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What do citizens expect from a democracy? An invariance test and comparison between East and West Germany with the ISSP 2004

Eldad Davidov & Michael Braun

One of the prerequisites for a functioning democracy is that its citizens support by and large its democratic system. However, such support cannot be taken for granted and should be monitored. Furthermore, different people may have different perceptions, expectations, and understanding of the concept of democracy. This may be especially true for citizens socialized in different political systems like those in Eastern and Western Europe before the fall of the iron curtain, where the concept of democracy and the rights of citizens in a democracy were communicated in quite different ways. Thus, the questions of whether people in East and West Germany understand the concept of rights in a democracy in a similar way and whether they find such rights equally important could be of particular relevance since the German unification in 1989. In the following research note we will use the International Social Survey Program (ISSP) 2004 data to test (a) whether and to what extent people in East and West Germany understand, in a similar way, the concept of rights in a democracy as measured in the ISSP data; (b) whether the importance scores for rights in a democracy may be compared between East and West Germany; and (c) whether citizens in East and West Germany report similar levels of importance for such rights.

Until 1989 people in East Germany experienced a communist regime. Thus, according to the socialization hypothesis of Inglehart (1997, p. 33) which asserts that “one’s basic values reflect the conditions that prevailed during one’s preadult years”, we would expect that (H1a) East Germans report *lower* levels of importance for rights in a democracy compared to West Germans. On the other hand, scarce resources may be valued more highly by people who were lacking them in earlier periods in their lives. Rights in a democracy may be considered such resources (e.g., of potential standard of living or of participation in decision-making processes). This proposition corresponds with the scarcity hypothesis of Inglehart (1990, 1997) which asserts that “one places greatest subjective value on things that are relatively in short supply” (Inglehart 1997, p. 33). Following this logic, we would hypothesize that (H1b) people in East Germany would report *higher* levels of importance for rights in a democracy. We will start with a short description of the data and method used, present the results of the

statistical analysis that test our hypotheses, and finalize with some concluding remarks.

1 Data

The last release of the ISSP Citizenship Module collected in 2004 provides us with an opportunity to examine the measurement characteristics of the scores of rights in a democracy and test our hypotheses. It collected representative data on the concept in 39 countries (for further details see http://www.gesis.org/en/data_service/issp/data/). In this study we will focus on data collected in the former East Germany (N = 436) and in the former West Germany (N = 896).

Five questions in the ISSP asked about the importance of rights in a democracy. The first question refers to the importance of a government that provides everyone an adequate standard of living (designated as V30 in the data set), the second question refers to the importance of a government that respects minorities (V31), the third to the importance of a government that treats its citizens equally (V32), the fourth to the importance of a government that meets citizens' oriented decisions (V33), and the last to the importance of a government that involves citizens in its decisions (V34). Responses were provided on a seven-point scale ranging from 1 (*not at all important*) to 7 (*very important*).

2 Method

To evaluate whether and to what extent people in East and West Germany understand the questions in a similar way and compare their scores, we have to guarantee that the scale displays measurement invariance. There are different definitions for the concept, but a widely used explanation suggests that measurement invariance implies 'whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute' (Horn & McArdle, 1992, p. 117). The literature suggests different levels of invariance. *Metric invariance* guarantees that people understand the same thing when asked the same questions. However, it still does not allow comparing the scores across groups. Comparing the scores of the scale across East and West Germany requires a higher level of measurement invariance, *scalar invariance*. When scalar invariance is guaranteed, one may proceed with mean comparisons of the latent variables means. If neither metric nor scalar invariance are guaranteed, then although the same questions are used to measure the scale, they are not comparable in psychometric terms. One names this low

level of invariance *configural invariance* (Davidov, Schmidt, & Schwartz, 2008; Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2002).

To test for metric invariance, one constrains the factor loadings to be equal across groups. Metric invariance is supported by the data if the global fit measures are satisfactory (different cut-off criteria are suggested in the literature, but many authors refer to the recommendations suggested in the studies of Hu & Bentler, 1999 and Marsh, Hau, & Wen, 2004). Furthermore, there should be no meaningful modification indices suggested by the program (for a discussion, see Saris, Satorra, & Van der Veld, 2009). To test for scalar invariance one additionally constrains the intercepts of the indicators to be equal across groups. Scalar invariance is supported by the data if the global fit measures for this more constrained model are also supported by the data and are not substantially worse than those of the metric invariance model (Chen, 2007), and if there are no meaningful modification indices.

If full metric or scalar invariance are not evidenced in the data, one may fall back to partial metric or scalar invariance (Byrne, Shavelson, & Muthén, 1989; Steenkamp & Baumgartner, 1998). Partial metric invariance implies that at least two indicators in the scale are found that possess equal factor loadings. Partial scalar invariance implies that at least two indicators in the scale are found that possess equal factor loadings *and* intercepts.

3 Results

We conducted a multiple group confirmatory factor analysis (MGCFA: Jöreskog, 1971; Bollen, 1989) and used raw data for East and West Germany and the Full Information Maximum Likelihood (FIML) procedure to deal with the problem of missing values (Schafer & Graham, 2002). All analyses were conducted with the Amos 17.0 computer program (Arbuckle, 2007). Results are summarized in Table 1. The model configuration is displayed in Figure 1.

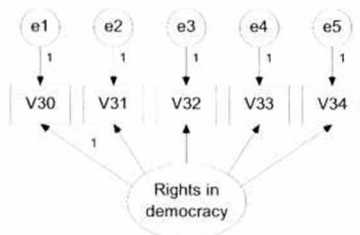


Figure 1: The model.

Model	CFI	RMSEA	PCLOSE	Chi-square	Degrees of Freedom
1. Configural invariance	0.999	0.013	0.99	7.35	6
2. Metric invariance	0.999	0.009	1.00	11.06	10
3. Scalar invariance	0.979	0.044	0.76	49.60	14
4. Partial scalar invariance ^a	0.990	0.031	0.99	29.36	13
5: Equal latent means	0.980	0.042	0.81	47.42	14

Table 1 : MGCFA: Fit Measures of the Invariance Test.

Note: CFI = comparative fit index; RMSEA = root mean square error of approximation; PCLOSE = probability of close fit. For details see, for example, Arbuckle (2007).

^a The intercept for V31 was released.

The global fit measures of the configural invariance model (Model 1 in Table 1) reveal that we cannot reject this model and may treat the model configuration measuring rights in democracy invariant in East and West Germany. In the next step (Model 2 in Table 1) we constrained the factor loadings to be equal across East and West Germany. The global fit measures reported in Table 1 suggest that this model also cannot be rejected. In addition, the fit measures did not deteriorate substantially compared with the configural invariance model (Chen, 2007). In other words, we may assume that people in both parts of Germany understand the concept in a similar way. Model 3 in Table 1 also constrains the indicator intercepts in the two groups to be equal. The global fit measures reveal that although they are satisfactory, their score is considerably lower than that of the metric invariance model (Chen, 2007). Thus, in this case we may fall back to the partial scalar invariance model.

The largest difference in indicator intercepts observed in Model 2 (and the largest modification required in Model 3) is observed for the indicator V31, importance of a government that respects minorities. Releasing the equality constraint on the intercept of this variable (Model 4 in Table 1) results in a satisfactory model fit. Thus, we may accept the partial scalar invariance model. Scores may be compared for the latent variables across the groups (Sörbom, 1974, and Little, Slegers, & Card, 2006, discuss how to compare latent variable means across groups).

In the next step we test whether constraining the means of the latent variables across East and West Germany to be equal results in model deterioration. If

this is not the case, one could argue that citizens in both parts of Germany report similar levels of importance for rights in a democracy. If this model (Model 5) deteriorates (compared with Model 4), we may conclude that the means of the latent variable are different in each group. It turns out that the RMSEA and CFI global fit measures in Model 5 do not deteriorate significantly. In other words, differences in the means of the latent variable are not very large. However, the chi-square difference test comparing Model 4 with Model 5 turns out to be significant. This implies that although small, the difference in the latent mean is significant across groups, and we should reject the equality constraint on the latent mean across East and West Germany. Thus, we reject Model 5 and turn back to Model 4 to compare the means of the latent variable.

The mean of Rights in Democracy in West Germany is 6.18. In East Germany the mean is estimated to be 6.37. In other words, in both parts of Germany, rights in democracy are considered to be very important (on a seven-point scale). However, these rights are considered even more important in East Germany. Thus, Hypothesis 1b was supported by the data.

4 Conclusions and final remarks

We opened this note by arguing that citizens who value rights in a democracy highly may be an asset for a functioning democracy. However, at the same time, such attitudes may not be taken for granted and should be monitored and evaluated continuously by survey data. The ISSP 2004 data with its citizenship module collected data on these questions. We tried to figure out whether East and West Germans differ in their expectations of democracy. We postulated that differences may be observed because citizens in both parts of Germany were exposed to different types of regimes before 1989.

Before conducting such a comparison it is necessary to test whether people in the two groups understand the concept under study in a similar way and use the scale to answer the survey questions measuring this concept in a similar way (Billiet, 2003; Steenkamp & Baumgartner, 1998). We found that not only do people in both parts of Germany understand the concept of importance of rights in a democracy in a similar way, but they also report similar levels of importance for such rights. Nevertheless, East Germans report somewhat higher levels of importance of such rights, providing support for the scarcity hypothesis postulated by Inglehart (1990, 1997).

Peter Schmidt has demonstrated throughout his career an extraordinary attention to questions of measurement, and he made considerable efforts to control for measurement errors in his studies to ensure that conclusions are drawn from

the data in a meaningful way. By doing this did he not only advance the theory-driven empirical social research by a great deal, he also set new and higher standards as to how such research should be done. The importance of establishing cross-cultural measurement invariance prior to any substantive comparisons was one of the aspects that he has continuously emphasized.

5 References

- Arbuckle, James L. 2007. *Amos 16.0 User's Guide*. Chicago: SPSS.
- Billiet, Jaak. 2003. Cross-Cultural Equivalence with Structural Equation Modeling. In *Cross-Cultural Survey Methods*, eds. Janet A. Harkness, Fons J. R. Van de Vijver, and Peter Ph. Mohler, 247-264. New York, NY: John Wiley.
- Bollen, Kenneth, A. 1989. *Structural Equations with Latent Variables*. New York: Wiley.
- Byrne, Barbara M., Richard J. Shavelson, and Bengt O. Muthén. 1989. Testing for the Equivalence of Factor Covariance and Mean Structures: The Issue of Partial Measurement Invariance. *Psychological Bulletin* 105:456-466.
- Chen, Fang F. 2007. Sensitivity of Goodness of Fit Indexes to Lack of Measurement Invariance. *Structural Equation Modeling* 14(3): 464-504.
- Davidov, Eldad, Peter Schmidt, and Shalom. H. Schwartz. 2008. Bringing Values Back. Testing the Adequacy of the European Social Survey to Measure Values in 20 Countries. *Public Opinion Quarterly* 72: 420-445.
- Horn, John L. and John J. McArdle. 1992. A Practical and Theoretical Guide to Measurement Invariance in Aging Research. *Experimental Aging Research* 18: 117-144.
- Hu, Litze and Peter M. Bentler. 1999. Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling* 6: 1-55.
- Inglehart, Ronald. 1990. *Culture Shift in Advanced Industrial Society*. Princeton, NJ: Princeton University Press.
- Inglehart, Ronald. 1997. *Modernization and Postmodernization. Cultural, Economic, and Political Change in 43 Societies*. Princeton, NJ: Princeton University Press.
- Jöreskog, Karl G. 1971. Simultaneous Factor Analysis in Several Populations. *Psychometrika* 36: 409-426.
- Little, Todd D., David W. Slegers, and Noel A. Card (2006). A Non-arbitrary Method of Identifying and Scaling Latent Variables in SEM and MACS Models. *Structural Equation Modeling* 13(1): 59-72.
- Marsh, Herbert W., Kit-Tai Hau, and Zhonglin Wen. 2004. In Search of Golden Rules: Comment on Hypothesis-Testing Approaches to Setting Cutoff Values for Fit Indexes and Dangers in Overgeneralizing Hu and Bentler's (1999) Findings. *Structural Equation Modeling* 11: 320-341.
- Saris, Willem E., Albert Satorra, and William van der Veld (2009). Testing Structural Equation Models or Detection of Misspecifications? *Structural Equation Modeling* 16: 561-582.

- Schafer, Joseph L. and John W. Graham. 2002. Missing Data: Our View of the State of the Art. *Psychological Methods* 7: 147-177.
- Sörbom, Dag. 1974. A General Method for Studying Differences in Factor Means and Factor Structure between Groups. *British Journal of Mathematical and Statistical Psychology* 27: 229-239.
- Steenkamp, Jan-Benedict E. M. and Hans Baumgartner. 1998. Assessing Measurement Invariance in Cross-National Consumer Research. *Journal of Consumer Research* 25: 78-90.
- Vandenberg, Robert J. and Charles E. Lance. 2000. A Review and Synthesis of the Measurement Invariance Literature: Suggestions, Practices, and Recommendations for Organizational Research. *Organizational Research Methods* 3: 4-69