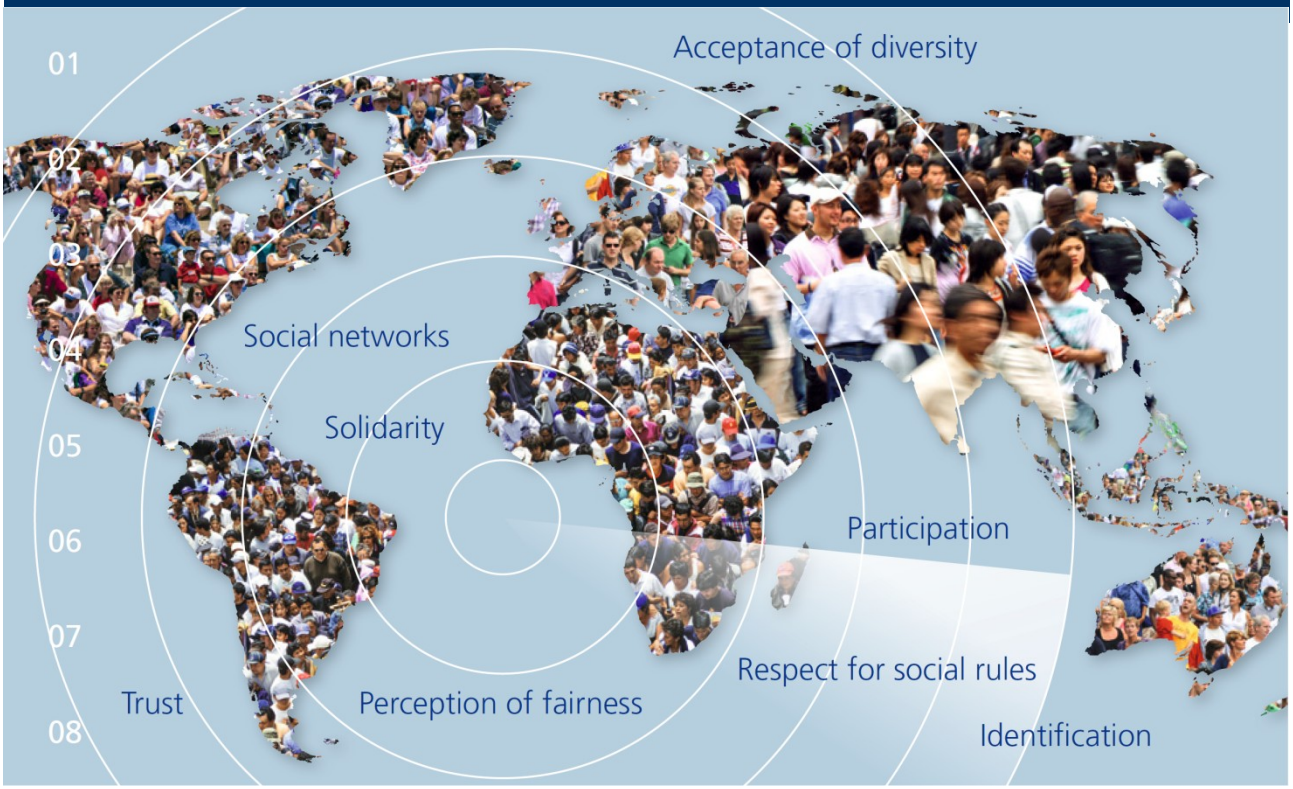
Social Cohesion Radar
Measuring Common Ground

An international Comparison of Social Cohesion
Methods Report



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An International Comparison of Social Cohesion Methods Report

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Table of Contents

1 Introduction 4

2 Overview of Theory, Data, and Method 5

2.1 Social Cohesion 5
2.2 Data 7
2.3 Method 9

3 Methodological Steps 13

1.1 Indicator Selection 14
1.2 Data Preparation 15
1.3 Construction of Dimensions 16
1.4 Construction of Cohesion Scores 22
1.5 Presentation of Scores in the Report 22

2 Descriptive Analyses 23

2.1 Analysis of Relations of Dimensions 24
2.2 Country Clusters Based on Similarity 24

3 Resumé 25

4 References 25

5 Appendices 28

5.1 Appendix A: Data Sources and Coverage 28
5.2 Appendix B: Technical Output 32

1 Introduction

The study *Social Cohesion Radar – An international Comparison of Social Cohesion* offers an assessment of the degree of social cohesion in 34 advanced societies (27 member states of the European Union[1] and seven other Western OECD countries: Australia, Canada, Israel, New Zealand, Norway, Switzerland, and the US) in four time periods from 1989 to 2012. This Methods Report presents a detailed documentation of the methodology behind it.

Carried out by a team of researchers from Jacobs University Bremen in Germany, the study belongs to a social reporting initiative of the Bertelsmann Foundation that aims to provide the general public with a conceptually and methodologically sound overview of the levels and trends of cohesion as well as an in-depth understanding of its determinants and outcomes. Due to the theoretical and methodological rigor of the study, researchers of the topic can also benefit from this project.

Despite its recent emergence as a "hot topic" in academic and public discourse, social cohesion has only been addressed in a somewhat piecemeal fashion–both in academic research and existing social reporting initiatives–following no unified approach, which has led to a fragmentary collection of knowledge on the topic. With the ongoing social reporting initiative of the Bertelsmann Foundation and the concrete study to which this Methods Report relates, we attempt to close the existing gap. Particularly in times of growing income inequality, increasing social cleavages and exclusion, individualism, diminishing local identification, increasing migration, and growing ethnic and cultural diversity, a structured approach to social cohesion will be beneficial to a better understanding of the issue.

The first half of this report offers our definition of cohesion, a 'taste' of the data[2] that we used, and an elaboration on the methods employed.

The second half offers a technical, step-by-step 'tour' through the process of constructing scores for social cohesion and its dimensions. In addition we offer technical appendices with relevant information for our measurements.

We publish this piece to assist our readers and potential students of cohesion in finding all information needed to understand the construction of the dimensions and indices of social cohesion, as published in the actual report. We attempt to do our best to deliver this information in a transparent, useful, and easily accessible way. This is also the reason why the Methods Report appears in English.

The report and the codebook are online available at www.social-cohesion.net.

1 The scheduled accession of Croatia to the EU for July 1, 2013 could not be reflected in our analyses.
2 For details on the data please refer to the accompanying Codebook.

2 Overview of Theory, Data, and Method

This section opens with a definition of cohesion and an elaboration on its dimensions to facilitate the further reading of the Methods Report. We then offer a brief description of the data and their sources (see the Codebook for details), after which we delve into an introduction of the methods we have applied.

2.1 Social Cohesion

A screening study by Schiefer, van der Noll, Delhey, and Boehnke (Bertelsmann Stiftung 2012) put together the scattered bits and pieces of knowledge on social cohesion to lay the foundation for a refined and theoretically sound conceptualization. We are furthermore highly indebted to the input of an expert group gathered by the Bertelsmann Foundation, who helped our definition crystallize.

We, thus, define social cohesion as the extent of social togetherness in a territorially defined geo-political entity. Social cohesion is a characteristic of the 'collective' residing in this entity, rather than of individual members. A cohesive society can be characterized by reliable social relations, a positive emotional connectedness of its members to the entity and a pronounced focus on the common good. Each of these three domains unfolds in three dimensions, which can be measured separately.

The domain 'social relations' encompasses the social networks of the members of the entity, the level of trust in others, and the degree of acceptance of diversity. The domain 'connectedness' comprises the strength of identification with the entity, the level of trust in institutions and the perceived level of fairness. The third domain, 'focus on the common good' encompasses the level of solidarity, the extent to which people are willing to recognize social rules, and the degree of civic participation.

Figure 1 depicts the structure of our definition of social cohesion, whereas Table 1 elaborates further on the dimensions. The numbers next to the dimensions are used in the later parts of the Methods Report as shortcuts to the dimensions.

Figure 1 Social Cohesion – Definition

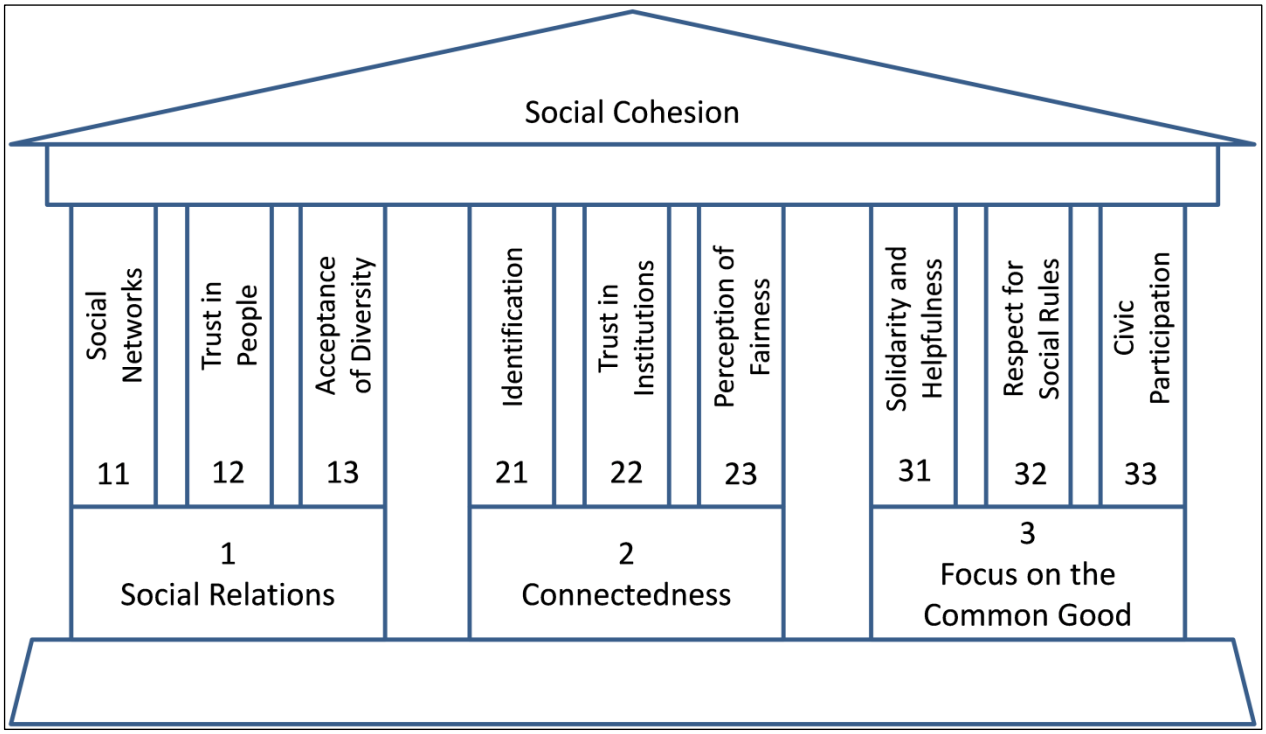


Table 1 Dimensions of Cohesion

Domain	Dimension	People in the society…
1 Social Relations	1.1 Social Networks	… have strong social networks.
	1.2 Trust in People	… place high trust in each other.
	1.3 Acceptance of Diversity	… consider individuals with different value orientations and lifestyles as equals.
2 Connectedness	2.1 Identity	… feel strongly connected with it and strongly identify with it.
	2.2 Trust in Institutions	… have high trust in its institutions.
	2.3 Perception of Fairness	… feel they are treated fairly.
3 Orientation towards the Common Good	3.1 Solidarity and Helpfulness	… feel responsible for each other and the well-being of others.
	3.2 Respect for Social Rules	… respect and adhere to rules and norms.
	3.3 Civic Participation	… participate in social and political life.

2.2 Data

In the following paragraphs we give a concise overview of the data with respect to the studied countries and time periods. Further details are available in the Codebook.

2.2.1 Secondary Data Analysis

Our approach to measuring social cohesion relies exclusively on secondary data analysis. This method re-uses data that have already been gathered by the same or other researchers to answer similar or very different research questions (Smith, 2008). The use of this method is common practice in the social sciences: for example, Smith shows that 75% of the contributions to three reputable British sociology journals use secondary data.

The advantages of secondary data analysis for our study, in particular, outweigh the related disadvantages. Secondary data analysis allows us to measure the dimensions of social cohesion with valid and reliable indicators from representative large-scale international comparative surveys, expert ratings, or data from international institutions. This saves time and money: A primary data collection for 34 countries would undoubtedly have been too costly. Foremost, secondary data analysis is the only meaningful strategy considering the aim of the study to measure the level of social cohesion in four time periods from 1989 to 2012. Otherwise we would have had to rely on retrospective accounts of the kind “How was it 20 years ago.”

A study using secondary data analysis has to deal with certain disadvantages stemming from the method which, however, do not outweigh its advantages. The most serious disadvantage is the scarcity of indicators that measure exactly what the study intends to measure. This issue becomes more pronounced with a study like ours that attempts to scrutinize the level of social cohesion in a period of almost 25 years. It is often the case that the usable data stem from different sources and are comparable only under certain conditions. In the sections to follow we present evidence that our data and indicator selection meet the purposes of the study to the best possible extent.

Secondary data analysis presents further challenges related to data availability: missing information on indicators for particular countries at particular points in time as well as limited availability of identical indicators across time.

Thanks to recent advances in the quantitative social science methods we can employ statistical procedures–exploratory and confirmatory factor analysis–that allow us to use only that part of the variance of an indicator that is relevant for the measurement of a dimension of social cohesion. Furthermore, our methods toolbox offers a reliable algorithm for dealing with missing data: full-information maximum likelihood (FIML). To handle the issue with differing indicators across time for the measurement of the dimensions, we turn to so-called reflective measurement models.

2.2.2 Sources

The study measures social cohesion and its dimensions using data from large-scale cross-sectional international comparative surveys, expert ratings and information from international institutes. Below we list the data sources. Brief descriptions on the data sources can be found in Appendix A, whereas specific data preparation steps are presented in the Codebook accompanying the data set.

Surveys

1. World Values Survey (short: WEVS)
2. European Values Study (short: WEVS)
3. Gallup World Poll (short: GWP)
4. European Social Survey (short: ESS)
5. European Quality of Life Survey (short: EQLS)
6. International Social Survey Programme (short: ISSP)
7. International Social Justice Project (short: ISJP)
8. Eurobarometer (short: EB)

Expert Ratings

9. Shadow economy in OECD countries (short: S&B)
10. Index of democracy (short: VAN)

International Institutes

11. International Crime Victim Survey (short: ICVS)
12. International Country Risk Guide (short: ICRG)

2.2.3 Countries

The study reports on the level of social cohesion in 34 countries of the developed world. These are the 27 member states of the European Union (before the accession of Croatia) and further seven Western countries that are members of the Organization for Economic Cooperation and Development (OECD): Australia, Canada, Israel, New Zealand, Norway, Switzerland, and the US. Table 2 sorts the 34 analyzed countries according to their membership in the EU and the OECD.

Table 2 Studied Countries

EU and OECD			EU Only	OECD Only
Austria	Germany	Poland	Bulgaria	Australia
Belgium	Greece	Portugal	Cyprus	Canada
Czech Republic	Hungary	Slovak Republic	Latvia	Israel
Denmark	Ireland	Slovenia	Lithuania	New Zealand
Estonia	Italy	Spain	Malta	Norway
Finland	Luxembourg	Sweden	Romania	Switzerland
France	Netherlands	United Kingdom		USA

2.2.4 Time periods

The study measures social cohesion over a time period of almost 25 years–from 1989 to 2012–which we divided into four waves (see Table 3) with respect to important societal and political processes that took place in these years. Data from the above listed sources were assigned to the respective waves on the basis of the year in which the data collection began.

Table 3 The four waves

Wave 1	1989 to 1995
Wave 2	1996 to 2003
Wave 3	2004 to 2008
Wave 4	2009 to 2012

Table 4 of Appendix A presents an overview of the data coverage.

2.3 Method

The following section introduces the methods employed. To arrive at dimension scores for the set of countries we combine exploratory and confirmatory techniques in a structural equation modeling framework. Cohesion scores are calculated as the arithmetic mean of the nine dimensions in each wave, assuming a so-called formative index building approach.

2.3.1 Structural Equation Modeling

If the data were perfect, the analyses that the study undertakes to derive country scores for the dimensions of cohesion in each of the four waves could be entirely done in an exploratory mode within a standard statistical software package. To deal more efficiently with missing information, we resorted to M*plus* (Muthen & Muthen, 1998-2011), a sophisticated statistical program, which offers–among other modes of estimation–FIML within its structural equation modeling (SEM) framework.

Typically SEM assumes a confirmatory approach in testing whether a certain hypothesized model of relations among variables fits the data (Byrne, 2012). We need, however, an exploratory strategy (exploratory factor analysis) to select empirically sound measures for the nine dimensions among the ones available in the secondary data sources. Once the most appropriate sets of indicators for the dimensions have been selected on empirical grounds, it is necessary to extract the factor scores for each country on the dimensions as they give the relative country positions we are looking for. Standard statistical software packages such as SPSS are able to extract factor scores already within exploratory factor analysis, but they do not integrate FIML. At the same time, the M*plus* software offers this estimation algorithm, but allows factor score extraction only within its confirmatory factory analysis procedure. This is why we undertake a combined approach of exploratory and confirmatory techniques.
We proceed with a brief theoretical introduction of the methods.

Full-Information Maximum Likelihood

The analyses that lead to the calculation of the country scores on the nine dimensions of social cohesion profit from the application of a powerful parameter estimation method called maximum likelihood.

Maximum likelihood estimation attempts to derive parameter estimates that are most likely to produce the observed data (Enders, 2010). This is done in an iterative process during which the computer improves on the estimates it derived in a previous cycle of calculation. Typically the statistical software is programmed to make a good “guess” on the starting values for the initial

solution, but the researcher can help the process of convergence to an admissible solution by giving reasonably accurate initial estimates of the model parameters (Kline, 2005).

The greatest advantage that the method of maximum likelihood estimation offers is its robustness in dealing with missing data. As mentioned in the previous section, our secondary data analytic approach faces the challenge of occasional unavailability of indicators for some countries across time. If missing data are present, the estimation procedure is called full-information maximum likelihood (FIML). Full-information is appended to the name to emphasize that the estimation algorithm makes full use of the available information in the data rather than discard parts of it. Apart from this, the logic of the estimation remains the same.

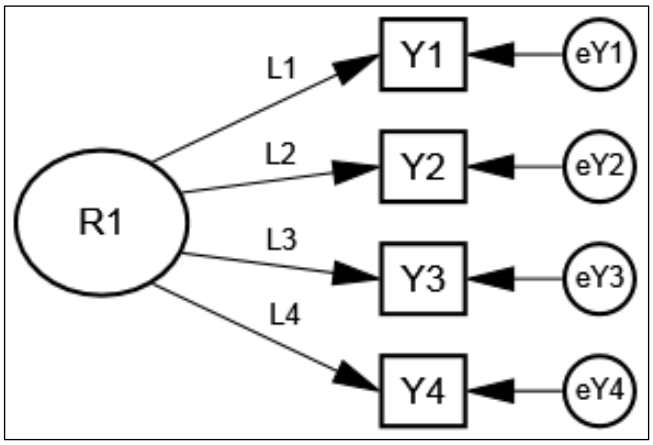
In contrast to "traditional" and by now outdated techniques of handling missing data such as 'listwise deletion' (which can considerably reduce the number of available cases, whereas we deal with 34 countries at most only), 'pairwise deletion' (which may jeopardize the mathematical properties of the covariance matrix), or mean substitution (which reduces items' variability), FIML estimation is considered to be the state-of-the-art missing data handling technique (Enders, 2010). Schafer and Graham (2002) show that FIML produces unbiased parameter estimates if the missing data mechanism is that of 'missing at random' (MAR). FIML is superior to traditional missing data handling techniques also when the data are 'missing completely at random' (MCAR). Even when they are missing not at random (MNAR, the worst scenario), the bias in the parameter estimates remains isolated to only a subset of the estimates rather than to the entire model (Enders, 2010). As a side note we point to an article of Raykov (2011) on the testability of missing data mechanisms. Beside a concise introduction to the three mechanisms, Raykov makes the point that there is no need for preoccupation with distinguishing between MNAR and MCAR as MCAR is not testable, but one can rather increase the plausibility of MAR. Even if MAR is violated, the method of full-information maximum likelihood, particularly when auxiliary variables are used, is robust and yields results comparable to multiple imputation, a much more laborious missing data handling technique (Enders, 2010).

Reflective Measurement Model

Beside unavailability of data for particular countries within a wave, our study faces another challenge also stemming from secondary data. This is now the unavailability of identical indicators (e.g. survey items) across time for the measurement of a dimension. To overcome this issue we turn to reflective measurement models which directly relate to factor analysis and are thus part of SEM where, as we already know, the default estimator is (full-information) maximum likelihood.

Figure 2 gives an example of a reflective measurement model in which a latent construct R1 is measured with observed indicators Y1 to Y4. To reduce the level of abstraction, imagine that we measure intelligence (R1) based on reading ability (Y1), writing ability (Y2), speaking ability (Y3), and mathematics (Y4).

Figure 2 Reflective Measurement Model



The direction of the arrows L1 to L4 in Figure 2 clearly expresses the logic: The indicators depend on the latent variable or in other words, the latent construct R1 determines the manifest indicators Y1 to Y4. To come back to our example, intelligence is the reason for the performance on the four tests. As long as the indicators belong to the "item universe" of a latent construct, they can be considered interchangeable exemplary manifestations of the latent. Of course, removing an indicator may lead to a less reliable measurement of the latent, but this is safeguarded by the fact that only correlating indicators are part of the measurement of a latent construct. Due to the strong associations among each other, these indicators tend to form a unidimensional construct, adding few heterogeneous facets to its measurement (Bollen & Lennox, 1991). Weakly to uncorrelated indicators cannot be part of a reflective measurement model.

Factor Analysis

Reflective measurement directly relates to factor analysis. Put in plain words, factors measure things that are not directly measurable, but are latent (Field, 2009). Measuring acceptance of diversity in a country is different from measuring its annual temperature. We cannot use a thermometer or a ruler to study the degree to which people tolerate others who lead different life styles. Instead we have to assume that acceptance of diversity is a factor, a latent construct, that underlies a pattern of observed attitudes towards various minority groups and is, thus, indirectly measurable through them.

An indication of the extent to which each of the observed indicators (Y1 to Y4 in Figure 2) contributes to the latent factor is given by the factor loading of each observed indicator (L1 to L4). These loadings quantify the strength and direction of association between the indicator and the factor. They can be seen as standardized regression coefficients which take values between -1 and 0 (e.g. a more negative attitude towards right-wing extremists stands for higher acceptance of diversity), or between 0 and 1 (e.g. a more positive attitude towards gays and lesbians stands for higher acceptance of diversity). According to a large-scale meta-analysis (Peterson, 2000), there is agreement in the published literature that absolute factor loadings of 0.25 and above indicate that a particular observed indicator allows a sufficiently potent measurement of a latent. The amount of variation that is left unexplained by the latent is called uniqueness in exploratory factor analysis or error term in confirmatory factor analysis. These are displayed as eY1 to eY4 in Figure 2. They represent the part of variation in the indicators that does not "fit" to the measurement of the latent.

Finally we introduce the concept of factor scores. Factor analysis is in itself a data reduction technique that is able to summarize into a single score the observed values on the indicators for every case in the analysis. In our study a factor score of a country represents its relative position on a dimension with respect to the other countries in the sample. Factor scores can theoretically vary between $-\infty$ and $+\infty$, but in practice one often finds them in the range of ±3.

There are two types of factor analysis: exploratory and confirmatory. Exploratory factor analysis (EFA) is well-suited in situations where the associations between observed indicators and latent variables are unknown (Byrne, 2012). The analysis determines how many factors underlie the pattern of associations between the indicators and to what extent each of the indicators contributes to the factors. For our purposes we use EFA in M*plus* (Muthen & Muthen, 1998-2011) to reduce the number of selected data items that we expect to measure as a dimension at face validity. More precisely, we specify forced one-factor solutions, thereby always extracting the factor that most strongly explains the covariation of the indicators. Indicators that do not load above the threshold on this first factor are disregarded as they tend to belong to other less prominent factors which we assume not to be the dimensions we are looking for. The EFA procedure provides further evidence in support of the interchangeability of indicators across the four waves.

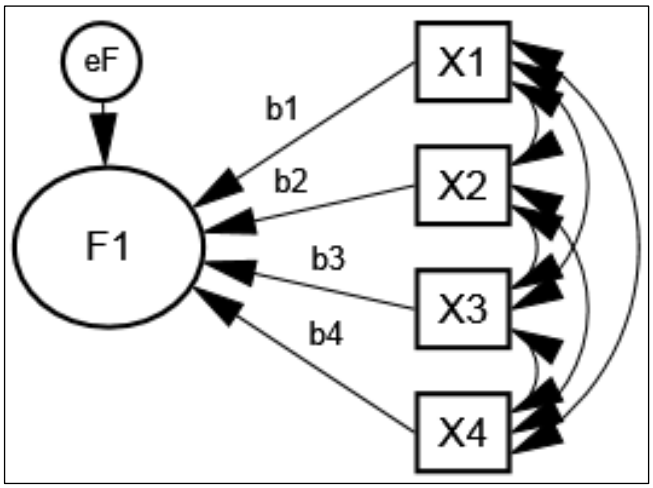
The second type of factor analysis–confirmatory factor analysis (CFA)–is typically used to "confirm" whether a hypothesized factor structure emerges on the basis of the available data. As mentioned, M*plus* (Muthen & Muthen, 1998-2011) is unable to extract factor scores already in the exploratory phase which is the reason why we do this in a CFA procedure. These factor scores are essentially the scores of our 34 countries on every dimension in every wave. CFA offers, in addition, the possibility to modify the factor structure in such a way that it better fits the data. Occasionally we take the advantage to specify error term correlations. If, say, we correlated the error terms of eY1 with eY3, this would indicate another reason beyond the latent R1 for the covariation of indicators Y1 and Y3. It is an exploratory step which is in line with the general exploratory nature of the analyses with the sole purpose to improve the fit of the models to the data. The latter is signaled by numerous goodness-of-fit indices.

As the nature of the study is exploratory, we do not report goodness-of-fit measures. To provide an indication on the quality of the constructed dimensions, we instead resort to Cronbach's alpha coefficient of internal consistency, a commonly used measure for the validity of factor analysis (Manly, 2004). In the practice of psychometrics, a Cronbach's alpha of 0.80 to 0.90 is a desirable absolute threshold. Relative thresholds for Cronbach's alpha (which are more pertinent in the wider social sciences) take into account the length of a 'scale' (=items measuring a latent variable), suggesting that an alpha of 0.10 times the number of its indicators is sufficient (Nunnally, 1967). We take the strategy proposed by Raykov (2008) to calculate Cronbach's alpha directly within a CFA in M*plus*.

Formative Measurement Model

After we have calculated dimension scores for each country in each wave we are set to calculate the overall social cohesion scores of each country in each wave. On theoretical grounds we pose that social cohesion is a nine-dimension construct (see Table 1 and Figure 1). We do not need any empirical ground to legitimate the operationalization, as it is driven by our theoretical premises.

Figure 3 Formative Measurement Model



This stance is in line with the formative index building approach which is graphically depicted in Figure 3. The indicators X1 to X4 determine the latent variable F1 (Bollen & Lennox, 1991). They are its building blocks and each of them contributes a unique facet to its measurement. This is why formative indicators are not interchangeable. Moreover, they need not be correlated among each other as long as there is a sound theoretical basis to justify why they have been "packaged" together. For our study we particularly refer to Bertelsmann Stiftung (2012) for an elaboration on the theory behind our approach to social cohesion.

An example of an established social reporting initiative that takes, in principle[3], a similar road is the Human Development Index (UNDP, 2013).

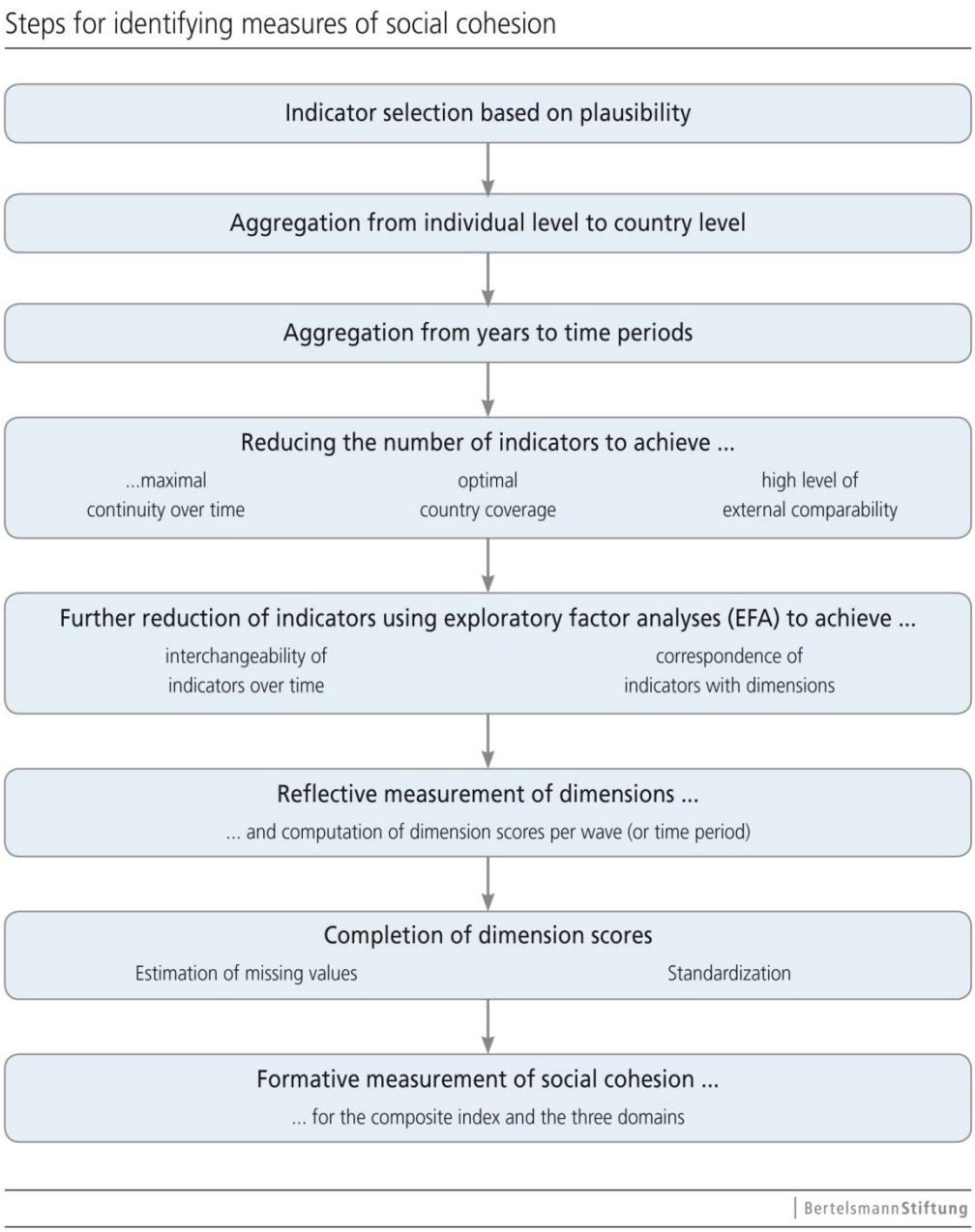
3 Methodological Steps

The current section of the Methods Report deals with the actual methodological steps undertaken and decisions made in preparation of the Social Cohesion Index. Figure 4 shows how the methodological steps in the process build upon each other.

In the following, an account is given of the guiding principles for indicator selection and data preparation techniques, such as aggregation and data transformations. After the compilation of the initial Macro Dataset, a thorough screening of the selected indicators is performed, so that the indicator-case ratio is within acceptable statistical boundaries. After a thorough screening of the available relevant indicators, there is a further reduction of the indicators, based on the results of exploratory factor analyses. As part of the EFA procedure, we test the correspondence of the indicators to a given dimension as well as their interchangeability across time. Based on the results of the EFA procedures, we estimate reflective measurement models for each dimension and wave, which yield the factor scores (dimension scores) for our countries. As a penultimate step of the process, we estimate occurrences of missing values on the dimensions and standardize the newly extracted dimension scores, before entering them into the formative measurement model of social cohesion. In a final step we calculate scores for social cohesion and its domains.

[3] For the HDI, however, a geometrical means approach is employed, while we resort to arithmetically averaging indicators.

Figure 4 Overview of Methodological Steps



3.1 Indicator Selection

The indicator selection was driven by criteria defined in the research proposal: (1) the country coverage of the sources from which the indicators were taken should include most of the EU27 countries and a few selected, politically and economically relevant Western countries (Australia, Canada, Israel, New Zealand, Norway, Switzerland and the US), (2) the sources themselves should comply with international standards for cross-country comparability[4], and (3) indicators should correspond with the guiding principles for the dimensions of social cohesion.

[4] A further criterion was also considered for public opinion surveys: They needed to have representative samples for the country populations.

The first two criteria were met by taking into consideration only such data sources which are internationally established and have a clear policy on cross-country comparability. Additionally, only such sources were considered, where it was clear that the scope of the countries covered included most of the EU27 countries and part of the Western OECD world (for details see Appendix A). The third criterion applies to the face validity of indicators. A measure is considered valid at face, if there is consensus among the involved researchers that the operationalization of the measured phenomenon matches its conceptualization (Neuman, 2003). Typically face validity is seen as a minimal criterion of research measures (Kidder, 1982).

Taking face validity as the basis for our indicator selection meant that the research group identified guiding principles that describe the nine dimensions of social cohesion. These principles are in line with the theoretical premises of the current study which combines insights from the screening study that preceded this research (Bertelsmann Stiftung, 2012), as well as the suggestions of an expert group gathered by the Bertelsmann Foundation.

Following these guiding principles the members of the research group collected a wide set of indicators for each dimension. The selection procedure entailed that any member of the research group could suggest for consideration an indicator for a given dimension if he or she judged it to be in line with the formulated guiding principle. The indicator was retained only if all other members of the research group—independently of each other—agreed on its face validity with respect to the given dimension. As a result of this process, we arrived at a large set of indicators which served as the basis for the further steps of selecting indicators for the construction of the dimensions of social cohesion. The next screening methods applied in the research will be described shortly.

3.2 Data Preparation

Before proceeding to the screening techniques, the initial Macro Dataset that pools the selected indicators together needed to be compiled. Keeping in mind that social cohesion is a characteristic of societies rather than of individuals, readers should note that the Macro Dataset is a country level dataset, with cases being the countries of interest. Typically, however, some indicators were available on the individual level, while some indicators were only available (and only carried meaning) on the country level. Therefore, first, all individual level data were cleaned, recoded on the individual level and then aggregated to the country level.

Cleaning of Individual-Level Data. All indicators were treated for missing values. This involved a deletion of missings on an item per item basis. Although all survey data stem from samples representative of the country populations, this procedure could potentially entail a methodological problem, if missingness did not occurred at random (e.g. due to social desirability bias or non-response to touchy personal questions, which we cannot account for).

Recoding of Individual-Level Data. Once the missing values had been treated, a recoding of the indicators was undertaken. Recoding was necessary for a meaningful aggregation of the individual level data and for a better interpretation of the factor analysis output in later steps. In the course of recoding, several attributes of the indicators were taken into consideration: the level of measurement, the distribution of answers across the answering options, and the correspondence of the values to the meaning of the answering options. If an indicator was of ordinal measurement quality and had at least four categories, it was considered continuous. If an ordinal indicator had only

three categories or if an indicator was nominal, then it was dichotomized with respect to the most relevant category. If an indicator originally had a reversed scale for a question or statement with a positive wording, we recoded the scale, so that a higher value stands for a higher agreement with the statement or question posed.

Aggregation of Individual-Level Data. Once the indicators were treated for missings and re-coded in the manner explained above, the aggregation of individual-level data to the country level was performed by taking the country average[5] (arithmetic mean) of the respective indicators.
Aggregation from Years to Waves (Country Level). Initially, once all indicators were expressed on the country level, they stored information about countries on a yearly basis. Since the time of the fieldwork in the different countries could differ, the year the data point was associated with was the year the fieldwork began in a given country. Aggregating observation years to waves is justified by the fact that social cohesion is a societal level phenomenon and as such, drastic changes in social cohesion from one year to the next are hardly expected. Additionally, data availability for the set of studied countries on a yearly basis is limited. Therefore, we identified four waves with respect to the timing of socio-historical processes that took place in our set of countries. If data on a particular indicator exist for multiple years within a wave, we took the average of the data points available for that given indicator. Last, the data were standardized applying regular *z*-standardization and stored in the so-called wide format, where each row uniquely represents a country, whereas the columns contain data on the indicators for each wave.

Given the wide format, from now on the term "indicator" refers to an item-wave constellation. For example, d12_pplfair_ess_w2, d12_pplfair_ess_w3, and d12_pplfair_ess_w4 store data on an item “pplfair” from the European Social Survey (ESS) for Waves 2, 3, and 4, respectively. The prefix d12 further shows that this item belongs to Dimension 12, Trust in People. In contrast, the term "unique indicator" refers to—in the current example—d12_pplfair_ess, thereby signifying that this item for Dimension 12 can be found only in the ESS. For more details on data coverage and the exact transformations of the indicators which entered the construction of the social cohesion indices, please refer to the Codebook for International Comparison.

3.3 Construction of Dimensions

Once the preparation of the data is complete, the next steps involve narrowing down the selection of items, assessing whether the selected items indeed belong to the dimensions of interest, and testing whether there is continuity in the meaning of the dimensions over time. These steps were achieved by the use of various tools, which are elaborated in the following sections of the Methods Report.

3.3.1 Indicator Screening (Reduction of Indicators)

The initial dataset that we compiled after the indicator selection consisted of 598 indicators (or 297 unique indicators) for the 34 analyzed countries. Often the number of indicators available per dimension per wave was two to three times higher than what would have been statistically appropriate (based on the rule of thumb of Cattell (1966), the number of variables should not be

[5] During the course of the research other measures, such as median or standard deviation were considered appropriate to represent a country for a given indicator. However, from a conceptual point of view and for comparability and consistency reasons, we opted for the use of means. Distributional measures other than means (measures of dispersion, in particular) often tend to have vastly different mathematical properties than arithmetic means, a fact that would have greatly complicated reflective index building.

more than a third of the number of cases). While this is an impressive number of indicators, any statistical analysis taking all of them with such a limited number of cases (34 countries) cannot be considered methodologically sound. Thus, our first and foremost task after the data preparation was to screen the indicators in order to arrive at a manageable selection that could then be used to estimate the dimensions of social cohesion.

We developed a set of criteria to select the most viable indicators for estimating the dimensions of social cohesion; viable in the sense that the indicators are reliable measures for the dimensions they are associated with, but also ensure relatively good data coverage and are available for more than one wave. Hence, the following criteria were considered simultaneously:

1. Country Coverage
2. Continuity
3. Test of Sameness

Country Coverage. The criterion ensures that the indicators have the best country coverage, so that the estimation of the scores makes use of the most information available. Even though FIML methods help deal with incomplete data coverage, there are certain thresholds beyond which the analyses yield inadmissible solutions. In M*plus* the so-called covariance coverage should not be lower than 0.10. As a general principle, we disregarded indicators that cover less than 11 countries (approximately one third of our sample size).

Continuity. Another aspect to consider was the comparability of a certain dimension over the four periods. While we applied sophisticated statistical techniques to test the comparability of dimensions across waves in the later stages of the analysis (see Pantemporal EFA), this criterion helped us ground and pave the way for a successful start. Such a criterion was only developed, once it was clear that the selected data were rich enough to allow dispensing those items that were not repeated over at least two waves.

Test of Sameness. Such a criterion was especially crucial for indicators stemming from surveys. Many of the selected indicators appeared to be worded in an identical or very similar way and therefore needed to be thoroughly screened. We identified "parcels" to help with the screening. A "parcel" consisted of indicators where either the wording of the questions was identical, but there was a difference in the answering format, or the wording of the questions was—only—similar. To check whether the identically or similarly worded indicators can indeed be taken as interchangeable with one another, we investigated their correlations[6] in the "parcel". Once it was concluded that the variables' correlations were at least moderately strong (above 0.4), the indicator with the most valid cases was chosen to represent the parcel in further analyses. In reality, the strength of the correlations was on average 0.74 and only six were below 0.5.

After this intense screening of the indicators, only 287 indicators remain in our dataset, which meant that there were 124 unique indicators.

[6] Here we already made use of the factor analytical framework applied throughout the project. In order to preserve all information possible, indicators in a "parcel" were raised to latent constructs and only then the correlations were calculated. This is essentially the same procedure as simply correlating the manifest indicators with one another. The main difference is that by correlating manifest variables, listwise deletion is needed; our procedure avoids this. See Section 3.3.4, Completion of Dimension Scores, for an elaboration on the strategy.

3.3.2 Further Reduction of Indicators (Exploratory Factor Analysis)

The screening process described above yields optimal data coverage which allows us to proceed to the construction of the dimensions of social cohesion. The further steps include, first, an exploratory factor analysis (EFA) per dimension per wave, followed by a 'pantemporal' exploratory factor analysis for each dimension. The theoretical considerations behind these methodological steps stem from the assumption that the dimensions are latent variables, which are only measurable through their manifestations in observed indicators. These manifest indicators are the ones that we selected and screened previously. Both EFA procedures serve us to further curb the selection of items and help us make sure that the indicators used to construct the dimension scores truly reflect a given dimension of social cohesion, also across the four waves.

EFA per Dimension per Wave. Before the EFA, the indicators are attributed to the respective dimensions, based on their subjectively judged face validity. However, the EFA allows us to review and validate our initial decisions as guided by face validity considerations and dispose of any indicators which are in fact not 'caused' by a given dimension. In order to assess whether the selected indicators belong to the assumed latent constructs, several EFAs are conducted[7]. The factor loadings produced by the EFAs are taken as a criterion for the decision as to which indicators to retain. In all EFAs per dimension per wave, the following criterion was used:

> The absolute value of the (standardized) factor loadings of each indicator needed to be equal to or larger than 0.25[8]

We further took into consideration that the final factor solution should not have more than eleven indicators per dimension per wave, a limitation stemming from the small number of analyzed countries.

Once the factor structures were established for each of the dimensions and waves, the next step was to ensure that the indicators were interchangeable across time. In order to do so, a so-called pantemporal EFA was conducted.

Pantemporal EFA. The aim of the pantemporal EFA is to ensure that the different indicators used in the different waves of a given dimension correspond with one another or, in other words, they are interchangeable. This step also ensures the correspondence with the general dimension of per-wave-per-dimension models, where one or two indicators were available only. Our approach to test the interchangeability of the indicators across the waves of a dimension is challenged by the fact that we have all in all 34 countries (cases) for four waves (4x11 indicators possible). This is why we opted for reshaping the original wide format of the data set to a long one, the latter being typical for multi-level designs. Following such a strategy we essentially collapsed the item-wave indicator constellations to unique ones. Disregarding the multi-level structure of the data (countries at Level 2, waves at Level 1) we arrived at a pooled dataset with 136 cases (4x34). The pooled

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7 … if there are three or more indicators per dimension per year available. Unfortunately, there are instances when there are only one or two indicators and then no EFA can be conducted, as the model would be unidentified. This is especially the case in Wave 1,sometimes in Wave 2 and at one instance in Wave 4

8 Neutral-descriptive indicators, which were present in three or four waves, were exempt of this rule if in at least two waves they had a factor loading higher than 0.25. Such an exemption is done once for Vanhanen's indicator of political participation (see Codebook: d33_part_van). The EFA loadings were 0.19 (Wave 1), 0.327 (Wave 2), 0.418 (Wave 3), 0.327 (Wave 4).

dataset is the basis of an exploratory factor analysis[9] for each dimension in all waves. Thereby we test whether all the unique indicators that were retained in the per-dimension-per-wave EFAs fit the pantemporal latent construct. The interpretation is similar to that of the previous EFA: It tells us, whether each of the unique indicators represents a pantemporal version of the dimension in question. Again, only those variables were retained, which met our criteria. Corresponding with the previous thresholds, the following criteria were applied to retain an indicator or not:

> The absolute value of the (standardized) factor loadings for each indicator needed to be equal to or larger than 0.25

After these procedures, 147 indicators remain in our dataset, which means that we now have 67 unique indicators.

3.3.3 Extraction of Dimension Scores (Confirmatory Factor Analysis)

The concluding step to arrive at the final dimension structures is to switch to the framework of confirmatory factor analysis (CFA). The main aim of this methodological step is to fit uni-factorial structures on our data, based on the EFAs conducted previously. The framework is used solely as a tool to extract dimension scores for the calculation of the cohesion scores.

In principle, the fitting of the dimensions was straightforward, as the prior procedures ensured that the dataset at this point was cleaned of indicators that did not sufficiently belong to the dimensions. We, thus, inserted the remaining indicators for each dimension-wave constellation into a confirmatory factor analysis. Occasionally we took the advantage of specifying error term correlations in order to improve the factor structure. Similarly as before, the standardized factor loadings were taken into consideration. Corresponding with our previous practice, the absolute value of the (standardized) factor loadings for each indicator needed to be equal to or larger than 0.25[10].

Solving Identification Issues. As previously mentioned, EFAs are not able to estimate factor structures with one or two indicators as such models are unidentified due to negative degrees of freedom. However, the CFA framework allows us to introduce constraints on the parameters to make the models identified. Such a situation occurs when there are one or two items per dimension per wave. In the case of a single-indicator solution, we constrain its factor loading to 1 and its measurement error to 0. When two indicators are available, it is enough to constrain the factor loadings of both indicators to 1, thereby giving each an equal weight.

For final factor solutions in each wave and dimension see Tables 5 to 13 of Appendix B. Beside factor loadings, we present Cronbach's alpha coefficients for each dimension in a given wave. In all instances the alpha coefficients suggest a reliable measurement, with the slight exception of Dimension 21, Identification, in Wave 4.[11]

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[9] Sometimes the covariance coverage (the amount of non-missing information) falls below the default M*plus* limit of 0.10. In such cases missing data are substituted with the mean of the variable over waves within each country.

[10] Again, similar to the EFAs, the neutral-descriptive indicators which were present in three or four waves were exempt from this threshold if at least in two waves they had a factor loading higher than 0.25. Such an exemption was needed once for Vanhanen's indicator of political participation (see Codebook: d33_part_van), where the loadings were 0.18 (Wave 1), 0.21 (Wave 2), 0.39 (Wave 3), 0.43 (Wave 4).

[11] A fairly low consistency coefficient of 0.15 is obtained for Dimension 21, Identification, in Wave 4 with its mere two items. Several arguments lead us to nevertheless accept this as sufficient. First of all, a two-item 'scale' with an alpha of 0.15 would yield an alpha around 0.50 (in line with the so-called Spearman-Brown formula) had there been another six items of the same quality available (Nunnally, 1967; the longest 'scales' in the current study encompass eight indicators). At the same time retaining the two-item measurement of Dimension 21 in Wave 4 allowed us to

In addition, we repeated the pantemporal EFA with the final selection of items as a CFA. Relevant output is available in Tables 14 to 16. Again we present Cronbach's alpha coefficients for each "pantemporal" dimension. In all instances—even in Dimension 21—Cronbach's alpha suggests reliable measurement.

Questions of Discriminant Validity. Discriminant validity of the dimensions would ensure that the dimensions of social cohesion do not 'hang together' or converge. A proper test of discriminant validity, i.e. including all selected indicators in one analysis expecting no item to load on a dimension other than its own, is not possible in a straightforward way because this would overstretch the possibilities given by the small sample size of our study. Additionally, our theoretical approach does in fact include the possibility that the dimensions of social cohesion be related to each other. However, in order to make sure that the definition of the nine dimensions does not redundantly overlap with other dimensions, a post hoc test was undertaken. We took the highest loading item from its own dimension and tested whether it loads higher on any of the other dimensions. The results of these crossloadings are summarized in Table 17 of Appendix B for the most recent wave. Loadings in bold italics refer to the loading of the respective item on its own dimension. The evidence suggests that highest loading items of one dimension load on average 0.21 less (median difference) on other dimensions. Only in one out of 72 cases does an item load more highly on another dimension in Wave 4. This finding offers preliminary evidence that the dimensions are by no means redundant: They are clearly correlated, but that is at the same time what they should be as they are all to measure social cohesion.

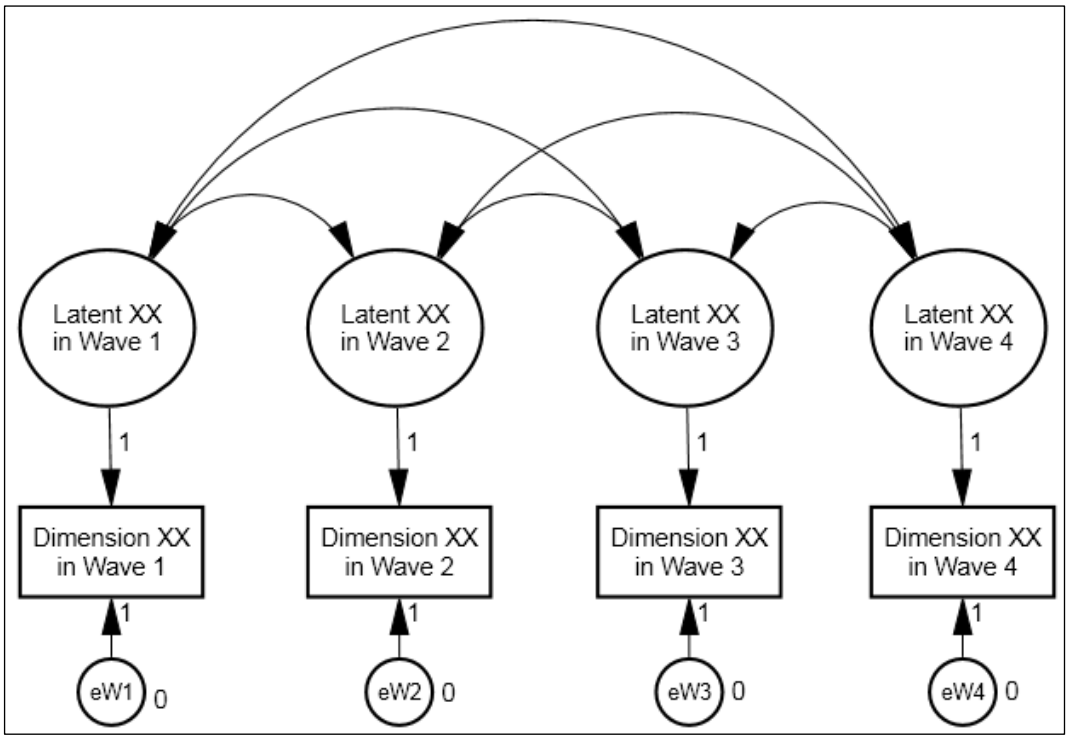
3.3.4 Completion of Dimension Scores

Due to missing information on the indicators that belong to the dimensions, that is, some countries not having been covered with any data for a given dimension in a given wave, not all countries receive factor scores, that is, scores on the dimensions.

Again relying on FIML and with an application of a very effective workaround suggested in the literature (Enders, 2010), we are able to close these gaps. Missing dimension scores in a wave are estimated on the basis of available dimension scores from other waves. Indeed, this sounds as if we predict the weather for yesterday on the basis of the weather for the day after tomorrow. However, this procedure is more reliable than any other alternative that involves mere copy-pasting of data from other time periods. We, of course, clearly mark any estimated dimension score in the presented results.

broaden the concept of Identification in the later waves based on data from the Gallup World Poll (GWP). This was particularly import as the 'pride' indicator from the World Values Survey was not available for Wave 4. Thus, not using the GWP item would have reduced the Wave 4 measure to a single-indicator measurement, something we tried to avoid if by any means possible.

Figure 4 Refining the dimension scores



Within a dimension, we recast the extracted scores from each wave as sole manifest indicators of latent variables. This can be seen as if we treated the manifest indicators as outcomes, while at the same time their exogenous status in the model is preserved. Factor loadings are constrained to 1, which transfers the metric of the observed variable to the latent one, whereas the residual variances are constrained to zero, which transfers the variance of the observed variable to the latent one (Enders, 2010; see Figure 5). Since each latent variable predicts the observed and all possible correlations between the four latent variables are explicated, any missing data point on the observed variables is estimated for the latent ones on the basis of the correlations among the four waves. It is important to note that this recasting from the manifest to the latent level does not change the model: It still remains a fully saturated one.

The factor scores on the latent variables are then saved. The values in each dimension and wave come out with a mean of zero but with different standard deviations. The 34 values for each dimension and wave are then standardized (essentially by dividing each value through the standard deviation) to reach final dimension scores with a standard deviation of 1 and a mean of 0 (which they already had). This ensures a good relative comparison of values across waves and across dimensions. These are the final variables which represent the dimensions of cohesion as they are named in the dataset

- d11w1, d12w1,d13w1,d21w1,d22w1,d22w1,d23w1, d31w1, d32w1, d33w1
- d11w2, d12w1,d13w2,d21w2,d22w2,d22w2,d23w2, d31w2, d32w2, d33w2
- d11w3, d12w3,d13w3,d21w3,d22w3,d22w3,d23w3, d31w3, d32w3, d33w3
- d11w4, d12w4,d13w4,d21w4,d22w4,d22w4,d23w4, d31w4, d32w4, d33w4

From these values we construct all further measurements, all rankings, and all descriptions and visualizations in the report.

We show the values for all countries in Wave 4 (2009-2012) in Table 18, for Wave 3 (2004-2008) in Table 19, for Wave 2 (1996-2003) in Table 20, and for Wave 1 in Table 21 of Appendix B. These tables report the same five colored groups as in the report, but include the actual scores.

3.4 Construction of Cohesion Scores

Based on the formative measurement model the cohesion scores are built as the arithmetic mean of the nine dimension scores. In the same way domain scores are built by averaging the three dimensions of the domain.

These are the variables

- cohesion_w1, d1w1, d2w1, d3w1
- cohesion_w2, d1w2, d2w2, d3w2
- cohesion_w3, d1w3, d2w3, d3w3
- cohesion_w4, d1w4, d2w4, d3w4

in the dataset. The cohesion scores are shown for all countries in Wave 4 (2009-2012) in Table 18, for Wave 3 (2004-2008) in Table 19, for Wave 2 (1996-2003) in Table 20, and for Wave 1 in Table 21 of Appendix B. The ranking of countries is based on the cohesion scores. These tables report the ranking figures in the report without the grouping.

Cohesion scores are not standardized after their compilation. Therefore their standard deviation is less than one. If all dimension values where uncorrelated and normally distributed the standard deviation of the average over these nine variables would be mathematically: .

Empirically, the standard deviations are 0.68 (Wave 1), 0.72 (Wave 2), 0.77 (Wave 3), and 0.76 (Wave 4). The fact that the standard deviations of cohesion scores are larger than 0.33, emphasizes that dimensions are correlated (as should be the case).

3.5 Presentation of Scores in the Report

To avoid an over-interpretation of tiny differences and ranking positions we decided to group countries into five groups based on their values: the top group, the upper midfield, the mid group, the lower midfield and the bottom group. To ensure relative comparison across waves and dimensions we always used the uniform boundaries -0.84, -0.25, 0.25, 0.84 between the groups. The rationale for these thresholds is that with these values groups were equally large with 20% of the countries in each when the values were normally distributed with a mean of 0 and a standard deviation one of 1.

Based on this assumption we should expect six countries in the mid group and seven countries in the other groups. As our dimension scores do have a mean of 0 and standard deviation one of 1, the only reason why group sizes differ from this is random fluctuation due to low sample size and non-normality of the distribution.

The cohesion score is grouped upon the same thresholds, although it has a standard deviation lower than one, because this yields a better comparison to the dimension scores.
Figure 6 of Appendix B shows the distribution of the 34 countries and their densities for the cohesion score and all dimensions in all four waves. A comparison to the normal distribution with a standard deviation of 1 is shown. It turns out empirically that the distributions of cohesion scores are bimodal in all waves. That means many countries cluster in the upper as well as in the lower midfield, while the mid group is comparably small. Bimodality is most strongly present for the aggregate cohesion score but only in a few dimensions and there only in some waves.

4 Descriptive Analyses

The "Social Cohesion Radar" report documents similarity and correlation analyses on which the description of dimension and country characteristics as well as country clustering is based. These similarity and correlation analyses were based mainly on graphical representations derived from distance matrices by using multidimensional scaling (MDS), and by inspection of correlation matrices.

Distance matrices were computed for dimensions and countries. The distance between two countries is the length of the line between their positions in the nine-dimensional space. It is computed as the square root of the sum of the squared differences of the nine dimension scores. In two- and three- (instead of nine-) dimensional space this represents the length of the line between the two points measured with a ruler. This distance is also called Euclidean distance. The Euclidean distance between two dimensions within a wave is the length of the line between them in 34-dimensional space. Table 23 shows the pairwise distances of all dimensions from all waves, thus it measures the distances of all the columns in Tables 18 to 21, except for the cohesion score column (as it is an aggregation of all) of Table 18. Table 24 shows the pairwise distances of all countries in Wave 4, thus it measures the distances of all rows in Table 18 (based only on the nine dimensions, neglecting the cohesion score).

MDS can be used to find a two-dimensional configuration in space which matches the distances in the distance matrix best. These configurations where computed with the function `cmdscale`[12] from statistics package R (R Core Team, 2012), `stats`-package Version 2.15.1. The function uses the principal coordinate analysis with the distance matrix as an input.

Correlation is a similar concept. The Pearson correlation coefficient between two dimensions is the covariance of them divided by the standard deviations of the dimensions. The same computation can be done analog for two countries. This way, we computed the correlations of all dimensions in all waves as shown in Table 25. Correlations of all countries in Wave 4 are shown in Table 26. The correlation coefficient achieves its maximum 1.0, when there is a perfect linear relationship between the dimensions (countries), that means when in one dimension a country scores high, it also scores comparably high in the other dimension (respectively, when a country is high in a dimension the other country also scores comparably high in this dimension). The minimum -1.0 (sometimes called 'anticorrelation') is achieved if the relationship between the two dimensions (countries) is the

[12] Online Documentation: http://stat.ethz.ch/R-manual/R-devel/library/stats/html/cmdscale.html

other way round, e.g. countries are anticorrelated when one country scores high on one dimension, the other country scores low.

4.1 Analysis of Relations of Dimensions

The left column in Figure 7 shows the two-dimensional representation (computed by MDS) of the distances of the nine dimensions in each wave. The picture for Wave 4 clearly shows that all dimensions, except for d13 (Acceptance of Diversity) and d21 (Identification) lie close together. This structure repeats in Wave 3. Dimension d21 stays far away from the others also in earlier waves, while d13 joins a cluster with d31 (Solidarity and Helpfulness) and d32 (Respect for Social Rules) in Wave 2 and the cluster of seven other dimensions in Wave 1. Instead of d13, d22 (Trust in Institutions) makes a difference, but to a lesser extent. In Wave 1 it is d33 (Civic Participation), which makes a difference to other dimensions besides Identification.

Looking at correlations the picture is confirmed, with an even stronger emphasis on Identification, being by and large a dimension uncorrelated with the other dimensions. Acceptance of Diversity correlates with the other dimensions in Wave 1 with coefficients around 0.4, which also holds for Trust in Institutions in Wave 2. Civic Participation in Wave 1 has only a weak correlation with the other dimensions instead. Comparing correlations within dimensions across waves mostly yields values above 0.7. Only for Civic Participation some instability (reduced correlations across time) is incurred.

Anticorrelation of dimensions is essentially absent. This confirms that the choice of dimensions measures the formative construct of social cohesion well. Although formative indices need not be correlated empirically to ‘make sense,’ because they are grounded in theory, negative correlations (anticorrelations) among dimensions nevertheless might undermine the conceptual plausibility of the formative index.

4.2 Country Clusters Based on Similarity

The right column in Figure 3 shows the two-dimensional representation (computed by MDS) of the distances of the 34 countries in each wave. From this picture the country clusters—especially the three top clusters “Scandinavia”, “Anglo-Saxon Immigrant Countries” and “Alpine Countries plus Luxemburg”—were visually extracted for the picture for Wave 4 by also taking geographical and cultural relationships partly into account. These clusters are, thus, not validated by a test, but set by us. The clustering into the eight groups led to the computation of average scores of these groups as shown in Table 22: Scores of country clusters for Wave 4, which is the basis of a corresponding figure in the report. These clusters are also used to order the distance and correlation matrices in Tables 24 and 26.

Going back to Waves 3, 2, and 1 shows us that many clusters decompose, while some more or less prevail.

Looking at correlations between countries (only provided for Wave 4) shows that within a cluster, also no correlation or even weak anticorrelation is observed. The clusters where correlations are high between countries are in particular “Netherlands, Belgium, Germany, United Kingdom” and “Bulgaria, Greece, Cyprus”; and to a lesser extend “Scandinavia” and “Anglo-Saxon Immigrant Countries” (with the USA having the weakest correlations to others). Anti-correlation is rampant

between countries. Most striking is the almost perfect anticorrelation (0.99) between Bulgaria and the Netherland. Also between the countries of their groups the anticorrelation is high.

5 Resumé

By providing readers of the Cohesion Radar with a detailed report on the procedure as to how we arrived at the social cohesion scores published in the report, we intend to convince readers that a sound methodology was used. We presume, however, that readers who did take the time to read the detailed elaborations in this Methods Report, will expect more beyond the proof of methodological soundness, and will resort to citing the famous saying that the 'proof of the pudding is in the eating.'

We as authors of the Social Cohesion Radar Study and of its Methods Report are perfectly aware that soundly constructing a new internationally valid social indicator is not enough. We need to prove that it is worthy of forming the basis for a better understanding of the social reality, and of subsequently serving as a tool to improve the social cohesion of geopolitical entities.

In the Cohesion Radar report on the international comparison of social cohesion, we offer first evidence that our new—from a certain perspective hyper-complex—indicator does measure something 'real' by showing that it correlates highly and in a plausible way with a number of measures from other fields, like the Human Development Index or the Knowledge Index (World Bank, 2012).

In future work we will on the one hand offer similar evidence for intra-German comparisons, but will also offer more comprehensive analyses of society-level correlates of social cohesion, will try to elaborate on driving forces of (positive and negative) change in social cohesion, and will delve into individual-level predictors (like value preferences and value consensus) and consequences of social cohesion (like happiness, well-being, and educational attainment).

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7 Appendices

Appendix A offers a concise overview of the data sources. Appendix B presents relevant technical output.

7.1 Appendix A: Data Sources and Coverage

Surveys

1. World Values Survey (WEVS; source: WVS, 2009)
   The World Values Survey is carried out by a worldwide network of social scientists. It focuses on values and their effects on the social and political aspects of life. The WVS stems from the European Values Study (EVS, see below). The EVS and WVS together cover five waves from 1981 to 2007. Altogether the WVS covers about 90 countries around the world. The survey is administered to a representative sample of the population in each country. A detailed documentation on its methodology is available on the survey website: http://www.worldvaluessurvey.org/. Data access is free of charge.

2. European Values Study (WEVS; source: EVS, 2011)
   The European Values Study is a survey project on the topic of human values (ideas, beliefs, preferences, attitudes and opinions) that is carried out by the eponymous Foundation. The survey has been administered approximately every nine years since 1981 in an increasing number of European countries. For example, its fourth wave from the year 2008 covers 48 countries and regions. The survey is based on representative samples of the population. Thanks to the correspondence between the items in the WVS and EVS we are able to combine both (WEVS). A detailed documentation on its methodology is available on the survey website: http://www.europeanvaluesstudy.eu/. Data access is free of charge.

3. Gallup World Poll (GWP; source: GWP, 2013)
   The Gallup World Poll is carried out by the Gallup Organization, one of the world leaders among the market and opinion research institutes. The GWP has been administered on an annual basis since 2005 to representative samples of the population of about 150 countries, covering a span of political, economic and social topics. A detailed documentation on its methodology is available here: http://www.gallup.com/poll/105226/world-poll-methodology.aspx. Data access is not free of charge.

4. European Social Survey (ESS; source: ESS, 2012)
   The academic European Social Survey is carried out in 32 countries in Europe and beyond in order to describe long-term changes in the attitudes and behavior of Europeans. The survey was initiated in 2001 by the European Science Foundation and has been administered to representative samples of the population on a biannual basis. It examines perceptions, attitudes and self-descriptions by the European population on a multitude of topics that are relevant for

present-day Europe: e.g. migration, trust, political orientations, value preferences, subjective well-being and health. A detailed documentation on its methodology is available here: http://www.europeansocialsurvey.org/. Data access is free of charge.

5. European Quality of Life Survey (EQLS; source: EQLS, 2006; EQLS, 2009; EQLS, 2013)
   The European Quality of Life Survey is a project by Eurofound that examines a multitude of life aspects: among others, income, education, family, health, life satisfaction and perceptions of society. The survey was administered for the first time in 2003 in 28 countries. Two consecutive waves followed in 2007 and 2011. The survey is based on representative samples of the population. A detailed documentation on its methodology is available here: http://www.eurofound.europa.eu/areas/qualityoflife/eqls/2007/methodology.htm. Data access is free of charge.

6. International Social Survey Programme (ISSP; source: ISSP, 1994; ISSP, 2002; ISSP, 2012)
   The International Social Survey Programme was initiated in cooperation between the former Centre for Survey Research and Methodology (ZUMA) in Mannheim and the National Opinion Research Center at the University of Chicago. Nowadays it is a worldwide cooperative of institutes that carry out surveys on social science topics. The ISSP follows an annual program that adds international and intercultural components (modules) to the single national surveys of 48 countries around the world. The module “Social Inequality” from the years 1992, 1999, and 2009 is particularly useful for our purposes. A detailed documentation on its methodology is available from the GESIS Data catalogue: http://zacat.gesis.org/webview/. Data access is free of charge.

7. International Social Justice Project (ISJP; source: ISJP, 2002)
   The international Social Justice Project is an international research initiative that studies the social, economic and political aspects of justice. In 1991 the survey covered representative samples from 12 countries, in 1996 only six, in later years even less. Due to its limited country coverage we use the ISJP as a supplement of the ISSP. More information on the survey can be obtained from its website: http://www.isjp.de/. Data access is free of charge.

8. Eurobarometer (EB; source: EB, 2012)
   The Eurobarometer surveys commenced in 1973. Since then they have been carried out in half-year intervals by request of the European Commission. The surveys are based on representative samples of the population in the European Union member states. The topics span across social and political attitudes that are of considerable importance for the strategies and policies of the European Union. Only few items asked at irregular intervals relate to aspects of cohesion in smaller geo-political entities than the EU. Thus the Eurobarometer can help only the measurement of the dimension “Identification”. A detailed documentation of its methodology is available here: http://ec.europa.eu/public_opinion/description_en.htm. Data access is free of charge.

Expert ratings

9. Shadow Economy in OECD countries (S&B) A study by Schneider and Buehn (2012) provides an estimate on the extent of the shadow economy in the OECD countries. Since the shadow economy cannot be accounted for by calculations for the national economy, it has been measured with indicators such as taxation, attitudes to taxation, unemployment, and free enterprise. Data are available for the period 1995 to 2010 for a number of countries.

10. Index of Democracy (VAN; Vanhanen, 2011)
    A unique database on the development of democracies for the period between 1810 to 2010 has been put together by Tatu Vanhanen. For our purposes we use the indicator “participation” which measures the level of participation of the population in elections and referenda.

International institutes

11. International Crime Victim Survey (ICVS; source: ICVS, 2010)
    The international Crime Victim Survey was first administered in 1989 with the aim to evaluate the criminal situation in the participating countries on the basis of representative samples of their population. Altogether five waves have been collected so far. The survey studies perceptions and attitudes towards crime and justice. A detailed documentation of its methodology is available here: http://www.unicri.it/services/library_documentation/publications/icvs/. Data access is free of charge.

12. International Country Risk Guide (ICRG; source: van Kesteren, 2007)
    The International Country Risk Guide was established by the editors of “International Reports” in 1980 and is developed nowadays by the Political Risk Services Group. Their aim is to inform business people on the investment risks in selected countries stemming from social and political risks such as ethnic and religious tensions as well as corruption. A detailed documentation of its methodology is available here: http://www.prsgroup.com/ICRG_methodology.aspx. Data access is not free of charge

Table 4 Country Coverage across Time

	Wave 1 (1989–1995)											Wave 2 (1996–2003)											Wave 3 (2004–2008)											Wave 4 (2009–2012)										
	WEVS	EQLS	ESS	GWP	EB	ISSP	ISJP	ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB	ISSP	ISJP	ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB	ISSP	ISJP	ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB	ISSP	ISJP	ICRG	S&B	ICVS	VAN
Australia	WEVS							ICRG		ICVS	VAN						ISSP		ICRG	S&B	ICVS	VAN	WEVS			GWP				ICRG	S&B		VAN				GWP		ISSP		ICRG	S&B		VAN
Austria	WEVS				EB			ICRG			VAN	WEVS	EQLS	ESS		EB	ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS		GWP	EB	ISSP		ICRG	S&B		VAN
Belgium	WEVS				EB			ICRG		ICVS	VAN	WEVS	EQLS	ESS		EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Bulgaria	WEVS						ISJP	ICRG			VAN	WEVS	EQLS				ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Canada	WEVS							ICRG		ICVS	VAN	WEVS					ISSP		ICRG	S&B	ICVS	VAN	WEVS			GWP				ICRG	S&B		VAN				GWP				ICRG	S&B		VAN
Cyprus								ICRG			VAN		EQLS				ISSP		ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Czech Republik	WEVS						ISJP	ICRG		ICVS	VAN	WEVS	EQLS	ESS			ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Denmark	WEVS				EB			ICRG			VAN	WEVS	EQLS	ESS		EB			ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Estonia	WEVS						ISJP			ICVS	VAN	WEVS	EQLS						ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Finland	WEVS				EB			ICRG		ICVS	VAN	WEVS	EQLS	ESS		EB			ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
France	WEVS				EB			ICRG			VAN	WEVS	EQLS	ESS		EB	ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Germany	WEVS				EB		ISJP	ICRG			VAN	WEVS	EQLS	ESS		EB	ISSP		ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Greece					EB			ICRG			VAN	WEVS	EQLS	ESS		EB			ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB			ICRG	S&B		VAN
Hungary	WEVS						ISJP	ICRG			VAN	WEVS	EQLS	ESS			ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Ireland	WEVS				EB			ICRG			VAN	WEVS	EQLS	ESS		EB			ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB			ICRG	S&B		VAN
Israel								ICRG			VAN	WEVS		ESS			ISSP		ICRG			VAN			ESS	GWP				ICRG			VAN			ESS	GWP		ISSP		ICRG			VAN
Italy	WEVS				EB			ICRG		ICVS	VAN	WEVS	EQLS	ESS		EB			ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS		GWP	EB	ISSP		ICRG	S&B		VAN
Latvia	WEVS										VAN	WEVS	EQLS				ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS		GWP	EB	ISSP		ICRG	S&B		VAN
Lithuania	WEVS										VAN	WEVS	EQLS						ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS		GWP	EB			ICRG	S&B		VAN
Luxembourg					EB			ICRG			VAN	WEVS	EQLS	ESS		EB			ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS		GWP	EB			ICRG	S&B		VAN
Malta	WEVS							ICRG			VAN	WEVS	EQLS						ICRG	S&B	ICVS	VAN	WEVS	EQLS		GWP				ICRG	S&B		VAN		EQLS		GWP				ICRG	S&B		VAN
Netherlands	WEVS				EB		ISJP	ICRG		ICVS	VAN	WEVS	EQLS	ESS		EB			ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB			ICRG	S&B		VAN
New Zealand								ICRG		ICVS	VAN	WEVS					ISSP		ICRG	S&B		VAN	WEVS			GWP				ICRG	S&B		VAN				GWP		ISSP		ICRG	S&B		VAN
Norway	WEVS							ICRG			VAN	WEVS		ESS			ISSP		ICRG	S&B		VAN	WEVS	EQLS	ESS	GWP				ICRG	S&B	ICVS	VAN			ESS	GWP		ISSP		ICRG	S&B		VAN
Poland	WEVS						ISJP	ICRG		ICVS	VAN	WEVS	EQLS	ESS			ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Portugal	WEVS				EB			ICRG			VAN	WEVS	EQLS	ESS		EB			ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Romania	WEVS							ICRG			VAN	WEVS	EQLS						ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS		GWP	EB			ICRG	S&B		VAN
Slovakia	WEVS						ISJP	ICRG		ICVS	VAN	WEVS	EQLS						ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Slovenia	WEVS						ISJP			ICVS	VAN	WEVS	EQLS	ESS			ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B		VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Spain	WEVS				EB					ICVS	VAN	WEVS	EQLS	ESS		EB	ISSP			S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB				S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP			S&B		VAN
Sweden	WEVS				EB			ICRG		ICVS	VAN	WEVS	EQLS	ESS		EB	ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
Switzerland	WEVS							ICRG			VAN	WEVS		ESS					ICRG	S&B	ICVS	VAN	WEVS		ESS	GWP				ICRG	S&B		VAN			ESS	GWP		ISSP		ICRG	S&B		VAN
United Kingdom	WEVS				EB		ISJP	ICRG			VAN	WEVS	EQLS	ESS		EB	ISSP		ICRG	S&B	ICVS	VAN	WEVS	EQLS	ESS	GWP	EB			ICRG	S&B	ICVS	VAN		EQLS	ESS	GWP	EB	ISSP		ICRG	S&B		VAN
United States	WEVS						ISJP	ICRG			VAN	WEVS					ISSP		ICRG	S&B	ICVS	VAN	WEVS			GWP				ICRG	S&B		VAN				GWP		ISSP		ICRG	S&B		VAN

7.2 Appendix B: Technical Output

7.2.1 Final CFA Factor Loadings

Table 5 CFA for Final Factor Solution, D11 – Social Networks

D11 – SOCIAL NETWORKS		
Variable	Label	Loading
Wave 1, Cronbach's α = n.a.		
d11_a002_wevs_w1	Important in life: friends	1
Wave 2, Cronbach's α = 0.820		
d11_sclmeet_ess_w2	How often socially meet with friends, relatives or colleagues	0.823
d11_sprtsrsmtr_eqls_w2	Support if needed advice on serious personal or family matter	0.78
d11_a002_wevs_w2	Important in life: friends	0.723
Wave 3, Cronbach's α = 0.817		
d11_fltlnl_ess_w3	How much time during past week you felt lonely	-0.833
d11_a002_wevs_w3	Important in life: friends	0.829
d11_wp27_gwp_w3	Count on to help	0.705
d11_sclmeet_ess_w3	How often socially meet with friends, relatives or colleagues	0.631
d11_sprtsrsmtr_eqls_w3	Support if needed advice on serious personal or family matter	0.4
Wave 4, Cronbach's α = 0.738		
d11_wp27_gwp_w4	Count on to help	0.897
d11_q46b_eqls_w4	How much time during past week you felt lonely	-0.783
d11_sprtsrsmtr_eqls_w4	Support if needed advice on serious personal or family matter	0.502
d11_sclmeet_ess_w4	How often socially meet with friends, relatives or colleagues	0.468

Table 6 CFA for Final Factor Solution, D12 – Trust in People

D12 – TRUST IN PEOPLE		
Variable	Label	Loading
Wave 1, Cronbach's α = n.a.		
d12_a165_wevs_w1	People can be trusted	1.000
Wave 2, Cronbach's α = 0.935		
d12_pplfair_ess_w2	People try to be fair	0.955
d12_pplhlp_ess_w2	Most of the time people helpful	0.941
d12_a165_wevs_w2	People can be trusted	0.850
Wave 3, Cronbach's α = 0.947		
d12_pplfair_ess_w3	People try to be fair	0.983
d12_pplhlp_ess_w3	Most of the time people helpful	0.931
d12_a165_wevs_w3	People can be trusted	0.887
Wave 4, Cronbach's α = 0.950		
d12_pplfair_ess_w4	People try to be fair	0.989
d12_pplhlp_ess_w4	Most of the time people helpful	0.914
d12_wp9039_gwp_w4	People can be trusted	0.903

Table 7 CFA for Final Factor Solution, D13 – Acceptance of Diversity

D13 – ACCEPTANCE OF DIVERSITY		
Variable	Label	Loading
Wave 1, Cronbach's α = 0.798		
d13_f118_wevs_w1	Justifiable: homosexuality	0.880
d13_ethten_icrg_w1	Rating of ethnic tension (high score, low tension)	0.747
d13_reliten_icrg_w1	Rating of religious tension (high score, low tension)	0.733
d13_a12406_wevs_w1	Would not like to have neighbor: immigrants/ foreign workers	-0.551
d13_a12402_wevs_w1	Would not like to have neighbor: of different race	-0.523
Wave 2, Cronbach's α = 0.877		
d13_a12402_wevs_w2	Would not like to have neighbor: of different race	-0.941
d13_a12406_wevs_w2	Would not like to have neighbor: immigrants/ foreign workers	-0.903
d13_reliten_icrg_w2	Rating of religious tension (high score, low tension)	0.836
d13_freehms_ess_w2	Gays and lesbians free to live life as they wish	0.595
d13_ethten_icrg_w2	Rating of ethnic tension (high score, low tension)	0.434
d13_imueclt_ess_w2	Country's cultural life enriched by immigrants	0.277
Wave 3, Cronbach's α = 0.855		
d13_wp103_gwp_w3	City/area good place for: Racial/ethnic minorities	0.893
d13_a12406_wevs_w3	Would not like to have neighbor: immigrants/ foreign workers	-0.864
d13_a12402_wevs_w3	Would not like to have neighbor: of different race	-0.834
d13_wp105_gwp_w3	City/area good place for: Gay or lesbian people	0.788
d13_freehms_ess_w3	Gays and lesbians free to live life as they wish	0.520
d13_imueclt_ess_w3	Country's cultural life enriched by immigrants	0.502
d13_reliten_icrg_w3	Rating of religious tension (high score, low tension)	0.501
d13_ethten_icrg_w3	Rating of ethnic tension (high score, low tension)	0.334
Wave 4, Cronbach's α = 0.684		
d13_q27c_eqls_w4	Country's culture undermined by immigrants	-0.815
d13_reliten_icrg_w4	Rating of religious tension (high score, low tension)	0.787
d13_wp103_gwp_w4	City/area good place for: Racial/ethnic minorities	0.600
d13_ethten_icrg_w4	Rating of ethnic tension (high score, low tension)	0.541
d13_wp105_gwp_w4	City/area good place for: Gay or lesbian people	0.445
d13_freehms_ess_w4	Gays and lesbians free to live life as they wish	0.270

Table 8 CFA for Final Factor Solution, D21 – Identity

D21 – IDENTITY		
Variable	Label	Loading
Wave 1, Cronbach's α = 0.875		
d21_g006_wevs_w1	How proud of nationality	0.887
d21_attach_eb_w1	How attached to country	0.877
Wave 2, Cronbach's α = 0.910		
d21_g006_wevs_w2	How proud of nationality	0.926
d21_attach_eb_w2	How attached to country	0.902
Wave 3, Cronbach's α = 0.705		
d21_attach_eb_w3	How attached to country	0.865
d21_g006_wevs_w3	How proud of nationality	0.596
d21_wp1325_gwp_w3	Ideally, would permanently move to another country	-0.512
Wave 4, Cronbach's α = 0.152		
d21_attach_eb_w4	How attached to country	0.843
d21_wp1325_gwp_w4	Ideally, would permanently move to another country	-0.477

Table 9 CFA for Final Factor Solution, D22 – Trust in Institutions

D22 – TRUST IN INSTITUTIONS		
Variable	Label	Loading
Wave 1, Cronbach's α = 0.752		
d22_e069_06_wevs_w1	Confidence in police	0.952
d22_e069_17_wevs_w1	Confidence in justice system	0.614
d22_poldang_icvs_w1	Didn't report a crime, because feared/did not like the police	-0.527
Wave 2, Cronbach's α = 0.776		
d22_e069_07_wevs_w2	Confidence in parliament	0.938
d22_e069_12_wevs_w2	Confidence in political parties	0.849
d22_poldang_icvs_w2	Didn't report a crime, because feared/did not like the police	-0.686
d22_e069_06_wevs_w2	Confidence in police	0.563
d22_e069_17_wevs_w2	Confidence in justice system	0.298
Wave 3, Cronbach's α = 0.904		
d22_wp138_gwp_w3	Confidence in judicial system	0.861
d22_wp144_gwp_w3	Honesty of elections	0.839
d22_e069_07_wevs_w3	Confidence in parliament	0.829
d22_wp112_gwp_w3	Confidence in local police	0.821
d22_wp140_gwp_w3	Confidence in health care	0.794
d22_e069_12_wevs_w3	Confidence in political parties	0.791
d22_wp141_gwp_w3	Confidence in financial institutions	0.663
d22_poldang_icvs_w3	Didn't report a crime, because feared/did not like the police	-0.277
Wave 4, Cronbach's α = 0.937		
d22_trstprl_eqls_w4	Trust in parliament	0.976
d22_trstprt_ess_w4	Trust in political parties	0.937
d22_wp138_gwp_w4	Confidence in judicial system	0.889
d22_wp112_gwp_w4	Confidence in local police	0.816
d22_wp144_gwp_w4	Honesty of elections	0.786
d22_wp140_gwp_w4	Confidence in health care	0.678
d22_wp141_gwp_w4	Confidence in financial institutions	0.637

Table 10 CFA for Final Factor Solution, D23 – Perception of Fairness

D23 – PERCEPTION OF FAIRNESS		
Variable	Label	Loading
Wave 1, Cronbach's α = 0.593		
d23_v162bi_isjp_w1	Get paid about what deserved	0.650
d23_corr_icrg_w1	Corruption (high score, low corruption)	0.648
Wave 2, Cronbach's α = 0.880		
d23_v17_issp_w2	To get ahead need to be corrupt	-0.904
d23_tnsnrp_eqls_w2	Tensions between the rich and the poor	-0.819
d23_corr_icrg_w2	Corruption (high score, low corruption)	0.760
d23_q30b_eqls_w2	To get ahead, forced to do things that are not correct	-0.741
d23_pjustbi_issp_w2	Pay about just for me	0.685
d23_gincdif_ess_w2	Government should reduce differences in income levels	-0.657
d23_v13bi_issp_w2	I earn what I deserve	0.642
Wave 3, Cronbach's α = 0.894		
d23_wp145_a_gwp_w3	Corruption within businesses	-0.938
d23_corr_icrg_w3	Corruption (high score, low corruption)	0.916
d23_q30b_eqls_w3	To get ahead, forced to do things that are not correct	-0.730
d23_gincdif_ess_w3	Government should reduce differences in income levels	-0.683
d23_tnsnrp_eqls_w3	Tensions between the rich and the poor	-0.559
Wave 4, Cronbach's α = 0.917		
d23_v17_issp_w4	To get ahead need to be corrupt	-0.938
d23_wp145_a_gwp_w4	Corruption within businesses	-0.902
d23_gincdif_ess_w4	Government should reduce differences in income levels	-0.886
d23_corr_icrg_w4	Corruption (high score, low corruption)	0.855
d23_tnsnrp_eqls_w4	Tensions between the rich and the poor	-0.696
d23_v13bi_issp_w4	I earn what I deserve	0.683
d23_pjustbi_issp_w4	Pay about just for me	0.612

Table 11 CFA for Final Factor Solution, D31 – Solidarity and Helpfulness

D31 – SOLIDARITY AND HELPFULNESS		
Variable	Label	Loading
Wave 1, Cronbach's α = n.a.		
d31_e037_wevs_w1	Government provide for people (vs. people for themselves)	-1.000
Wave 2, Cronbach's α = 0.470		
d31_hlpppl_ess_w2	Help others excl. work/voluntary organizations	0.557
d31_e037_wevs_w2	Government provide for people (vs. people for themselves)	-0.552
Wave 3, Cronbach's α = 0.837		
d31_wp108_gwp_w3	Donated money	0.969
d31_hlpoth_ess_w3	Help others excl. family/work/voluntary organizations	0.795
d31_wp110_gwp_w3	Helped a stranger	0.779
d31_e037_wevs_w3	Government provide for people (vs. people for themselves)	-0.384
Wave 4, Cronbach's α = 0.933		
d31_wp110_gwp_w4	Helped a stranger	0.924
d31_q22a_eqls_w4	Unpaid voluntary work through community and social services	0.909
d31_wp108_gwp_w4	Donated money	0.890

Table 12 CFA for Final Factor Solution, D32 – Respect for Social Rules

D32– RESPECT FOR SOCIAL RULES		
Variable	Label	Loading
Wave 1, Cronbach's α = n.a.		
d32_safestreet_icvs_w1	Feel safe after dark on the street	1.000
Wave 2, Cronbach's α = 0.738		
d32_safestreet_icvs_w2	Feel safe after dark on the street	0.770
d32_shadow_sb_w2	Size of shadow economy	-0.760
Wave 3, Cronbach's α = 0.801		
d32_q24_2_eqls_w3	To what extent people obey traffic laws	0.913
d32_shadow_sb_w3	Size of shadow economy	-0.751
d32_wp113_gwp_w3	Feel safe walking alone at night	0.581
Wave 4, Cronbach's α = 0.871		
d32_trfowr_ess_w4	How wrong to commit traffic offense	-0.947
d32_shadow_sb_w4	Size of shadow economy	-0.836
d32_wp113_gwp_w4	Feel safe walking alone at night	0.699

Table 13 CFA for Final Factor Solution, D33 – Civic Participation

D33 – CIVIC PARTICIPATION		
Variable	Label	Loading
Wave 1, Cronbach's α = 0.676		
d33_a004_wevs_w1	Important in life: politics	0.876
d33_e025_wevs_w1	Signed a petition	0.644
d33_e023_wevs_w1	Interest in politics	0.592
d33_part_van_w1	Voting turnout in elections or referenda	0.180
Wave 2, Cronbach's α = 0.831		
d33_wrkorg_ess_w2	Worked in association or organisation	0.911
d33_ctpltcn_eqls_w2	Contacted politician or public official	0.907
d33_badge_ess_w2	Worn or displayed campaign badge/sticker	0.658
d33_q23b_eqls_w2	Served on committee or done voluntary work for organization	0.658
d33_a004_wevs_w2	Important in life: politics	0.570
d33_e025_wevs_w2	Signed a petition	0.557
d33_e023_wevs_w2	Interest in politics	0.378
d33_part_van_w2	Voting turnout in elections or referenda	0.205
Wave 3, Cronbach's α = 0.875		
d33_e025_wevs_w3	Signed a petition	0.937
d33_wrkorg_ess_w3	Worked in association or organisation	0.854
d33_wp109_gwp_w3	Volunteered time to organization	0.799
d33_badge_ess_w3	Worn or displayed campaign badge/sticker	0.768
d33_e023_wevs_w3	Interest in politics	0.649
d33_wp111_gwp_w3	Voiced opinion to public official	0.643
d33_a004_wevs_w3	Important in life: politics	0.457
d33_part_van_w3	Voting turnout in elections or referenda	0.392
Wave 4, Cronbach's α = 0.864		
d33_wrkorg_ess_w4	Worked in association or organisation	0.874
d33_q23c_eqls_w4	Signed a petition	0.773
d33_badge_ess_w4	Worn or displayed campaign badge/sticker	0.755
d33_polintr_ess_w4	Interest in politics	0.680
d33_wp111_gwp_w4	Voiced opinion to public official	0.673
d33_wp109_gwp_w4	Volunteered time to organization	0.595
d33_part_van_w4	Voting turnout in elections or referenda	0.430

7.2.2 Overview of Pantemporal Analysis

Table 14 Pantemporal EFA for Final Factor Solution, Domain Social Relations

	SOCIAL RELATIONS	
Variable	Label	Loading
Dimension 11 – Social Networks, Cronbach's α = 0.881		
d11_wp27_gwp	Count on to help	0.758
d11_q46b_eqls	How much time during past week you felt lonely	-0.836
d11_sclmeet_ess	How often socially meet with friends, relatives or colleagues	0.650
d11_sprtsrsmtr_eqls	Support if needed advice on serious personal or family matter	0.524
d11_a002_wevs	Important in life: friends	0.825
d11_fltlnl_ess	How much time during past week you felt lonely	-0.837
Dimension 12 – Trust in People, Cronbach's α = 0.951		
d12_wp9039_gwp	People can be trusted	0.904
d12_pplfair_ess	People try to be fair	0.991
d12_pplhlp_ess	Most of the time people helpful	0.914
d12_a165_wevs	People can be trusted	0.836
Dimension 13 – Acceptance of Diversity, Cronbach's α = 0.891		
d13_wp103_gwp	City/area good place for: Racial/ethnic minorities	0.878
d13_wp105_gwp	City/area good place for: Gay or lesbian people	0.846
d13_ethten_icrg	Rating of ethnic tension (high score, low tension)	0.320
d13_freehms_ess	Gays and lesbians free to live life as they wish	0.764
d13_q27c_eqls	Country's culture undermined by immigrants	-0.433
d13_reliten_icrg	Rating of religious tension (high score, low tension)	0.501
d13_a12402_wevs	Would not like to have neighbor: of different race	-0.891
d13_a12406_wevs	Would not like to have neighbor: immigrants/ foreign workers	-0.894
d13_f118_wevs	Justifiable: homosexuality	0.514
d13_imueclt_ess	Country's cultural life enriched by immigrants	0.483

Table 15 Pantemporal EFA for Final Factor Solution, Domain Connectedness

		CONNECTEDNESS
Variable	Label	Loading
Dimension 21 – Identification, Cronbach's α =0.690		
d21_wp1325_gwp	Ideally, would permanently move to another country	0.250
d21_g006_wevs	How proud of nationality	0.834
d21_attach_eb	How attached to country	-0.800
Dimension 22 – Trust in Institutions, Cronbach's α = 0.947		
d22_wp112_gwp	Confidence in local police	0.825
d22_wp138_gwp	Confidence in judicial system	0.901
d22_wp140_gwp	Confidence in health care	0.729
d22_wp141_gwp	Confidence in financial institutions	0.674
d22_wp144_gwp	Honesty of elections	0.795
d22_trstprl_eqls	Trust in parliament	0.949
d22_trstprt_ess	Trust in political parties	0.935
d22_e069_06_wevs	Confidence in police	0.757
d22_e069_07_wevs	Confidence in parliament	0.685
d22_e069_12_wevs	Confidence in political parties	0.681
d22_e069_17_wevs	Confidence in justice system	0.762
d22_poldang_icvs	Didn't report a crime, because feared/did not like the police	-0.511
Dimension 23 – Perception of Fairness, Cronbach's α =0.933		
d23_wp145_a_gwp	Corruption within businesses	0.922
d23_corr_icrg	Corruption (high score, low corruption)	-0.856
d23_gincdif_ess	Government should reduce differences in income levels	0.782
d23_pjustbi_issp	Pay about just for me	-0.703
d23_tnsnrp_eqls	Tensions between the rich and the poor	0.616
d23_v13bi_issp	I earn what I deserve	-0.668
d23_v17_issp	To get ahead need to be corrupt	0.902
d23_q30b_eqls	To get ahead, forced to do things that are not correct	0.637
d23_v162bi_isjp	Get paid about what deserved	-0.876

Table 16 Pantemporal EFA for Final Factor Solution, Domain Orientation towards the Common Good

	ORIENTATION TOWARDS THE COMMON GOOD	
Variable	Label	Loading
Dimension 31 – Solidarity and Helpfulness, Cronbach's α = 0.907		
d31_wp108_gwp	Donated money	0.900
d31_wp110_gwp	Helped a stranger	0.877
d31_q22a_eqls	Unpaid voluntary work through community and social services	0.906
d31_e037_wevs	Government provide for people (vs. people provide for themselves)	-0.418
d31_hlpoth_ess	Help others excl. family/work/voluntary organizations	0.802
d31_hlpppl_ess	Help others excl. work/voluntary organizations	0.733
Dimension 32 – Respect for Social Rules, Cronbach's α = 0.873		
d32_wp113_gwp	Feel safe walking alone at night	0.880
d32_shadow_sb	Size of shadow economy	-0.611
d32_trfowr_ess	How wrong to commit traffic offense	-0.687
d32_q24_2_eqls	To what extent people obey traffic laws	0.651
d32_safestreet_icvs	Feel safe after dark on the street	0.938
Dimension 33 – Civic Participation, Cronbach's α = 0.907		
d33_wp109_gwp	Volunteered time to organization	0.707
d33_wp111_gwp	Voiced opinion to public official	0.663
d33_badge_ess	Worn or displayed campaign badge/sticker	0.729
d33_part_van	Voting turnout in elections or referenda	0.385
d33_polintr_ess	Interest in politics	0.675
d33_q23b_eqls	Served on committee or done voluntary work for organization	0.556
d33_q23c_eqls	Signed a petition	0.817
d33_wrkorg_ess	Worked in association or organisation	0.865
d33_a004_wevs	Important in life: politics	0.537
d33_ctpltcn_eqls	Contacted politician or public official	0.650
d33_e023_wevs	Interest in politics	0.506
d33_e025_wevs	Signed a petition	0.840

7.2.3 Discriminant Validity

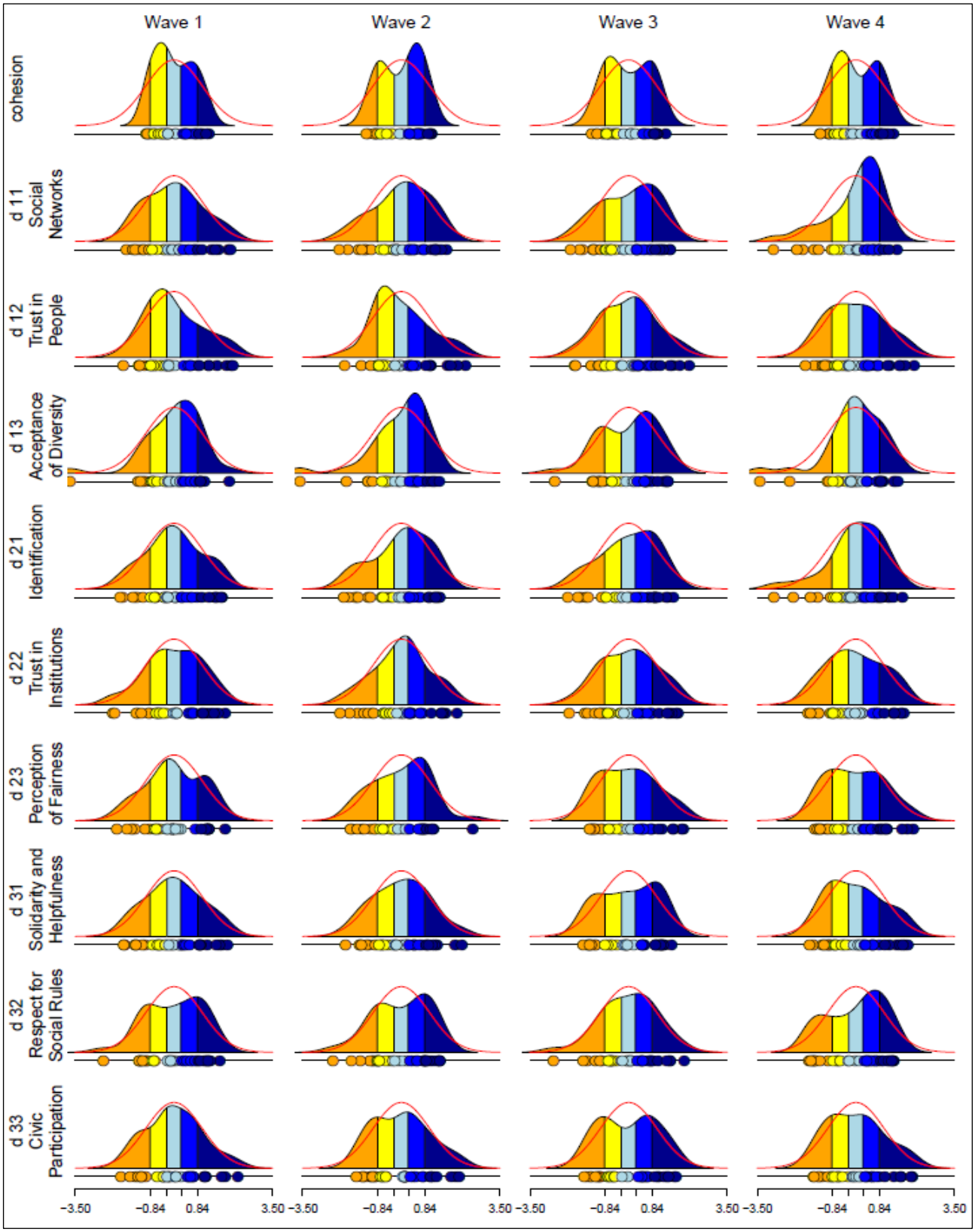
Table 17 Discriminant Validity, Crossloadings of the highest loading item from each dimension

	d11_wp27 _gwp_w4	d12_pplfair _ess_w4	d13_q27c _eqls_w4	d21_attach _eb_w4	d22_trstprl _eqls_w4	d23_v17 _issp_w4	d31_wp110 _gwp_w4	d32_trfowr _ess_w4	d33_wrkorg _ess_w4
D11 - Social Networks	***0.897***	0.920	-0.472	-0.289	0.856	-0.797	0.795	-0.865	0.729
D12 - Trust in People	0.695	***0.989***	-0.656	-0.245	0.929	-0.837	0.661	-0.664	0.791
D13 - Acceptance of Diversity	0.663	0.708	***-0.815***	-0.468	0.764	-0.743	0.637	-0.691	0.676
D21 - Identity	nc	nc	nc	***0.843***	nc	nc	nc	nc	nc
D22 - Trust in Institutions	0.661	0.955	-0.459	-0.145	***0.976***	-0.867	0.630	-0.694	0.885
D23 - Perception of Fairness	0.651	0.928	-0.445	-0.168	0.961	***-0.938***	0.750	-0.623	0.820
D31 - Solidarity and Helpfulness	0.632	0.717	-0.202	-0.122	0.732	-0.799	***0.924***	-0.616	0.569
D32 - Respect for Social Rules	0.826	0.839	-0.491	-0.431	0.930	-0.588	0.630	***-0.947***	0.730
D33 - Civic Participation	0.713	0.935	-0.535	-0.242	na	-0.844	0.830	-0.781	***0.874***

Note. nc (Non-convergence) signals that the newly added item (i.e., the highest loading one from another dimension) virtually 'destroys' the prior factor solution, suggesting that it does not fit into this dimension; na (non-admissible) signals that although the analysis converged with the newly added item, it produced a non-admissible (>1) factor loading.

7.2.4 Grouping of Dimension Scores

Figure 5 Densities of cohesion and dimension scores in each wave subdivided into the five subgroups



Note: Red lines show the normal distribution for comparison. The dots below the densities show the actual 34 cohesion and dimension values for all countries. (Density estimation made with R-function density with Gaussian kernels with bandwidths chosen by Silverman's rule of thumb.)

7.2.5 Cohesion Ranking Tables

Table 18 Cohesion Ranking Table and Dimension Scores Wave 4 (2009-2012)

	Country	*cohe-sion_w4*	d11w4	d12w4	d13w4	d21w4	d22w4	d23w4	d31w4	d32w4	d33w4
1	Denmark	*1.32*	1.45	2.06	0.87	1.64	1.61	2.03	0.60	0.31	1.35
2	Norway	*1.16*	0.82	1.75	0.78	0.19	1.69	1.64	0.61	0.97	2.00
3	Finland	*1.05*	0.80	1.58	1.37	0.82	1.31	0.55	0.57	0.89	1.59
4	Sweden	*0.95*	0.58	1.54	1.45	-0.18	1.58	0.96	0.17	0.52	1.95
5	New Zealand	*0.89*	0.84	0.79	0.90	0.27	0.80	1.82	1.56	0.68	0.36
6	Australia	*0.88*	0.99	0.53	0.97	1.13	0.69	0.85	1.73	0.48	0.52
7	Canada	*0.83*	0.60	0.77	0.95	0.93	0.79	1.05	1.44	0.73	0.18
8	United States	*0.82*	0.09	0.45	0.74	0.84	-0.04	0.76	1.67	1.27	1.58
9	Switzerland	*0.65*	0.58	1.12	-0.61	0.55	1.36	1.08	0.33	1.15	0.33
10	Luxembourg	*0.62*	0.42	-0.30	1.35	-0.24	1.38	0.90	0.08	1.28	0.71
11	Netherlands	*0.58*	0.84	1.21	-0.25	-2.22	1.00	1.10	1.19	1.30	1.02
12	Ireland	*0.54*	1.17	0.35	0.44	0.77	-0.26	0.10	1.84	0.61	-0.13
13	Austria	*0.52*	0.65	-0.03	-0.28	0.60	0.69	0.26	0.84	1.35	0.59
14	Germany	*0.39*	0.65	0.42	0.14	-0.90	0.58	0.32	0.31	1.14	0.81
15	United Kingdom	*0.24*	0.84	0.30	0.40	-1.62	0.12	0.55	1.02	0.39	0.12
16	France	*-0.07*	0.12	0.22	-0.77	-0.48	0.11	-0.40	-0.75	0.78	0.59
17	Spain	*-0.11*	0.42	-0.23	0.28	-0.69	-0.23	0.08	-0.37	-0.27	0.00
18	Belgium	*-0.20*	0.41	0.40	-0.68	-2.92	0.22	0.44	-0.44	0.38	0.37
19	Estonia	*-0.32*	-0.52	0.72	-0.45	0.01	-0.03	-0.10	-0.95	-0.70	-0.85
20	Malta	*-0.33*	0.07	-0.99	-0.77	-0.37	0.21	-0.49	0.24	-0.82	-0.08
21	Poland	*-0.33*	0.16	-0.54	0.25	0.68	-0.62	-0.75	-0.74	-0.55	-0.91
22	Slovenia	*-0.42*	0.30	-1.10	0.13	0.33	-0.91	-1.29	-0.51	-0.23	-0.48
23	Czech Republic	*-0.47*	-0.05	-0.44	0.08	-1.37	-0.81	-0.47	-0.96	0.39	-0.65
24	Italy	*-0.49*	-0.77	-0.67	-0.07	-0.09	-0.83	-0.46	-0.26	-0.99	-0.27
25	Hungary	*-0.53*	-0.65	-0.73	0.04	0.31	-0.53	-1.46	-0.87	-0.04	-0.84
26	Portugal	*-0.57*	-0.87	-0.65	0.83	-0.06	-0.75	-0.64	-0.73	-1.27	-1.01
27	Slovakia	*-0.65*	0.03	-1.12	-0.89	-0.26	-0.82	-0.99	-1.14	0.12	-0.76
28	Israel	*-0.77*	-0.03	-0.25	-3.47	0.41	-0.47	-0.86	-0.07	-1.51	-0.64
29	Cyprus	*-0.77*	-1.90	-1.49	-2.19	1.32	-0.33	-0.30	0.06	-1.48	-0.60
30	Lithuania	*-0.93*	-0.24	-0.34	-0.11	-0.52	-1.70	-1.37	-1.19	-1.42	-1.51
31	Latvia	*-0.97*	-1.33	-1.19	-0.63	-0.20	-1.34	-1.05	-1.01	-0.63	-1.33
32	Bulgaria	*-0.97*	-1.48	-1.35	-0.11	1.19	-1.33	-1.38	-1.50	-1.56	-1.20
33	Greece	*-1.26*	-2.09	-1.78	-0.94	0.89	-1.52	-1.22	-1.65	-1.66	-1.31
34	Romania	*-1.28*	-2.92	-1.03	0.26	-0.78	-1.62	-1.26	-1.10	-1.60	-1.49

Note. Values in hatched cells have been estimated from all other waves.

Table 19 Cohesion Ranking Table and Dimension Scores Wave 3 (2004-2008)

	Country	cohe-sion_w4	d11w3	d12w3	d13w3	d21w3	d22w3	d23w3	d31w3	d32w3	d33w3
1	Denmark	1.31	1.46	2.15	0.82	0.92	1.75	1.93	0.97	0.77	1.05
2	Norway	1.02	1.47	1.81	1.01	0.02	1.43	0.81	0.18	0.78	1.67
3	Finland	0.99	1.25	1.56	0.37	0.33	1.67	1.88	-0.19	1.45	0.63
4	Sweden	0.98	1.21	1.46	1.40	-0.07	1.07	1.57	0.46	0.49	1.26
5	New Zealand	0.96	0.51	0.80	1.27	0.95	0.30	1.59	1.12	0.50	1.62
6	Switzerland	0.91	1.10	1.13	0.53	-0.34	1.35	0.77	1.21	1.47	0.93
7	Australia	0.90	0.72	0.65	1.33	1.40	0.08	0.84	1.27	0.45	1.38
8	Canada	0.89	1.01	0.34	1.39	0.91	0.51	1.19	0.96	0.66	1.05
9	United States	0.73	0.83	0.21	0.61	1.05	-0.18	0.36	0.95	1.34	1.41
10	Ireland	0.64	1.12	0.74	0.67	1.33	0.41	0.03	1.06	0.06	0.39
11	Luxembourg	0.57	0.29	0.19	0.81	-0.23	1.54	0.54	0.51	0.78	0.69
12	Austria	0.53	0.38	0.39	-1.28	0.41	0.80	0.42	1.18	1.97	0.55
13	Netherlands	0.51	0.78	0.95	0.59	-2.15	0.66	1.05	1.17	1.04	0.47
14	United Kingdom	0.26	0.95	0.34	0.68	-1.44	0.00	0.53	1.13	-0.23	0.34
15	Belgium	0.16	0.58	0.27	0.53	-1.71	0.75	0.18	-0.06	0.45	0.47
16	France	0.09	0.25	0.15	-0.09	-0.85	0.20	0.47	-0.12	0.10	0.66
17	Spain	0.06	0.28	-0.26	1.30	0.26	0.20	0.08	-0.84	0.06	-0.50
18	Germany	0.06	0.29	0.35	0.34	-1.80	-0.31	-0.27	0.55	0.86	0.50
19	Malta	-0.18	-0.65	-0.68	-1.03	0.12	0.43	-0.05	1.51	-1.02	-0.24
20	Cyprus	-0.40	-0.46	-0.78	-1.18	0.94	0.82	-0.30	-0.42	-1.48	-0.73
21	Slovenia	-0.40	0.06	-0.63	-1.26	0.49	-0.27	-0.70	-0.06	-0.72	-0.51
22	Portugal	-0.45	-0.99	-0.82	0.50	0.85	-0.02	-0.43	-1.32	-0.64	-1.18
23	Israel	-0.52	-0.21	0.07	-2.67	-0.47	-0.75	-0.71	0.47	0.30	-0.71
24	Italy	-0.56	-0.14	-1.07	0.19	-0.86	-0.74	-1.13	-0.10	-1.19	-0.03
25	Estonia	-0.68	-0.80	0.13	-1.17	-0.50	-0.64	-0.30	-1.46	-0.42	-0.98
26	Poland	-0.70	-0.68	-0.95	-0.95	0.74	-1.01	-1.21	-0.59	-0.55	-1.14
27	Hungary	-0.73	-1.25	-0.90	0.12	0.68	-0.86	-1.26	-1.17	-0.60	-1.36
28	Slovakia	-0.79	-0.60	-1.05	-0.66	-0.96	-1.04	-1.39	-0.75	-0.06	-0.64
29	Czech Republic	-0.80	-0.83	-0.35	-1.02	-1.52	-0.97	-0.59	-0.64	-0.71	-0.56
30	Greece	-0.90	-1.28	-1.91	-0.87	1.59	-0.85	-0.94	-1.21	-1.62	-1.04
31	Latvia	-0.92	-1.62	-0.22	-0.56	-0.28	-1.46	-0.97	-1.44	-0.64	-1.05
32	Romania	-1.11	-2.06	-1.89	-0.47	-0.01	-1.20	-1.36	-1.39	-0.05	-1.58
33	Bulgaria	-1.13	-1.22	-1.33	-0.22	0.96	-1.56	-1.35	-1.35	-2.66	-1.48
34	Lithuania	-1.30	-1.75	-0.84	-1.01	-0.80	-2.11	-1.27	-1.62	-0.95	-1.33

Note. Values in hatched cells have been estimated from all other waves.

Table 20 Cohesion Ranking Table and Dimension Scores Wave 2 (1996-2003)

	Country	cohe-sion_w4	d11w2	d12w2	d13w2	d21w2	d22w2	d23w2	d31w2	d32w2	d33w2
1	Norway	1.06	1.62	1.98	0.53	0.27	1.97	1.36	-0.05	0.17	1.71
2	Denmark	1.06	1.16	2.27	0.83	0.68	0.33	2.46	0.91	0.78	0.11
3	Sweden	1.03	1.43	1.74	1.37	0.13	0.66	0.74	1.09	0.86	1.28
4	United States	0.97	1.22	0.23	0.61	1.22	0.28	0.75	0.90	1.35	2.17
5	Netherlands	0.75	0.54	1.04	1.21	-1.54	1.47	0.88	1.25	1.11	0.76
6	Canada	0.72	1.07	0.27	0.67	0.99	0.32	1.04	0.42	0.84	0.82
7	New Zealand	0.68	0.77	0.98	1.12	0.98	-1.18	1.13	0.26	1.00	1.03
8	Australia	0.62	0.67	0.53	0.58	1.28	0.67	1.04	0.24	0.41	0.14
9	Finland	0.60	1.04	1.63	0.35	0.29	-0.01	0.78	-0.38	0.81	0.92
10	Switzerland	0.59	0.76	0.85	0.56	-1.10	-0.30	0.79	2.30	1.37	0.06
11	Austria	0.54	0.27	0.31	0.48	0.24	-0.03	-0.14	2.06	1.26	0.44
12	Luxembourg	0.54	0.18	-0.05	0.80	-0.09	1.43	0.71	0.40	1.35	0.13
13	Ireland	0.47	0.75	1.03	0.25	1.31	0.09	-0.32	0.38	0.57	0.20
14	United Kingdom	0.37	0.54	0.40	0.35	0.01	0.22	0.72	0.56	0.88	-0.38
15	Malta	0.29	-0.78	-0.70	-0.63	1.36	1.57	-0.26	0.20	-0.09	1.95
16	France	0.25	1.06	-0.12	0.25	-0.38	0.07	-0.64	1.18	0.86	0.01
17	Portugal	0.25	-0.02	-0.79	1.12	1.16	1.41	0.64	0.03	0.03	-1.32
18	Germany	0.06	-0.24	0.33	0.99	-1.88	-0.62	0.48	0.96	0.55	-0.02
19	Belgium	-0.03	0.28	-0.03	-0.65	-1.58	0.37	-0.13	0.73	0.31	0.43
20	Spain	-0.11	-0.07	-0.23	0.29	0.29	1.06	0.24	-1.68	-0.24	-0.66
21	Cyprus	-0.36	-1.27	-0.96	-1.16	0.60	0.27	0.29	-0.56	-1.02	0.30
22	Italy	-0.39	-0.45	-0.82	-0.32	-0.30	0.75	0.11	-0.91	-0.85	-0.67
23	Latvia	-0.54	-0.14	-0.69	0.60	-1.19	-1.32	-0.72	-1.36	-1.12	1.08
24	Slovenia	-0.55	-0.49	-0.81	-0.04	0.42	-0.99	-0.93	-0.18	-0.30	-1.59
25	Israel	-0.69	0.68	-0.35	-3.33	0.08	-0.40	-0.54	-0.89	-0.88	-0.61
26	Czech Republic	-0.75	-1.00	-0.65	-0.02	-0.69	-1.55	-0.21	-1.42	-0.44	-0.79
27	Estonia	-0.76	-0.08	-0.59	-0.45	-1.64	-0.64	-0.75	-1.15	-0.56	-0.95
28	Poland	-0.77	-1.70	-1.45	-0.71	1.20	-0.15	-1.53	-0.99	-0.77	-0.87
29	Slovakia	-0.87	-0.81	-0.66	-0.69	-0.65	-0.42	-1.27	-1.38	-0.86	-1.06
30	Bulgaria	-0.88	-0.33	-0.28	-1.32	-0.52	0.27	-1.80	-0.44	-2.44	-1.09
31	Hungary	-0.93	-2.14	-0.87	-1.08	0.22	-0.56	-0.75	-1.06	-0.81	-1.36
32	Greece	-0.97	-1.47	-2.04	-0.13	0.96	-1.83	-1.31	-0.87	-0.98	-1.02
33	Lithuania	-0.98	-1.39	-0.51	-0.30	-2.04	-1.04	-1.76	-0.57	-1.45	0.20
34	Romania	-1.28	-1.64	-1.07	-2.11	-0.10	-2.17	-1.10	-0.18	-1.78	-1.37

Note. Values in hatched cells have been estimated from all other waves.

Table 21 Cohesion Ranking Table and Dimension Scores Wave 1 (1989-1995)

	Country	cohe-sion_w4	d11w1	d12w1	d13w1	d21w1	d22w1	d23w1	d31w1	d32w1	d33w1
1	Sweden	1.24	2.01	2.08	0.97	0.02	0.65	1.22	1.93	1.62	0.67
2	United States	1.15	1.46	0.57	0.24	1.67	0.68	0.75	1.53	1.20	2.26
3	Canada	0.99	0.74	1.21	0.16	0.80	1.14	1.22	1.19	0.80	1.69
4	Denmark	0.94	0.85	1.52	1.06	0.27	1.81	1.22	0.88	0.87	-0.01
5	Norway	0.88	1.92	2.01	0.74	-0.25	1.40	1.13	0.53	-0.07	0.48
6	Switzerland	0.79	0.73	0.52	0.83	-0.70	0.97	1.13	1.63	1.29	0.68
7	Netherlands	0.76	1.33	1.24	1.87	-1.91	0.58	1.80	0.34	0.93	0.64
8	Australia	0.72	1.57	0.34	0.92	1.45	0.64	-0.06	-0.08	-0.11	1.81
9	Finland	0.59	0.14	1.86	0.91	-0.33	0.71	1.22	0.95	1.22	-1.39
10	United Kingdom	0.46	0.57	0.59	0.26	-0.23	1.02	0.96	-0.36	0.73	0.58
11	Ireland	0.44	1.00	0.83	-0.11	1.47	1.56	-0.06	0.13	0.37	-1.19
12	New Zealand	0.42	0.28	0.89	0.58	0.98	0.10	1.13	0.46	-0.71	0.07
13	Luxembourg	0.35	0.16	0.61	0.38	-0.66	1.28	1.22	0.24	1.07	-0.25
14	Austria	0.33	-0.38	-0.21	0.21	0.29	0.55	-0.06	1.74	1.19	-0.37
15	Germany	0.06	-0.33	-0.13	0.51	-1.82	-0.02	0.04	0.92	0.28	1.07
16	France	0.05	0.03	-0.81	0.35	-0.66	0.11	0.24	0.95	0.62	-0.42
17	Belgium	-0.17	0.47	-0.09	-0.23	-1.39	-0.43	-0.20	0.22	1.11	-1.01
18	Spain	-0.23	0.19	-0.19	0.91	0.09	-0.37	0.06	-1.43	-0.13	-1.16
19	Malta	-0.23	-0.78	-0.74	-0.74	1.69	0.05	-1.39	-0.32	0.06	0.07
20	Greece	-0.30	0.68	-1.82	0.59	1.53	0.90	-0.06	0.34	-0.66	0.25
21	Cyprus	-0.32	0.20	-1.25	-1.30	0.58	0.51	-0.50	0.18	-0.77	-0.20
22	Slovenia	-0.37	-0.06	-1.23	-0.18	0.64	-0.52	0.14	-1.46	0.59	-1.27
23	Italy	-0.40	-0.08	0.03	0.25	-0.35	0.07	-2.03	-0.64	-0.23	-0.60
24	Czech Republic	-0.46	-1.07	-0.45	0.68	-1.47	-0.87	-0.69	0.20	-0.96	0.53
25	Portugal	-0.47	-1.39	-0.88	-0.06	0.44	-0.62	-0.24	-0.05	0.44	-1.88
26	Poland	-0.56	-1.33	-0.20	-0.63	1.24	-1.34	-0.63	-0.58	-1.21	-0.34
27	Hungary	-0.70	-0.87	-0.69	-0.28	0.03	-0.28	-0.60	-1.44	-0.98	-1.15
28	Bulgaria	-0.71	-0.18	-0.30	-0.74	-1.30	-0.53	-1.48	-0.50	2.51	1.13
29	Israel	-0.72	-0.19	-0.46	-3.76	-0.32	-0.57	-0.06	-0.78	-0.18	-0.15
30	Lithuania	-0.73	-1.46	-0.27	-1.10	-0.20	-1.29	-1.07	-1.11	-1.16	1.09
31	Estonia	-0.86	-1.19	-0.49	-0.76	-0.82	-2.18	-0.29	-0.63	-1.22	-0.19
32	Romania	-0.96	-1.08	-1.26	-1.19	0.04	-0.64	-1.52	-0.23	-1.25	-1.56
33	Slovakia	-0.97	-0.89	-0.84	-0.35	-1.10	-1.16	-1.67	-1.20	-1.12	-0.38
34	Latvia	-0.99	-1.68	-1.06	-0.99	0.27	-2.11	-0.86	-1.88	-1.07	0.49

Note. Values in hatched cells have been estimated from all other waves.

7.2.6 Technical Output for Descriptive Analyses

Figure 6 Multidimensional scaling of dimensions (left column) and countries (right column) in all four waves

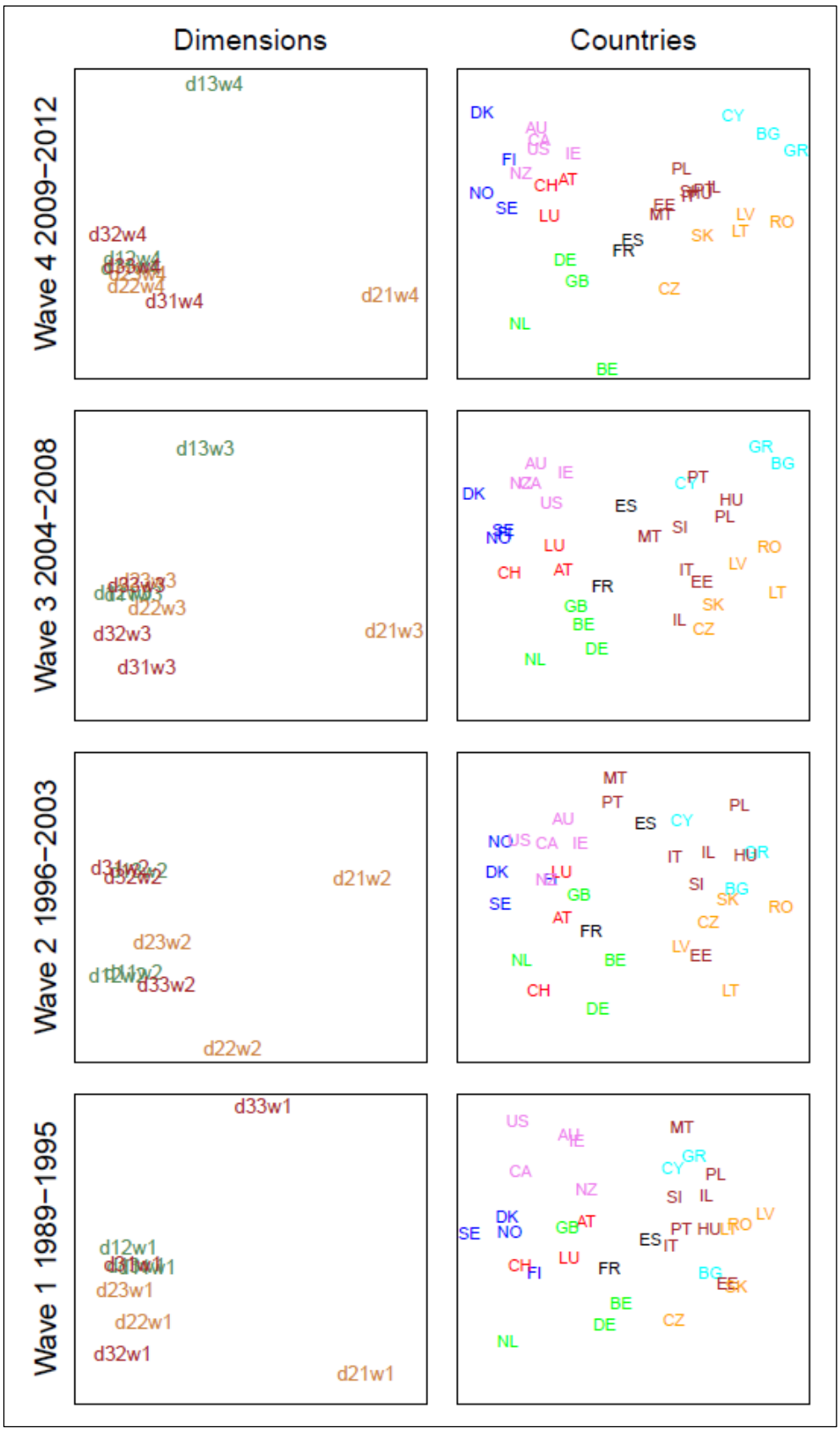


Table 22 Scores of country clusters for wave 4

	cohe-sion w4	d11w4	d12w4	d13w4	d21w4	d22w4	d23w4	d31w4	d32w4	d33w4
DK, FI, NO, SE	1.12	0.91	1.73	1.12	0.62	1.55	1.30	0.49	0.67	1.72
AU, CA, IE, NZ, US	0.79	0.74	0.58	0.80	0.79	0.40	0.92	1.65	0.75	0.50
AT, CH, LU	0.60	0.55	0.26	0.15	0.30	1.15	0.74	0.42	1.26	0.54
BE, DE, GB, NL	0.25	0.68	0.58	-0.10	-1.91	0.48	0.60	0.52	0.80	0.58
FR, ES	-0.09	0.27	0.00	-0.25	-0.59	-0.06	-0.16	-0.56	0.25	0.29
EE, HU, IL, IT, MT, PL, PT, SI	-0.47	-0.29	-0.53	-0.44	0.15	-0.49	-0.76	-0.49	-0.76	-0.64
CZ, LT, LV, RO, SK	-0.86	-0.90	-0.82	-0.26	-0.63	-1.26	-1.03	-1.08	-0.63	-1.15
BG, CY, GR	-1.00	-1.82	-1.54	-1.08	1.14	-1.06	-0.97	-1.03	-1.57	-1.04

Table 23 Matrix of distances between dimensions in all waves. Basis for the 2-dimensional MDS in Figure 7, left column

	d11w1	d11w2	d11w3	d11w4	d12w1	d12w2	d12w3	d12w4	d13w1	d13w2	d13w3	d13w4	d21w1	d21w2	d21w3	d21w4	d22w1	d22w2	d22w3	d22w4	d23w1	d23w2	d23w3	d23w4	d31w1	d31w2	d31w3	d31w4	d32w1	d32w2	d32w3	d32w4	d33w1	d33w2	d33w3	d33w4
d11w1	0.00																																			
d11w2	4.04	0.00																																		
d11w3	3.05	3.27	0.00																																	
d11w4	5.33	4.72	3.40	0.00																																
d12w1	4.12	4.07	3.57	4.38	0.00																															
d12w2	4.03	3.41	3.31	4.20	2.46	0.00																														
d12w3	4.44	3.20	2.98	3.59	3.15	2.00	0.00																													
d12w4	4.66	3.74	3.53	4.07	2.62	2.54	2.14	0.00																												
d13w1	5.76	6.45	5.42	5.88	5.67	5.71	5.88	5.63	0.00																											
d13w2	6.25	5.68	5.51	5.51	5.71	5.56	5.38	5.58	3.36	0.00																										
d13w3	4.83	5.48	5.07	5.96	4.78	5.05	5.61	5.23	4.26	4.48	0.00																									
d13w4	6.64	6.71	6.40	6.37	5.41	5.92	6.43	5.93	4.58	4.51	4.05	0.00																								
d21w1	7.82	8.23	8.06	8.31	8.36	8.63	8.55	8.75	8.50	7.94	7.98	7.52	0.00																							
d21w2	7.08	7.66	7.21	7.80	7.73	8.02	8.12	8.36	7.94	7.92	7.38	7.06	3.28	0.00																						
d21w3	7.70	8.14	8.13	8.70	8.19	8.26	8.46	8.66	8.30	8.11	7.66	7.19	3.61	3.66	0.00																					
d21w4	7.71	7.79	7.81	8.38	7.84	7.79	7.91	8.22	8.59	8.33	8.35	7.87	5.30	5.24	3.26	0.00																				
d22w1	3.64	5.01	3.54	5.36	4.72	4.27	4.82	5.24	5.88	6.25	5.17	6.33	7.52	6.37	7.33	7.17	0.00																			
d22w2	5.61	5.92	5.63	6.08	6.02	6.21	6.28	6.52	6.79	6.68	6.01	7.10	8.16	7.14	8.16	8.28	5.54	0.00																		
d22w3	4.64	4.74	3.44	5.24	5.09	4.34	3.94	4.68	5.67	5.81	5.68	6.67	7.98	6.99	7.75	7.70	3.70	5.27	0.00																	
d22w4	4.36	4.16	3.06	4.15	3.89	3.35	2.74	3.24	5.44	5.39	5.29	6.25	8.50	7.69	8.33	7.88	4.19	5.42	2.65	0.00																
d23w1	4.63	4.33	3.86	4.96	4.62	4.38	3.74	4.00	5.52	5.10	5.48	6.30	8.16	7.59	8.01	8.00	4.92	6.75	4.18	3.72	0.00															
d23w2	4.56	4.42	3.79	5.20	4.47	4.02	3.78	4.15	5.37	5.06	4.62	6.03	7.93	7.05	7.94	7.79	4.04	5.69	3.68	3.43	4.25	0.00														
d23w3	4.29	3.54	3.13	4.48	3.76	3.20	2.82	3.22	5.15	4.90	4.92	5.90	7.84	7.18	7.81	7.77	4.29	6.19	3.12	2.63	3.13	3.15	0.00													
d23w4	4.02	3.83	3.05	4.39	3.61	3.31	2.98	3.12	5.12	4.89	4.50	5.90	8.13	7.53	8.15	8.00	4.23	5.95	3.63	2.57	3.69	2.56	2.47	0.00												
d31w1	5.23	4.82	4.68	6.01	5.02	4.80	4.88	4.61	5.98	5.86	6.17	6.49	8.32	7.68	8.12	7.71	4.78	6.93	4.73	4.27	5.17	5.12	4.31	4.44	0.00											
d31w2	5.43	5.39	5.11	6.00	6.18	5.38	5.47	5.55	6.29	5.93	6.47	7.19	8.27	8.12	8.42	8.26	4.79	6.84	5.06	4.94	5.36	5.74	5.08	5.20	3.53	0.00										
d31w3	4.56	5.00	3.77	4.30	5.42	5.11	4.89	5.48	6.57	6.38	6.45	7.40	7.28	6.74	8.13	7.91	3.97	6.19	4.82	4.33	5.34	4.73	4.52	4.29	5.04	4.41	0.00									
d31w4	4.21	4.64	3.72	4.57	4.61	4.60	4.56	4.96	6.43	5.91	5.53	6.51	6.75	6.34	7.40	7.46	3.97	6.24	5.09	4.65	4.99	4.19	4.21	3.87	5.29	5.33	2.95	0.00								
d32w1	5.10	4.68	3.85	5.01	5.67	5.30	4.78	5.11	5.92	5.46	6.10	6.75	7.98	7.57	8.59	8.63	4.68	6.07	3.86	4.40	4.41	4.76	4.28	4.96	4.63	4.23	4.61	5.15	0.00							
d32w2	5.03	4.31	3.38	3.96	5.18	4.76	4.01	4.39	5.12	4.44	5.42	6.18	7.91	7.41	8.43	8.43	4.54	6.26	3.85	3.44	3.60	4.11	3.36	3.58	4.17	4.15	3.77	4.03	2.88	0.00						
d32w3	5.75	4.86	4.45	4.76	5.21	4.71	4.17	4.15	6.32	6.07	6.32	6.74	8.47	8.18	8.72	8.42	5.60	7.21	4.88	4.11	4.62	5.02	4.53	4.39	4.58	5.00	5.05	4.85	4.17	3.49	0.00					
d32w4	5.22	4.98	3.91	3.88	5.03	4.63	4.19	4.54	4.74	4.72	5.40	5.87	8.82	8.28	8.94	8.70	5.14	6.77	4.95	3.91	4.55	5.15	4.54	4.24	4.72	5.03	4.72	4.75	4.60	2.93	3.50	0.00				
d33w1	6.48	6.86	7.26	7.29	6.81	7.16	7.16	7.12	7.44	6.98	7.32	7.79	8.00	8.52	8.25	7.54	7.42	7.91	8.43	7.27	7.14	7.24	7.23	6.70	6.74	7.03	6.60	6.63	8.06	7.37	7.68	7.01	0.00			
d33w2	5.57	5.22	5.64	6.20	5.26	5.29	5.17	5.69	7.03	6.09	6.50	7.20	7.14	7.59	8.06	8.06	5.97	6.27	5.74	5.28	6.04	5.67	5.02	5.05	5.52	6.05	5.33	5.00	5.95	5.51	5.88	5.76	5.88	0.00		
d33w3	3.40	3.36	2.58	4.12	4.05	3.67	3.44	3.84	5.23	4.96	4.77	6.06	7.78	7.27	8.09	7.88	3.99	6.16	4.11	3.15	4.27	3.67	3.07	2.55	4.12	4.75	3.57	3.54	4.37	3.14	4.25	3.53	6.37	4.56	0.00	
d33w4	3.51	3.73	2.74	4.38	3.67	3.28	3.19	3.51	5.12	5.28	5.17	5.98	8.36	7.57	8.42	8.11	4.14	5.46	3.60	2.69	4.16	3.85	3.22	3.30	4.10	5.09	4.57	4.58	4.01	3.63	4.18	3.72	7.01	4.67	2.62	0.00

Table 24 Matrix of distances of countries based on 9 dimension scores in wave 4 (2009-2012). Basis for the 2-dimensional MDS in Figure 7 right column, top. Order according to clusters there

	DK	NO	FI	SE	US	CA	NZ	AU	IE	CH	LU	AT	NL	BE	DE	GB	ES	FR	PL	SI	IT	HU	PT	IL	EE	MT	CZ	LT	LV	RO	SK	BG	GR	CY
DK	0.00																																	
NO	1.91	0.00																																
FI	2.07	1.51	0.00																															
SE	2.53	1.25	1.31	0.00																														
US	3.40	2.79	2.32	2.93	0.00																													
CA	2.60	2.61	2.05	2.75	1.87	0.00																												
NZ	2.57	2.33	2.36	2.64	2.16	1.06	0.00																											
AU	2.66	2.78	2.13	2.91	1.80	0.75	1.37	0.00																										
IE	3.87	3.85	3.13	3.86	2.27	1.75	2.27	1.54	0.00																									
CH	2.80	2.42	2.50	2.84	2.83	2.11	2.26	2.51	2.90	0.00																								
LU	3.65	2.74	2.47	2.37	2.74	2.36	2.39	2.63	3.22	2.60	0.00																							
AT	3.63	3.09	2.67	3.22	2.03	1.96	2.39	2.05	1.99	1.70	2.23	0.00																						
NL	4.46	3.05	3.64	3.18	3.63	3.57	3.03	3.81	3.88	3.04	3.23	3.26	0.00																					
BE	5.79	4.64	4.86	4.29	4.81	4.70	4.39	4.96	4.61	3.93	3.81	3.95	2.55	0.00																				
DE	3.92	2.81	2.67	2.57	2.60	2.57	2.53	2.79	2.72	2.13	1.88	1.73	2.04	2.51	0.00																			
GB	4.52	3.63	3.54	3.34	3.18	2.84	2.56	3.01	2.63	3.05	2.66	2.66	2.08	2.29	1.56	0.00																		
ES	4.73	4.21	3.77	3.68	3.55	3.23	3.37	3.37	2.95	3.21	2.78	2.71	3.65	2.67	2.08	2.01	0.00																	
FR	4.81	4.03	3.70	3.71	3.54	3.62	3.87	3.83	3.43	2.69	3.03	2.32	3.47	2.66	1.83	2.75	1.83	0.00																
PL	5.48	5.46	4.65	4.96	4.38	3.91	4.46	4.01	3.36	4.06	3.94	3.44	5.39	4.41	3.63	3.71	1.98	2.76	0.00															
SI	5.98	5.75	4.92	5.22	4.39	4.26	4.78	4.26	3.44	4.43	4.07	3.45	5.40	4.34	3.60	3.70	2.11	2.70	1.09	0.00														
IT	5.79	5.45	4.87	4.93	4.23	4.13	4.49	4.23	3.66	4.26	4.07	3.63	5.05	3.89	3.54	3.42	1.83	2.69	1.60	1.71	0.00													
HU	6.21	5.89	5.07	5.33	4.68	4.48	5.07	4.64	3.95	4.43	4.20	3.70	5.55	4.40	3.79	4.03	2.44	2.65	1.29	1.23	1.71	0.00												
PT	6.17	5.98	5.25	5.30	4.93	4.53	4.95	4.69	4.20	4.88	4.37	4.37	5.72	4.47	4.19	3.96	2.34	3.47	1.59	2.02	1.31	1.77	0.00											
IL	6.95	6.88	6.63	6.82	6.07	5.87	6.18	5.89	5.15	5.07	6.32	4.88	6.20	5.13	5.23	5.28	4.30	4.01	3.94	4.00	3.64	4.02	4.51	0.00										
EE	5.06	4.87	4.41	4.45	4.46	3.86	4.22	4.18	3.80	3.38	3.95	3.52	4.65	3.58	3.30	3.43	2.03	2.32	1.96	2.67	1.95	2.24	2.21	3.56	0.00									
MT	5.45	5.02	4.61	4.65	4.08	3.83	4.10	3.84	3.31	3.66	3.67	2.95	4.34	3.39	2.98	2.89	1.76	2.34	2.20	2.08	1.66	2.37	2.57	3.15	2.40	0.00								
CZ	6.06	5.38	4.94	4.84	4.57	4.41	4.58	4.65	3.94	4.16	3.68	3.62	4.28	2.67	2.89	2.82	1.62	2.13	2.32	2.18	2.18	2.13	2.45	4.53	2.39	2.51	0.00							
LT	7.15	6.97	6.29	6.37	5.97	5.63	6.00	5.75	4.89	5.64	5.58	5.17	6.27	4.62	4.88	4.57	3.03	3.81	2.16	2.29	2.18	2.21	1.88	4.00	2.65	3.14	2.54	0.00						
LV	7.26	6.93	6.33	6.44	5.64	5.52	5.93	5.70	4.93	5.39	5.29	4.78	6.23	4.66	4.75	4.68	3.14	3.52	2.25	2.21	1.82	1.68	1.94	3.73	2.68	2.81	2.48	1.79	0.00					
RO	8.41	8.00	7.40	7.33	6.78	6.70	7.07	6.93	6.33	6.83	6.43	6.35	7.34	5.72	6.08	5.83	4.48	5.07	3.84	3.92	3.03	3.26	2.61	5.25	3.88	4.30	3.87	2.82	2.19	0.00				
SK	6.43	6.04	5.49	5.63	4.97	4.84	5.21	4.97	4.15	4.41	4.39	3.70	5.29	3.81	3.67	3.86	2.31	2.34	1.81	1.47	2.02	1.48	2.52	3.43	2.46	2.14	1.74	2.28	1.76	3.82	0.00			
BG	7.48	7.48	6.70	6.92	6.21	6.02	6.59	6.11	5.54	6.10	5.97	5.52	7.45	6.07	5.76	5.83	4.04	4.53	2.51	2.73	2.54	2.31	2.22	4.31	3.35	3.66	3.87	2.42	1.87	2.56	2.93	0.00		
GR	8.22	8.12	7.49	7.63	6.83	6.74	7.23	6.86	6.26	6.63	6.61	6.09	7.85	6.31	6.30	6.34	4.62	4.95	3.37	3.47	3.04	3.00	2.98	4.17	3.86	4.03	4.28	2.92	1.94	2.42	3.25	1.21	0.00	
CY	7.05	6.99	6.61	6.83	5.71	5.64	6.08	5.72	5.28	5.35	5.95	4.91	6.81	5.88	5.53	5.65	4.39	4.43	3.66	3.81	3.02	3.54	3.74	2.80	3.66	3.17	4.66	4.15	3.02	4.05	3.57	3.09	2.76	0.00

Table 25 Correlation matrix of countries based on the 9 dimension scores in wave 4 (2009-2012)

	d11w1	d11w2	d11w3	d11w4	d12w1	d12w2	d12w3	d12w4	d13w1	d13w2	d13w3	d13w4	d21w1	d21w2	d21w3	d21w4	d22w1	d22w2	d22w3	d22w4	d23w1	d23w2	d23w3	d23w4	d31w1	d31w2	d31w3	d31w4	d32w1	d32w2	d32w3	d32w4	d33w1	d33w2	d33w3	d33w4
d11w1	1.00																																			
d11w2	0.75	1.00																																		
d11w3	0.86	0.84	1.00																																	
d11w4	0.57	0.66	0.83	1.00																																
d12w1	0.74	0.75	0.81	0.71	1.00																															
d12w2	0.75	0.82	0.83	0.73	0.91	1.00																														
d12w3	0.70	0.84	0.87	0.80	0.85	0.94	1.00																													
d12w4	0.67	0.79	0.81	0.75	0.90	0.90	0.93	1.00																												
d13w1	0.50	0.37	0.56	0.48	0.51	0.51	0.48	0.52	1.00																											
d13w2	0.41	0.51	0.54	0.54	0.51	0.53	0.56	0.53	0.83	1.00																										
d13w3	0.65	0.54	0.61	0.46	0.65	0.61	0.52	0.59	0.73	0.70	1.00																									
d13w4	0.33	0.32	0.38	0.39	0.56	0.47	0.37	0.47	0.68	0.69	0.75	1.00																								
d21w1	0.07	-0.03	0.02	-0.05	-0.06	-0.13	-0.11	-0.16	-0.10	0.05	0.04	0.14	1.00																							
d21w2	0.24	0.11	0.21	0.08	0.09	0.02	0.00	-0.06	0.04	0.05	0.18	0.25	0.84	1.00																						
d21w3	0.10	0.00	0.00	-0.15	-0.02	-0.03	-0.09	-0.14	-0.04	0.00	0.11	0.22	0.80	0.80	1.00																					
d21w4	0.10	0.08	0.08	-0.06	0.07	0.08	0.05	-0.02	-0.12	-0.05	-0.06	0.06	0.57	0.58	0.84	1.00																				
d22w1	0.80	0.62	0.81	0.56	0.66	0.72	0.65	0.58	0.48	0.41	0.59	0.39	0.14	0.38	0.19	0.22	1.00																			
d22w2	0.52	0.47	0.52	0.44	0.45	0.41	0.40	0.36	0.30	0.32	0.45	0.24	-0.01	0.23	-0.01	-0.04	0.53	1.00																		
d22w3	0.67	0.66	0.82	0.58	0.61	0.72	0.76	0.67	0.51	0.49	0.51	0.32	0.04	0.26	0.09	0.10	0.79	0.58	1.00																	
d22w4	0.71	0.74	0.86	0.74	0.77	0.83	0.89	0.84	0.55	0.56	0.58	0.41	-0.09	0.10	-0.05	0.06	0.73	0.55	0.89	1.00																
d23w1	0.67	0.72	0.77	0.63	0.68	0.71	0.79	0.76	0.54	0.61	0.54	0.40	-0.01	0.13	0.03	0.03	0.63	0.31	0.74	0.79	1.00															
d23w2	0.68	0.70	0.78	0.59	0.70	0.76	0.78	0.74	0.56	0.61	0.68	0.45	0.05	0.25	0.04	0.08	0.75	0.51	0.80	0.82	0.73	1.00														
d23w3	0.72	0.81	0.85	0.70	0.79	0.85	0.88	0.84	0.60	0.64	0.63	0.47	0.07	0.22	0.08	0.09	0.72	0.42	0.85	0.89	0.85	0.85	1.00													
d23w4	0.75	0.78	0.86	0.71	0.80	0.83	0.87	0.85	0.60	0.64	0.69	0.47	0.00	0.14	-0.01	0.03	0.73	0.46	0.80	0.90	0.79	0.90	0.91	1.00												
d31w1	0.59	0.65	0.67	0.45	0.62	0.65	0.64	0.68	0.46	0.48	0.42	0.36	-0.05	0.11	0.00	0.10	0.65	0.27	0.66	0.72	0.59	0.60	0.72	0.70	1.00											
d31w2	0.55	0.56	0.60	0.45	0.42	0.56	0.55	0.53	0.40	0.47	0.37	0.22	-0.04	0.00	-0.07	-0.03	0.65	0.29	0.61	0.63	0.56	0.50	0.61	0.59	0.81	1.00										
d31w3	0.69	0.62	0.78	0.72	0.55	0.61	0.64	0.55	0.35	0.38	0.37	0.17	0.20	0.31	0.00	0.05	0.76	0.42	0.65	0.72	0.57	0.66	0.69	0.72	0.61	0.71	1.00									
d31w4	0.73	0.67	0.79	0.68	0.68	0.68	0.69	0.63	0.37	0.47	0.54	0.36	0.31	0.39	0.17	0.16	0.76	0.41	0.61	0.67	0.62	0.73	0.73	0.77	0.58	0.57	0.87	1.00								
d32w1	0.61	0.67	0.78	0.62	0.51	0.57	0.65	0.60	0.47	0.55	0.44	0.31	0.03	0.13	-0.12	-0.13	0.67	0.44	0.77	0.71	0.71	0.66	0.72	0.63	0.67	0.73	0.68	0.60	1.00							
d32w2	0.62	0.72	0.83	0.76	0.59	0.66	0.76	0.71	0.60	0.70	0.55	0.42	0.05	0.17	-0.08	-0.08	0.69	0.41	0.78	0.82	0.80	0.74	0.83	0.81	0.74	0.74	0.78	0.75	0.87	1.00						
d32w3	0.50	0.64	0.70	0.66	0.59	0.66	0.74	0.74	0.40	0.44	0.39	0.31	-0.09	-0.01	-0.15	-0.07	0.52	0.21	0.64	0.74	0.68	0.62	0.69	0.71	0.68	0.62	0.61	0.64	0.74	0.82	1.00					
d32w4	0.59	0.62	0.77	0.77	0.62	0.67	0.73	0.69	0.66	0.66	0.56	0.48	-0.18	-0.04	-0.21	-0.15	0.60	0.31	0.63	0.77	0.69	0.60	0.69	0.73	0.66	0.62	0.66	0.66	0.68	0.87	0.81	1.00				
d33w1	0.36	0.29	0.20	0.20	0.30	0.22	0.22	0.23	0.16	0.26	0.19	0.08	0.03	-0.10	-0.03	0.14	0.16	0.05	-0.08	0.20	0.23	0.21	0.21	0.32	0.31	0.25	0.34	0.33	0.02	0.18	0.11	0.26	1.00			
d33w2	0.53	0.59	0.52	0.42	0.58	0.58	0.60	0.51	0.25	0.44	0.36	0.21	0.23	0.13	0.01	0.02	0.46	0.40	0.50	0.58	0.45	0.51	0.62	0.61	0.54	0.44	0.57	0.62	0.46	0.54	0.48	0.50	0.48	1.00		
d33w3	0.83	0.83	0.90	0.74	0.75	0.80	0.82	0.78	0.59	0.63	0.65	0.44	0.08	0.20	0.01	0.06	0.76	0.42	0.74	0.85	0.72	0.80	0.86	0.90	0.74	0.66	0.81	0.81	0.71	0.85	0.73	0.81	0.39	0.68	1.00	
d33w4	0.81	0.79	0.89	0.71	0.80	0.84	0.85	0.81	0.60	0.58	0.60	0.46	-0.06	0.13	-0.07	0.00	0.74	0.55	0.80	0.89	0.74	0.78	0.84	0.84	0.75	0.61	0.68	0.68	0.76	0.80	0.74	0.79	0.25	0.67	0.90	1.00

Table 26 Correlation matrix of countries based on the 9 dimension scores in wave 4 (2009-2012)

	DK	NO	FI	SE	US	CA	NZ	AU	IE	CH	LU	AT	NL	BE	DE	GB	ES	FR	PL	SI	IT	HU	PT	IL	EE	MT	CZ	LT	LV	RO	SK	BG	GR	CY
DK	1.00																																	
NO	0.44	1.00																																
FI	0.19	0.56	1.00																															
SE	0.29	0.85	0.82	1.00																														
US	-0.56	-0.12	-0.15	-0.19	1.00																													
CA	-0.18	-0.52	-0.63	-0.56	0.11	1.00																												
NZ	0.02	0.07	-0.57	-0.12	0.07	0.68	1.00																											
AU	-0.26	-0.67	-0.63	-0.64	0.25	0.77	0.44	1.00																										
IE	-0.47	-0.74	-0.61	-0.75	0.30	0.58	0.27	0.80	1.00																									
CH	0.37	0.42	-0.12	-0.01	-0.32	-0.08	0.08	-0.42	-0.30	1.00																								
LU	-0.35	0.26	0.12	0.41	-0.11	-0.18	0.10	-0.36	-0.48	-0.04	1.00																							
AT	-0.51	-0.18	-0.42	-0.46	0.31	-0.07	-0.14	0.03	0.27	0.44	0.11	1.00																						
NL	-0.12	0.65	0.09	0.44	0.07	-0.12	0.46	-0.27	-0.09	0.39	0.30	0.20	1.00																					
BE	0.01	0.73	0.21	0.59	-0.11	-0.32	0.35	-0.46	-0.27	0.35	0.41	0.07	0.95	1.00																				
DE	-0.33	0.57	0.22	0.47	0.08	-0.42	0.11	-0.49	-0.19	0.30	0.51	0.36	0.89	0.91	1.00																			
GB	-0.29	0.30	-0.11	0.26	0.06	0.15	0.64	0.11	0.25	-0.03	0.30	0.01	0.85	0.81	0.72	1.00																		
ES	0.04	0.27	0.14	0.45	-0.30	-0.32	0.24	-0.18	-0.13	-0.34	0.44	-0.38	0.38	0.58	0.45	0.62	1.00																	
FR	-0.04	0.53	0.40	0.35	-0.01	-0.78	-0.48	-0.80	-0.41	0.53	0.19	0.48	0.46	0.53	0.70	0.05	0.04	1.00																
PL	0.04	-0.75	-0.12	-0.47	-0.35	0.09	-0.41	0.25	0.27	-0.42	-0.22	-0.24	-0.85	-0.74	-0.69	-0.56	-0.03	-0.40	1.00															
SI	-0.44	-0.77	-0.13	-0.47	0.04	-0.11	-0.52	0.29	0.45	-0.58	-0.07	0.15	-0.62	-0.56	-0.31	-0.32	0.07	-0.14	0.79	1.00														
IT	0.03	-0.34	0.00	-0.10	0.41	0.26	0.00	0.51	0.16	-0.76	-0.28	-0.49	-0.61	-0.64	-0.70	-0.35	-0.11	-0.70	0.34	0.28	1.00													
HU	-0.40	-0.63	0.16	-0.32	-0.04	-0.05	-0.69	-0.02	0.11	-0.31	0.04	0.11	-0.69	-0.66	-0.37	-0.60	-0.34	-0.03	0.73	0.74	0.14	1.00												
PT	0.05	-0.41	0.14	0.02	-0.16	0.32	-0.02	0.30	0.01	-0.71	0.04	-0.74	-0.64	-0.56	-0.65	-0.29	0.12	-0.74	0.64	0.35	0.70	0.44	1.00											
IL	0.41	-0.02	-0.28	-0.38	-0.07	0.00	-0.09	0.20	0.24	0.53	-0.69	0.39	-0.05	-0.16	-0.21	-0.26	-0.48	0.15	-0.07	-0.12	-0.16	-0.25	-0.55	1.00										
EE	0.76	0.25	0.30	0.19	-0.63	0.02	-0.09	-0.35	-0.38	0.44	-0.35	-0.51	-0.18	-0.09	-0.34	-0.36	-0.21	-0.01	0.18	-0.39	-0.15	0.00	0.19	0.20	1.00									
MT	-0.05	-0.05	-0.28	-0.13	0.00	0.06	0.12	0.48	0.24	0.01	0.00	0.39	0.10	0.01	0.02	0.15	0.00	-0.14	-0.16	0.08	0.04	-0.28	-0.28	0.48	-0.47	1.00								
CZ	-0.40	0.11	0.12	0.24	-0.10	-0.25	0.07	-0.44	-0.06	-0.08	0.55	0.01	0.45	0.58	0.67	0.54	0.64	0.39	-0.07	0.11	-0.48	0.06	-0.07	-0.66	-0.19	-0.48	1.00							
LT	0.14	-0.47	0.10	-0.17	-0.33	0.09	-0.17	0.20	0.35	-0.51	-0.42	-0.59	-0.45	-0.34	-0.44	-0.11	0.28	-0.38	0.75	0.53	0.31	0.38	0.62	-0.17	0.32	-0.39	0.17	1.00						
LV	-0.30	-0.73	-0.29	-0.61	0.26	0.35	-0.24	0.23	0.23	-0.29	-0.11	0.04	-0.76	-0.80	-0.63	-0.63	-0.49	-0.36	0.64	0.52	0.42	0.74	0.50	-0.22	0.01	-0.44	-0.09	0.29	1.00					
RO	-0.11	-0.18	0.24	0.11	0.28	0.38	0.03	0.16	-0.12	-0.52	0.04	-0.57	-0.43	-0.46	-0.49	-0.29	-0.25	-0.56	0.20	-0.01	0.67	0.34	0.77	-0.57	0.16	-0.48	-0.13	0.23	0.57	1.00				
SK	-0.31	-0.42	-0.25	-0.45	-0.12	-0.37	-0.49	-0.21	0.16	0.13	0.12	0.59	-0.24	-0.14	0.13	-0.25	0.03	0.45	0.45	0.66	-0.41	0.52	-0.28	0.10	-0.25	-0.02	0.36	0.10	0.31	-0.51	1.00			
BG	0.12	-0.58	0.01	-0.34	-0.02	0.11	-0.47	0.22	0.01	-0.43	-0.26	-0.28	-0.99	-0.94	-0.88	-0.85	-0.39	-0.46	0.80	0.56	0.67	0.69	0.70	-0.04	0.20	-0.18	-0.44	0.44	0.78	0.55	0.14	1.00		
GR	0.16	-0.49	-0.12	-0.40	0.12	0.14	-0.38	0.20	-0.06	-0.24	-0.26	-0.13	-0.93	-0.92	-0.87	-0.91	-0.55	-0.41	0.62	0.39	0.64	0.55	0.52	0.09	0.17	-0.12	-0.57	0.18	0.78	0.50	0.11	0.95	1.00	
CY	0.22	-0.23	-0.37	-0.46	0.25	0.29	-0.04	0.38	0.07	0.21	-0.40	0.28	-0.48	-0.63	-0.62	-0.63	-0.77	-0.28	0.06	-0.07	0.38	0.02	-0.06	0.62	0.05	0.38	-0.89	-0.37	0.33	0.10	-0.11	0.46	0.68	1.00

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