same time, we can find that all the standardized loadings are larger than 0.4. So, we can believe that the selected indicators are all related to the factors.

Tab 6 Factor Loadings

Latent Variables: Self-transcendence

Variable	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.lv	Std.all
ipeqopt	1.000				0.448	0.546
ipudrst	1.223	0.044	27.872	0.000	0.548	0.610
impenv	0.941	0.041	22.891	0.000	0.422	0.464
iphlppl	1.289	0.045	28.720	0.000	0.578	0.700
iplylfr	1.082	0.039	27.414	0.000	0.485	0.637

Latent Variables: Conservation

Variable	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.lv	Std.all
ipmodst	1.000				0.511	0.465
imptrad	1.070	0.056	19.174	0.000	0.546	0.421
ipfrule	1.222	0.060	20.536	0.000	0.624	0.491
ipbhprp	1.304	0.057	22.892	0.000	0.666	0.648
impsafe	1.188	0.056	21.377	0.000	0.606	0.556
ipstrgv	1.249	0.061	20.350	0.000	0.638	0.585

Latent Variables: welfare

Variable	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.lv	Std.all
gvslvol	1.000				1.295	0.884
gvslvue	0.913	0.026	34.986	0.000	1.182	0.569
gvhlthc	0.884	0.020	44.943	0.000	1.145	0.801

To check the proportion of variance of the latent response that was explained by the predictors, we can check R^2 as shown in Tab 7. The R^2 means the variance explained by the corresponding factor. For example, 78.2% variance of the gvslvol (Standard of living for the old, governments' responsibility) is explained by the welfare factor. And the R^2 of welfare means the proportion of variance of the dependent variable explained by the model. In this case, 14.5% of variance of welfare supporting attitude can be explained by the model.

Tab 7 Summary of R^2

Variable	ipeqopt	ipudrst	impenv	iphlppl	iplylfr
R^2	0.298	0.372	0.216	0.490	0.406
Variable	ipmodst	imptrad	ipfrule	ipbhprp	impsafe
R^2	0.216	0.178	0.241	0.420	0.309
Variable	ipstrgv	gvslvol	gvslvue	gvhlthc	welfare

R^2	0.342	0.782	0.324	0.641	0.145

In Tab 8, we can find the regression coefficients of the model and both are significant. Based on the results, we can test *H1* and *H2*. The standardized coefficient of Self-transcendence is -0.233 which means the larger the self-transcendence factor, the less the welfare factor. In the dataset, if the self-transcendence is larger, it means the individual has less value on self-transcendence. We can basically confirm that individual who emphasizes on self-transcendence will be more supportive of welfare and *H1* holds.

Similarly, there is a negative relationship between welfare supporting and conservation, and this means that larger conservation leads to smaller welfare. If the conservation is larger, it means that the individual is less conservative. *H2* cannot be rejected based on the information we get and *H2* holds, i.e., individuals who are conservative will be more supportive of welfare.

Tab 8 Regression Coefficients

welfare ~	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.lv	Std.all
Self-transcendence	-0.673	0.081	-8.335	0.000	-0.233	-0.233
Conservation	-0.477	0.073	-6.537	0.000	-0.188	-0.188

4.3 Measurement equivalence

Measurement equivalence is achieved if a measurement instrument produces equivalent results, regardless of some unrelated properties of the test subjects. Multiple Group SEM can be used to estimate similar models for different models.

To test *H3*, multigroup models will be used to check the measurement invariance between Belgium and Spain. Three models are built to compared measurement invariance by configural invariance, metric invariance, and scalar invariance. Configural invariance means that the same factor structure is imposed on all groups. Metric invariance means that factor loadings are constrained to be equal across groups. Scalar invariance means that factor loadings and intercepts are constrained to be equal across groups.

Tab 9 Comparison of Models

	Df	AIC	BIC	Chisq	Chisq Diff	Df diff	$Pr(>Chisq)$
configural invariance	144	161569	162164	743.48			
metric invariance	155	168104	168633	849.17	105.69	11	$< 2.2e-16$
scalar invariance	166	168533	168992	1300.40	451.22	11	$< 2.2e-16$

As shown in Tab 9, the p-values of two tests are both significant, we may conclude that metric and scalar invariance are not supported in this dataset. I believe that *H3* should be rejected based on the information we get in this dataset. It may be not a good choice to compare the values of latent means between the two countries.

In Tab 10 and Tab 11, the regression coefficients of two countries are listed and we can learn more information about the metric models. All the regression coefficients are negative which is consistent with *H1* and *H2*. But the estimate regression coefficient of conservation in Belgium is non-significant. The regression coefficients of Spain are significant which are similar to the model we talked before.

Tab 10 Regression Coefficients of Belgium

welfare ~	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.all
Self-transcendence	-0.641	0.128	-5.022	0.000	-0.222
Conservation	-0.130	0.114	-1.144	0.253	-0.053

Tab 11 Regression Coefficients of Spain

welfare ~	Estimate	Std.Err	z-value	$P(>\|z\|)$	Std.all
Self-transcendence	-0.750	0.105	-7.122	0.000	-0.262
Conservation	-0.251	0.093	-2.705	0.007	-0.100

5. Results

We expect that self-transcendent individuals are more supportive of welfare *(H1)* and conservative individuals are more supportive of welfare*(H2)*.

Based on the theory, MIMIC model and Multi group model are built to test the hypothesis. According to the estimated parameters, *H1* and *H2* holds when we use ESS dataset to test them in Belgium and Spain. There are negative relationships between welfare and self-transcendence, conservation. When we research the scaled values of these latent variables, we can find that our results largely confirm our hypotheses regarding the human values and welfare supporting attitudes.

For the measurement invariance between Belgium and Spain*(H3)*, the hypothesis cannot hold when we test the configural invariance, metric invariance, and scalar invariance. This is different from our initial idea. According to the dataset I select, it will be unwise to think there is measurement invariance between two countries regarding the relationships among values

and welfare attitudes. To deeply research *H3,* more rounds of data points and countries should be selected to test it broadly.

In general, based on the tests of this data set (ESS 4), I think *H1(Individuals who have high values on self-transcendence will be more supportive of welfare)* and *H2(Individuals who are conservative will be more supportive of welfare)* hold, and *H3(There is measurement invariance between Belgium and Spain regarding the relationships among values and welfare supporting attitudes)* will be rejected.

References

Heien, T. , and HJ Andreß. (1999). Explaining Public Attitudes towards the German Welfare State using Structural Equation Models. *Conference on Recent Trends and Methods of Social Stratification Research.*

Gilens, & Martin. (1995). Racial attitudes and opposition to welfare. *Journal of Politics*.

Schwartz, S. H. (2012). An overview of the schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1).

Schwartz, Shalom H.: Computing Scores for the 10 Human values. *European Social Survey*.

Schwartz, S. H. (1992). Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*.

Spini, D. (2003). Measurement Equivalence Of 10 Value Types from The Schwartz Value Survey Across 21 Countries. *Journal of Cross-Cultural Psychology*, 34(1), pp. 3–23.

Yves Rosseel. (2021). The lavaan tutorial.

Appendices-Code

```
#Code of SEM Project
library(haven)
library(dplyr)
library(psych)
library(lavaan)
library(tidySEM)
library(corrplot)
library(lavaan)
library(semTools)
library(semPlot)
library(psych)
#Import data
ess <- haven::read_sav("ESS4e04.5_F1.sav")
#select data of BE and ES
ess_df<- subset(ess, cntry =='BE'|cntry =='ES',
select=c(cntry,iphlppl,iplylfr,ipeqopt,ipudrst,impenv,ipmodst,imptrad,ipfrule,ipbhprp,impsafe,i
pstrgv,gvslvol,gvslvue,gvhlthc))
#information of data
nrow(ess_df)
ncol(ess_df)
names(ess_df)
#count of obervations
table(ess_df$cntry)
#correlation
cor1<-cor(ess_df[,-1], use = 'pairwise.complete.obs')
corrplot::corrplot(cor1,
                   is.corr = FALSE,
                   method = "circle",
                   type = "upper",
                   addCoef.col = "black"
)

# CFA MODEL
model<-'
```

```
  SelfT =~ ipeqopt + ipudrst + impenv + iphlppl + iplylfr
  Conse =~ ipmodst + imptrad + ipfrule + ipbhprp + impsafe + ipstrgv
  welfare=~gvslvol + gvslvue + gvhlthc
  welfare ~ SelfT + Conse
'

#Fit all countries
fit<-sem(model,data=ess_df,missing='direct')
summary(fit, fit.measures=TRUE, standardized=TRUE, rsquare=T)
semPaths(fit,"model","stand",style="LISREL",
layout="tree2",rotation=1,edge.color="black",edge.label.cex=0.8,mar=c(1,1,1,1))

modificationindices(fit)
## Local fit measures: modification indices
mi <- inspect(fit,"mi")
mi.sorted <- mi[order(-mi$mi),]
mi.sorted[1:5,]
#improved model
model2<-'
  SelfT =~ ipeqopt + ipudrst + impenv + iphlppl + iplylfr
  Conse =~ ipmodst + imptrad + ipfrule + ipbhprp + impsafe + ipstrgv
  welfare=~gvslvol + gvslvue + gvhlthc
  welfare ~ SelfT + Conse
  impsafe ~~ ipstrgv
  ipbhprp ~~ ipstrgv
'
fit2<-sem(model2,data=ess_df, missing='direct')
summary(fit2, fit.measures=TRUE, standardized=TRUE, rsquare=T)
semPaths(fit2,"model","stand",style="LISREL",
layout="tree2",rotation=1,edge.color="black",edge.label.cex=0.8,mar=c(1,1,1,1))

anova(fit,fit2)
r2 <- round(inspect(fit2,"r2"),3)
r2
##Multigroup MODEL
```

```
#configural invariance
fitmg1 <- sem(model2,data=ess_df,group="cntry")
summary(fitmg1, fit.measures=TRUE, standardized=TRUE, rsquare=T)
#weak invariance
fitmg2 <- sem(model2,data=ess_df,group="cntry", missing='direct',
                    group.equal=c("loadings"))
summary(fitmg2, fit.measures=TRUE, standardized=TRUE, rsquare=T)
##strong invariance
fitmg3 <- sem(model2,data=ess_df,group="cntry", missing='direct',
                    group.equal=c("intercepts","loadings"))
summary(fitmg3, fit.measures=TRUE, standardized=TRUE, rsquare=T)
lavTestLRT(fitmg1, fitmg2, fitmg3)
```