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How to Measure and Compare Context Across-Countries?
CFA and Measurement Invariance Tests of Political Culture

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Abstract:
Plenty of studies have been focusing on political culture, but not many have taken an in-depth look to issues of operationalization and measurement validity of this concept, particularly important in comparative perspective. In this paper we would like to make a contribution in the direction of filling this gap, testing the cross-country comparability of synthetic measures of five dimensions (latent factors) of political culture: (1) social capital; (2) moral values; (3) confidence in institutions; (4) image of democracy; and (5) left-right conflict representation. This measurement invariance test will serve as a base for conducting cross-cultural analyses on the effects of political culture on party choice and turnout in one of the data book chapter of the True European Voter project. Choosing appropriate measures for the analysis of cross-cultural data is, however, a crucial topic to a much broader group of scholars.

Our final aim is to construct a dataset with valid macro-level context variables, using countries in particular points of time as unit of observation. Since the set of indicators for the chosen dimensions of political culture can be measured only at the individual level, we need to transform them into synthetic variables. Before to do that, however, we need a preliminary data validation. Assuming that a latent factor exists for each of the dimensions outlined, run confirmatory factor analysis for each country-time unit using the last edition of the European Values Study (EVS). Then, in order to check their comparability across country/time, we assessed the measurement invariance by putting restrictions on the measurement model, using the procedure of multigroup confirmatory factor analysis (MGCFA). We tested the three forms of invariance that are important for cross-national comparative research: *configural* invariance, which implies that the measurement model hold across country/time but that comparisons of the measures are still not meaningful; *metric* invariance, which implies that configural invariance holds and that comparison of relationships between unstandardized measures become meaningful; and *scalar* invariance, which implies that metric invariance holds and it also becomes meaningful to compare the means of the measures (Meredith, 1993; Davidov, Schmidt and Billiet, 2011). We were able to check whether the difference in dimensions of political culture across country/time can simply be attributed to error scores or they instead reflect true scores in the real world. Results are mixed but points in a promising direction for political culture cross-country analysis.

Keywords: political culture; measurement equivalence; multi-group confirmatory factor analysis

1. Introduction

The concept of political culture occupies a central place in political science and sociology of politics. Culture in general and political culture in particular is a cognitive framework organizing the world, it helps locate the self and others in the social reality, by defining and interpreting the motives and deeds of others. It allows understanding and linking collective identities to political action, and serves to mobilize citizens to take action when deemed necessary. Political culture serves then as a heuristic device, as a cue when deciding about political and social identities, cleavage lines and the nature and content of the "we"—"them" opposition.

Political culture is usually related to the idea of political stability in general and persistence of democratic regimes in particular. The bottom-line is that democracy survives and thrives only if assisted by a "relevant" political culture. This derives from attitudes of citizens, which are acquired in a long process of socialization, become internalized and ultimately gain autonomous status by being treated as *value orientations* (Van Deth & Scarbrough 1995). However, given the varieties of theoretical perspectives that address the *political culture*, it comes with no surprise that concept remains vague and hard to be operationalized.

Political culture concept is vague since it refers to phenomenon that shifts easily from the individual to the aggregate level. Even some of the most relevant authors of political culture tend to move in their definition from micro to macro level. Almond and Verba (1963), for instance, defined political culture on the one hand as the "distribution of patterns of orientation" and on the other as "the beliefs and attitudes system implying that political culture might be more than an aggregation of individual orientations."

Although political culture implicitly refers to macro-level phenomenon, this suggestion does not mean that political culture is phenomenologically a macro-phenomenon. Quite to the contrary, more often than not, political culture measures are created by aggregation of individual level data, provided they are reliable and temporally consistent. Adopting the Lazarsfeld words, indicators of political culture at macro level are not global in way the Gdp growth or institutions are. However, macro indicators of political culture, when derived by aggregation of micro level data, they need to be validated in order to be able to compare the political culture of different countries through comparative analysis.

In relevant literature, equivalence of measurement instruments is a well-established pre-requisite for cross-country comparisons. This implies that, in order to be able to make a comparative study, the meanings of individual-level terms and concepts used to obtain a macro level variable should not vary across countries. A statistical test of the equivalence of measurement instruments is therefore crucial in order to make accurate interpretations of results (van Deth 1998, 2009; Billiet, 2003; Ariely and Davidov, 2012). However, while it is widely recognize the pre-requisite of equivalence, the great majority of comparative studies take this equivalence for granted, as a non-tested preliminary assumption. Astonishing little literature exists on issues related to applied measurement equivalence. Ariely and Davidov examined 82 cross-national studies published in nine major political science journals from 2000 to 2009 and discovered that "only about a quarter of the papers have tried to establish the equivalence of meaning across countries" (Ariely and Davidov , 2012:366). This is remarkable if we consider that comparative analysis studies should give special attention to this issue in order to prevent to impinge the validity of cross-country comparison. The absence of this test is often justified by the fact that research designs are increasingly based on a similar cross-national methodological structure, that use the same

questionnaire, sample and administration type. However, this is not enough to ensure that the meanings of constructs are the same across countries. A gap exists then between the methodological literature on this subject and applied cross-cultural research (Davidov, Schmidt, Billiet, 2011; van Deth, 2009).

Recently, attention to this issue is growing. An increasing number of scholars is dealing with the need for equivalence in comparative analysis, as a fundamental step for improving the quality of knowledge on political phenomena (van Deth, 1998; 2009; Ariely and Davidod, 2012). For what concerns political culture and political attitudes, we are aware of only a few number of studies that deal with issues of equivalence: a study on political knowledge (Elff, 2009), on nationalism and patriotism (Davidov, 2009), on democratic support (Ariely and Davidov, 2011), on trust in political institution (Marien, 2011), and on political support (Guglielmi, 2012).

The present work will seek to offer a contribution in the direction of filling this gap. In this paper we want to present a methodological exercise, part of a preliminary exploratory work within the wider project of the *True European Voter* (TEV). The TEV project has three scientific focuses. Due to the variety of national traditions of electoral research in Europe, one focus looks back in time and identifies and compares the major research strategies and findings in the different COST countries. The second focus is on the comparability of data that have been collected by the National Election Studies and it aims to build a common data set which includes the findings of National Election Studies from all the COST countries with a tradition of empirical electoral research. A third focus is on the development of a common theoretical framework and research agenda. Within the TEV project, great relevance is given to investigating the moderating effects of different dimensions of context on the individual level model of political behaviour, which is to be investigated with a multi-level data structure. In order to do this, it is necessary to construct a dataset with valid macro-level context variables, using countries in particular points of time as unit of observation.

In this paper, our interest lies on the dimensions of context connected to political culture. Since political culture will be measured through individual level indicators, we need to find a good strategy to transform them into synthetic variables. Before to create aggregate measure for political culture at the country/election level, however, we aim at demonstrating a procedure through which the factorial invariance of specific dimensions of political culture can be tested. The goal of this study is then to check whether empirical measures for five dimensions (latent factors) of political culture attitudes are invariant across different European democracies. Several methods have been developed for such purpose. In this work measurement invariance will be tested using Multigroup Confirmatory Factor Analyses (MGCFA). Data from the European Values Study (EVS, wave 4, 2008-2010) are utilized in a subset of 26 European countries. This measurement invariance test will serve as a base for conducting cross-cultural analyses on the moderating effects of political culture on party choice and turnout in one of the data book chapter of the TEV project. Choosing appropriate measures for the analysis of cross-cultural data is, however, a crucial topic to a much broader group of scholars. We will test whether political cultures of European countries can be compared, by assessing whether the difference in dimensions of political culture across country/time reflect true scores in the real world or they instead can be attributed only to error scores.

2. Political Culture Dimensions

Political culture is a multi-dimensional concept. In this paper, we understand this construct mainly in two ways, that may be broken down respectively into three and two different dimensions. On the one hand, we understand political culture as "civic" culture, that is as subjective orientations of *citizens*. Citizens are not necessarily electors. This meaning of political culture is connected to the attitudes towards society, democracy and the institutions of a country, and do not necessarily translate in indications for party choice.

Conceptualization of the *political culture* in these terms is predominantly, though not exclusively dominated by psychosocial approaches. The classical example being Almond and Verba's *The Civic Culture* (1963). Right at the outset they declare that "we employ the concept of culture in only one of its meanings: that of psychological orientations toward social objects" (1963: 14). By psychological orientations, as expected, they mean attitudes. "Attitude is a propensity of an individual to perceive, interpret and act toward a particular subject in particular ways" (p.13). Furthermore: "Political culture of a nation is the particular distribution of patterns of orientations toward political objects among the members of the nation"(…) "The term political culture … refers to the specifically political orientations – attitudes toward the political system and its various parts, and attitudes toward the role of the self in the system"(pp.14-15).

The *Civic Culture* tradition was both welcomed and heavily criticized. It also referred and interacted with Easton's proposal of regime conceptualization, which was conceived as comprising of three elements – values (goals and principles), norms and structure of authority. This brings us very close to neo-institutionalism and the importance attributed by many scholars to the institutional infrastructure of a given polity, which enjoys considerable autonomy. Reacting to these development Almond and Verba (1978) and thereafter Almond (1980; 1990) defined what seems to us in this project of crucial importance the concept of *system culture*, as one of the three elements of the core concept of political culture. "The system culture of a nation would consist of the distributions of attitudes toward the national community, the regime, and the authorities, to use David Easton's formulation. These would include the sense of national identity, attitudes toward the legitimacy of the regime and its various institutions, and attitudes towards the legitimacy and effectiveness of the various political roles" (1990: 153).

As part of this view of political culture three dimensions could be listed: social capital, confidence in institutions and images of democracy.

Social Capital

Contrary to the micro-level approach to social capital (Bourdieu, 1968), the macro-level approach focuses on the larger benefits for society as a whole, beyond the actual network members (Putnam 1993; 1995; Coleman, 1990). The latter is the approach that we believe is related to political culture. On the one hand, with *Making democracy work* (1993), Putnam puts forward an idea of social capital in which the attitudinal content of the networks are crucial, since they are supposed to inculcate civic attitudes in *citizens*, such as trust and norms of reciprocity. He defines social capital as "features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam, 1995: 67). His view is that a society with high levels of social capital is an altruistic society. On the other hand, Coleman (1990) includes in his definition of social capital the concept of social structure as a cultural orientation. He claims that "social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social

structure, and they facilitate certain actions of individuals who are within the structure" (1990: 302). According to this author, social capital depends then on two elements: trustworthiness of the social environment (i.e. obligations will be repaid) and the actual extent of obligations held. The system of norms, obligations and expectations of the social structure makes the social contract unnecessary and gives stability to social behaviour. Thus, in Coleman's view, a society with high level social capital is not the altruistic society of Putnam, but a society that is able to better handle social conflict.

Confidence in Institutions

Confidence in institutions is part of the political culture because institutions are strongly related to social capital. Although the "new institutionalism" and the society-centred approach of social capital have been mostly disconnected, the institution-centred accounts of social capital theory claim that "for social capital to flourish, it needs to be embedded in and linked to the political context as well as formal political and legal institutions" (Rothstein and Stolle, 2008). In literature related to institutional confidence, the issue of dimensionality is an old one (Listhaug and Wiberg, 1995; Newton and Norris, 2000; Rothstein and Stolle, 2001; Dalton, 2004; Zmerly, Newton and Montero, 2007; Segatti, 2007), although it has not often been empirically addressed in great details (for an overview see Cook and Gronke, 2001). Solving the problem of dimensionality, however, would allow us to address substantive questions in a sharper way. According to Rothstein and Stolle (2008), confidence in political institutions should be distinguished from confidence in order institutions. One of the main roles of the former is indeed to be partisan, while the latter are generally even-handed or impartial. Following this view, we then argue, contrary to common wisdom and mainstream literature, that confidence in political institutions and order institutions is likely to reflect a unique dimension instead of two. Order institutions (i.e. police , army) tend to be considered more trustworthy by *citizens* than others because their internal structure is based on predictable rules, while institutions that involve political conflict tend to be considered less trustworthy because they are less predictable and they are an arena for irregular interactions. Yet, we believe that the latent factor behind confidence in all institutions is still one (see also Segatti, 2007; Hardin, 2002).

Images of Democracy

Another way to capture political culture is through the predominant image of democracy that citizens of a country have. If citizens of a country have either a tendency to avoid confict (Hibbing and Theiss Morse, 2002), or a tendency towards authoritarism, they will tend to prefer strong leaders, with good conflict resolution abilities. Also, they will tend to prefer expert governments, who are perceived as being above partisan conflicts of parties, since they have the knowledge of what is right and what is wrong for the "good" of the country. This relates to political culture because if *citizens* are not willing to talk about ideas that differ from one's own they are also automatically delegitimizing the role of (partisan) political parties in society.

On the other hand, we understand political culture as subjective orientations of the *electorate*. Political culture is the tendency of electors of certain countries to have certain preferences on specific issues that might (or not) affect party choice. These electoral preferences are then more directly connected to party preferences and voting than political culture understood as "civic

culture". As part of this view of political culture two dimensions could be included: moral values and conflict representation of politics.

Moral Values

This dimension of political culture, as defined by Welzel and Inglehart, is constituted by people's values, beliefs and attitudes which are predominant in given country-time. According to these authors, despite the fact that in almost every society vast majority of respondents would agree that democracy is the best political regime, we can look more deeply insight people's values. It is possible to examine more hidden levels of people's attitudes and assess whether they are more related to the logic of democratic institutions or to the logic of authoritarian ones. To some extent a similar approach to people's values, beliefs and attitudes is presented by Marc and Hoghe (2002), who distinguished two poles of values. One is described as *gal* and relates to ecology (Greenness), Alternative politics and Libertarianism. The other pole is called *tan* and combines such items as support for Traditional and Authoritarian values and defence of the National community. In our analyses we use people's attitudes towards controversial issues such issues like abortion, divorce and euthanasia, that we are calling moral values.

Conflict Representation

With social representation of the political conflict, we understand the social representation of the right-left dimension of politics. The distinction between right and left is a social representation of the political space of a society and it implies a conflict dimension. This conflict dimension, however, is not channelled always in the same way, but it varies across countries and time. There are two classical interpretations of this conflict. Traditionally, in Northern European countries the left/right conflict is based on ideological preferences based on economic issues, which could be reduced to the choice between being pro-market or anti-market. In other countries, instead, such as in Southern Europe, the left/right conflict tends to be less based on economy, and more based on partisanship. Different modes of conflict representations and the perceptions that *electors* have of this conflict are then a crucial feature of political cultures.

3. Methodology

Data

We will test invariance of political culture in 26 countries within the European Union. The choice of countries relates to the countries included in the COST-Action project *The True European Voter*. Empirical data come from the fourth wave of the European Values Study (EVS, wave 4, 2008-2010). The following list refers to the countries selected: Austria, Belgium, Bulgaria, Croatia, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, Great Britain.

The European Values Studies (EVS) is a large-scale, cross-national, and longitudinal survey research program on basic human values. It provides insights into the ideas, beliefs, preferences, attitudes, values and opinions of citizens all over Europe on issues related to life, family, work, religion, politics and society. The EVS started in 1981, and every nine years the survey is repeated in an increasing number of countries (1981, 1990, 1999). The fourth wave in 2008 covers 47 European countries/regions with a total of about 70,000 interviewed people in Europe. A

representative multi-stage or stratified random sample of the adult population of the country 18 years old and older (except Finland 18 to 74 years) was used for the EVS 2008. The net sample size (in the sense of completed interviews) is 1500 respondents per country[1]. In all countries, the EVS questionnaires were administered as face-to-face interviews in the appropriate national language(s). As far as the data capture is concerned, CAPI or PAPI was used in nearly all countries. Exceptions are Finland (internet panel) and Sweden (postal survey)[2].

Indicators of Political Culture Dimensions

The operational definition of political culture involves the five dimensions outlined above: social capital, moral values, confidence in institutions, image of democracy and conflict representation. For *Social Capital* operationalization, we focus on two aspects: horizontal trust and social participation. Horizontal trust is perceived as facilitator of cooperation of citizens on public sphere, while social participation relates to particular actions of citizens that nurtures either the solidarity between individuals (Putnam approach) or it reduces the uncertainty for individuals in their social action (Coleman approach). *Moral values* is operationalized through a list of evaluations of justification of personal controversial decisions. *Confidence in institutions* is operationalized through individual confidence in a list of order and political institutions. *Image of Democracy* is operationalized with the tendency for conflict avoidance and authoritarian solutions. Left-Right *Conflict Representation* is reduced to the operationalization of opinions on the economic issue of being pro or against the market.

From the fourth wave of the EVS questionnaire we then select the following indicators (See the Appendix I for the list of questions):

1) *Social Capital*: two kinds of indicators were used here: (a) belonging to organisation or activities like welfare organisation, cultural activities, local community action, thirld world-development/human rights, youth work, voluntary health organisations and (b) horizontal trust (also known as generalized trust) – most people can be trusted versus cannot be to careful.
2) *Moral Values*: approval of abortion if woman is not married, approval of abortion if couple does not want more children, justification of divorce, and justification of euthanasia.
3) *Confidence in Institutions*: confidence in army, police, civil service and justice system (order) and parliament (politics).
4) *Images of Democracy*: strong leader, experts making decisions, the army ruling, democracy is indecisive, democracy cannot maintain order
5) *Conflict Representation*: private vs. government ownership business, individual vs. state responsibility for providing…, competition good vs. harmful for people.

The aim of the empirical analysis of the next sections is to answer to the following research questions: are the theory-driven models coherent with interviewees' perceptions; and if so, are the models equivalent (and therefore comparable) across countries?

[1] Except Iceland (808), Ireland (1013), Norway (1090), Finland (1134), Sweden (1187), Switzerland (1272) France (random sample: 1501, two additional quota samples: 1570), Germany (disproportional sample East: 1004, West: 1071).

[2] The English basic questionnaire was translated into other languages by means of the questionnaire translation system WebTrans, a web-based translation platform designed by Gallup Europe. For country-specific information, see EVS http://www.europeanvaluesstudy.eu/

Testing invariance using the Multigroup Confirmatory Factor Analyses

Measurement equivalence of the five dimensions of social capital, moral values, confidence in institutions, image of democracy and conflict representation will be tested using Multigroup Confirmatory Factor Analyses (MGCFA) with Mplus software (ver 6). The MGCFA is the most common approach to test cross-national measurement equivalence (Jöreskog, 1971; Bollen, 1989; Billiet, 2002; Ariely and Davidov, 2012; Davidov, Schmidt, Billiet, 2011).

The MGCFA establishes measurement invariance or equivalence through a hierarchy of tests ordered by level of strictness (Steenkamp and Baumgartner, 1998; Vanderberg and Lance, 2000). We will test the three forms of invariance that are important for cross-national comparative research:

a. *configural invariance*, which implies that the measurement model hold across country/time (similar pattern) but that comparisons of the measures are still not meaningful;

b. *full metric invariance*, which implies that configural invariance holds and that comparison of relationships between unstandardized measures become meaningful (equal factor loadings); (to establish *partial metric invariance*, at least two items per factor should still have equal factor loadings across groups).

c. and *full scalar invariance*, which implies that metric invariance holds and it also becomes meaningful to compare the means of the measures (equal intercepts); (to establish *partial scalar invariance*, at least two items per factor should still have equal factor loadings and equal intercepts across groups) (Meredith, 1993; Davidov, Schmidt and Billiet, 2011).

The strictness of the measurement invariance required, depends on the goal of the research. Configural invariance does not ensure that different groups (country/year) understand the items in the same way. In order to be able to compare across groups, we need either metric invariance, which allows the comparison of relations between latent variables (e.g. regression coefficients), or, even better, scalar invariance, which allows to compare the means of the latent factors. Partial invariance, however, may still be sufficient for meaningful cross-cultural comparisons.

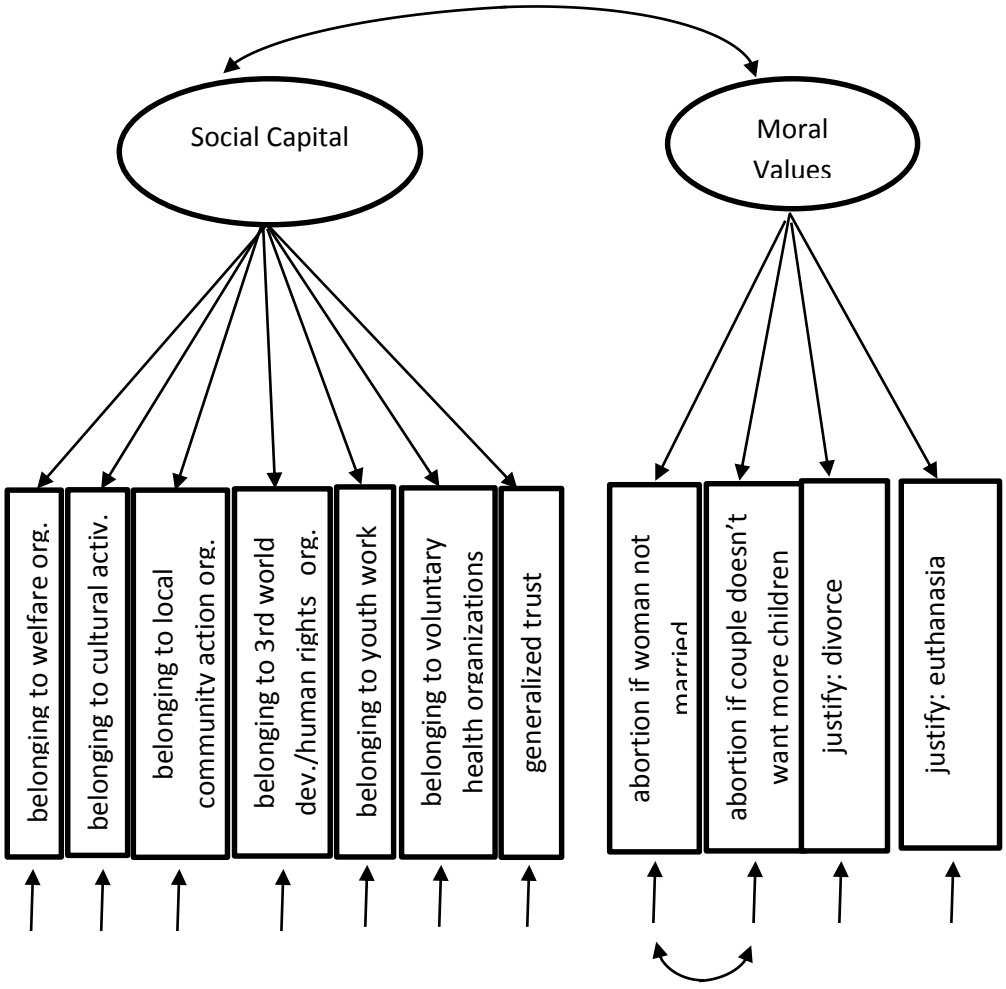
MGCFA assumes continuous variables under the assumption of multivariate normality. Several studies, however, have shown that MGCFA works well even when the data are categorical or ordinal rather than continuous or normally distributed (Davidov *et al*, 2011; De Beuckelaer's, 2011) [3]. Since the majority of the chosen indicators for the dimensions of social capital and moral values are dummies, while the chosen indicators for the dimensions of confidence in institutions, image of democracy and conflict representation are ordinal (Likert scale) or continuous variables, we decided not to mix different types of variables and to start by running two separate models, with two dimensions of political culture in the former, and three dimensions in the latter. One relevant reason for this choice is the fact that, with the Mplus programme, different estimators are used for different variable types: maximum likelihood (ML) is used with continuous/ordinal variables, while weighted least squares – mean, variance (WLSMV) is used with dummy/categorial variables.

The two measurement models are shown in Figure 1 (social capital, moral values) and Figure 2 (confidence in institutions, image of democracy and conflict representation). Latent factors are indicated in circles and each of them is connected to a certain number of items (in rectangles). The arrows next to each item indicates the errors, that relates to what the modelled latent factor is not able to explain.

[3] For different opinion, see Lubke and Muthen, 2004.

In Model 1, we model two latent factors: social capital and moral values. The number of items connected to them is seven (belonging to welfare organizations, cultural activities[4], local community action, third world development/human rights, youth work, voluntary health organizations, generalized trust) and four (abortion if woman not married, abortion if couple doesn't want more children, divorce, euthanasia) respectively. An error covariance is also added between the two items: "abortion if woman not married" and "abortion if couple doesn't want more childrens", because it is likely that these items are more connected with each other because they both deal with abortion.

Figure 1 – Model 1. The Two Factors Model of Political Culture: Social Capital and Moral Values

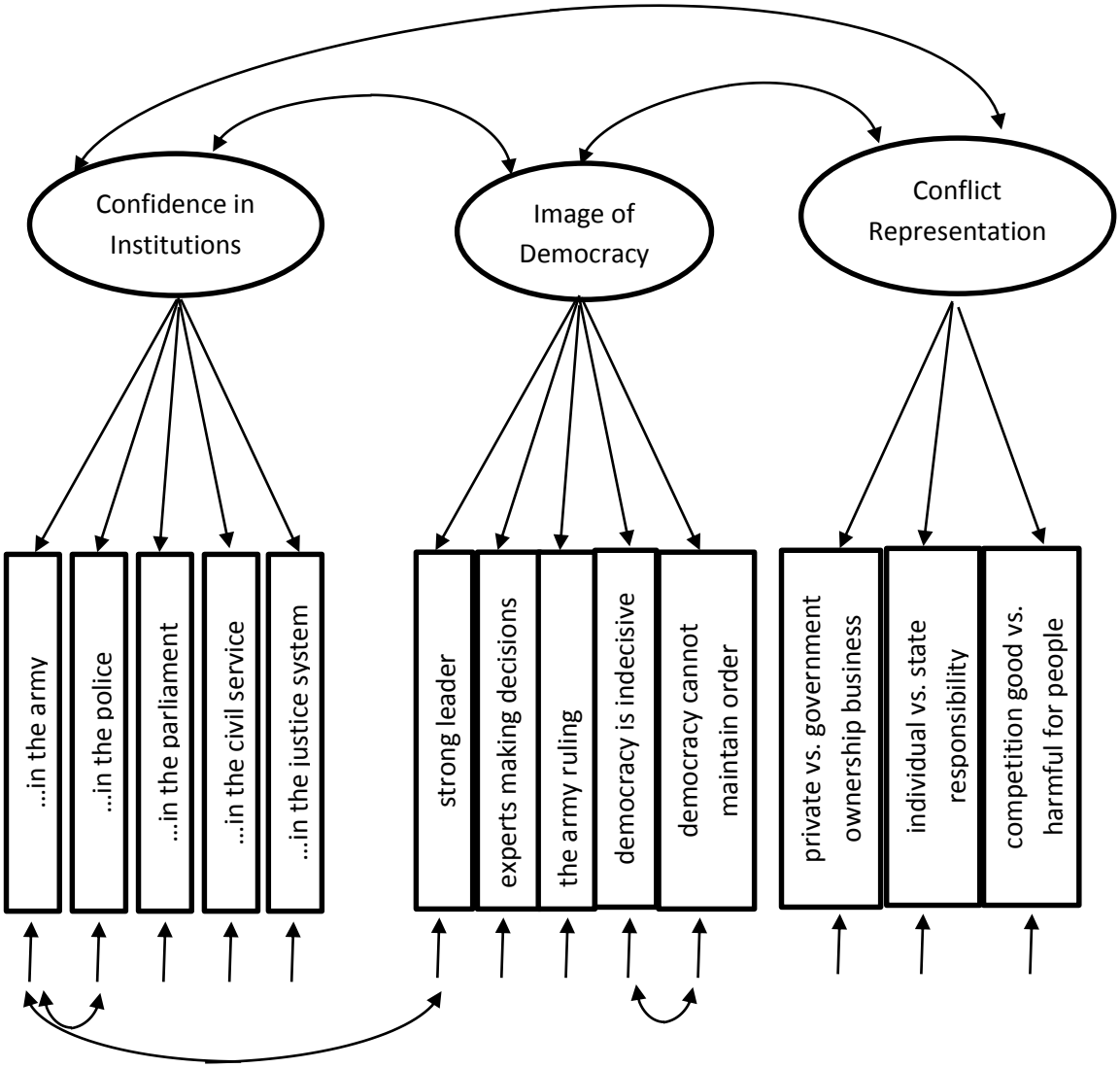


In Model 2, we model instead three latent factors: confidence in institutions, image of democracy and conflict. The number of items connected to them is five for the first and second factors (Factor 1: confidence in army, police, parliament, civil service and justice system. Factor 2: strong leader, experts making decisions, the army ruling, democracy is indecisive, democracy cannot maintain order), and three for the third factor (private vs. government ownership business, individual vs. state responsibility, competition good vs. harmful for people). We model also three error covariances between: a) confidence in the army and confidence in the police; b) confidence in

[4] Exact wording of the question: Please look carefully at the following list of voluntary organisations and activities and say which, if any, do you belong to? Education, arts, music or cultural activities.

the army and strong leader. Both of these covariance might relate to another latent factor not included in this model: authoritarianism; c) democracy is indecisive and democracy cannot maintain order, which might be also indicators of a latent factor of democracy legitimacy.

Figure 2 – Model 2. The Three Factor Model of Political Culture: Confidence in Institutions, Image of Democracy and Conflict Representation



4. Empirical analysis

4. 1. Descriptive Analysis

The descriptive level of indicators for each latent factor shows us the similarities and differences between countries (Table 1, 2, 3, 4 and 5 in Appendix II). For example, in Table 1 and Table 2 Sweden, Norway and Finland appear to be characterised by lower levels of social capital, while Italy and Poland shows a tendency towards more authoritarian values. In Table 3, 4 and 5 we can see that Bulgaria, Croatia and Serbia display the lowest levels of confidence in institutions; Sweden and Finland show a tendency towards a non-conflictive view of democracy, while Romania shows a conflictive view; Austria and Switzerland display a high tendency towards framing the conflict in market terms, while Spain displays a low one.

4.2 Single-country CFAs

Before testing the MGCFA, a crucial step is to run separate CFA for each single country. This allows us to get familiar with the structure of data in each single country and to investigate whether the confirmatory factor model we want to test adequately represent citizens' perceptions of different countries (Byrne, 2010, 2012). Several absolute model fit indixes exist for testing whether the theory-driven CFAs fit the model. The most common one is the Chi-Square test, which indicates the difference between observed and expected covariance matrices. Values closer to zero indicates a better fit and smaller difference between expected and observed covariance matrices. However, this test is affected by the sample size used in the model, so that researchers might incur in evaluating errors. Following literature indications, we report three other absolute measures in order to evaluate the fix of the model: the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residuals (SRMR) [5]:

Table 6. *Single Countries CFA – Fit Measures of the two factors model: social capital and politics-related values/beliefs/attitudes*

	N	$\chi 2$	**df**	**Rmsea**	**CFI**
Austria	1510	130.398	42	.054	.978
Belgium	1509	116.530	42	.039	.957
Bulgaria	1500	99.429	41	.059	.896
Estonia	1518	61.599	42	.024	.975
Finland	1134	41.459	42	.000	1.000
France	1501	100.571	42	.034	.948
Germany	2075	90.117	42	.039	.981
Greece	1500	50.969	42	.015	.994
Hungary	1513	118.895	42	.039	.960
Iceland	808	49.931	42	.019	.995
Italy	1519	68.592	42	.032	.974
Lithuania	1500	48.631	42	.020	.995
Netherlands	1554	181.818	42	.059	.958
Norway	1090	94.066	42	.037	.963
Poland	1510	69.023	42	.029	.997
Portugal	1553	59.227	42	.030	.997
Romania	1489	54.297	42	.024	.979
Serbia	1512	75.080	42	.033	.982
Slovenia	1366	88.360	42	.037	.968
Spain	1500	103.113	42	.047	.979
Sweden	1187	71.028	42	.038	.966
Switzerland	1272	84.489	42	.042	.961
Great Britain	1561	74.427	42	.034	.989

1) The CFI (Comparative Fit Index) (Hu and Bentler, 1999) varies from 0 to 1. Values above 0.90 are considered satisfactory. It indicates the percentage of observed covariance reproduction by the model (i.e. if CFI=0.95, then 95% of the observed covariance is reproduced by the model) and it is affected by the number of cases in the sample.
2) The RMSEA (Root Mean Square Error of Approximation) avoids issues of sample size by investigating the discrepancy between the hypothesized model, with optimally chosen

[5] In the analyses related to social capital and conservative-libertarian values which are based on categorical observable variables we did not obtain SRMS measure

parameter estimates, and the population covariance matrix. The range of the RMSEA is from 0 to 1, with smaller values indicating better model fit (the value 0 indicates a perfect fit of data). A value of .06 or less indicates an acceptable model fit. However, values equal or lower than 0.08 are also accepted as indicators of satisfactory level of fit (Browne and Cudeck, 1993).

3) The SRMR (Standardized Root Mean Square Residuals) is defined as the standardized square root of the discrepancy between the sample (observed) correlation matrix and the model (predicted) correlation matrix. The SRMR has no penalty for model complexity, and its values range from 0 to 1, with smaller values indicating better model fit. A value equal or lower than .08 is generally considered a good fit (Hu and Bentler, 1999).

Table 6 presents results for CFAs of Model 1 (social capital and moral values). In each country we tested the same structural model of relationships between observable variables and latent factors. We excluded Croatia, Ireland and Turkey from the analysis because either set of indications was not present or the number of missing in the dataset was extremely high. As we can see the models are quite well fit to the data in all the 23 countries. However, we should stress here that not in every country all variables included in the models are statistically significant. As far as latent variable of social capital is concerned, the "horizontal trust" variable is not statistically significant for the latent factor of social capital in such countries as Germany, Lithuania, Poland, Portugal, Romania and Serbia; "belonging to youth work organizations" is not significant for the social capital factor in Finland, Norway and Sweden; "belonging to local community action" is not significant in Lithuania and "belonging to voluntary health organizations" is not significant in Iceland. Lack of significance of belonging variables in particular associations could be caused by the fact, that in given countries certain type of organization are not very popular compared to others. In case of the latent variable factor related to moral values, all observable indicators included in analysis were statistically significant in every country. In multigroup invariance testing, however, we used the original model as a baseline, ignoring the fact that in some countries certain observed variables were not significant.

Table 7 shows that the three factors model holds in all countries, with the exception of Croatia, Hungary and Portugal, in which the model tested is not identified. This indicates that in these countries this structure does not correspond to citizens' perceptions. Also the model of Switzerland and Poland presents some problems with estimation. In the former case the variable "strong leader" is undefined, in the latter the indicator "experts making decisions" is not significant. In all other countries, the factor loadings are significant. However, it is the relation between latent factors that is not always significant. This means that the latent factors, in some countries, might be independent. This is particularly the case of conflict representation, which appears to be less related to the other factors[6]. Also, the relation between "strong leader" and "the army ruling" is not significant in 11 countries, out of 22[7]: Belgium, France, Greece, Iceland, Ireland, Italy, Lithuania, Netherlands, Serbia, Spain, Great Britain. We decide to run the *configural equivalence* test both with the original model, and the model without this connection between residuals covariance and see which model gives better fit. Finally, the model of Turkey points to an acceptable but not entirely satisfying fit

[6] In the specific: conflict representation and confidence in institutions in Belgium, France, Great Britain, Iceland, Ireland, Netherlands, Romania, Serbia; conflict representation and image of democracy in France, Great Britain, Iceland, Netherlands, Turkey; image of democracy and confidence in institutions: Great Britain, Greece, Iceland, Ireland, Italy, Lithuania, Spain and Poland.

[7] Excluding Croatia, Hungary, Portugal and Switzerland.

indices. In several country models modification indices suggest that models could be improved by freeing the covariance between the residuals of some observed variables, indicating that in some countries the correspondence between two items is stronger than in other countries. However, since our goal is the fit of the confirmatory factor analysis in each country before testing the equivalence of the measurement model across countries, we choose to start with the most parsimonious model.

From this first single-country analysis, we have discovered that the latent factors of social capital and moral values have the same meaning and a similar basic structure in 23 countries out of 23, while confidence in institutions, image of democracy and conflict representation have the same meaning and a similar basic structure in 22 countries out of 26. Croatia, Hungary, Portugal and Switzerland will not be included in the subsequent analyses of Model 2 either because the structure of the measurement model does not hold or because of other estimation problems. Poland will be included, even if one factor loading is not significant.

Table 7. Single Countries CFA – Fit Measures of the three factors model of: confidence in institutions, image of democracy, conflict representation.

	N	***χ2***	**df**	**Rmsea**	**CFI**	**Srmr**
Austria	1510	342.331	59	.056	.923	.045
Belgium	1509	336.888	59	.056	.880	.052
Bulgaria	1500	237.469	59	.045	**.950**	.046
Croatia	1525	No convergence – Model non identified				
Estonia	1518	300.281	59	.052	.899	.042
Finland	1134	271.195	59	.057	.920	.048
France	1501	345.295	59	.057	.887	.053
Germany	2075	327.251	59	.047	**.942**	.034
Greece	1500	148.023	59	**.032**	**.973**	.032
Hungary	1513	No convergence – Model non identified				
Iceland	808	205.565	59	.056	.875	.052
Ireland	1013	148.940	59	**.039**	**.957**	.042
Italy	1519	290.372	59	.051	.921	.049
Lithuania	1500	347.198	59	.057	.900	.050
Netherlands	1554	293.075	59	.051	.920	.053
Norway	1090	261.292	59	.056	.901	.056
Poland*	1510	202.578	59	.040	**.953**	.041
Portugal	1553	No convergence – Model non identified				
Romania	1489	307.013	59	.053	.911	.041
Serbia	1512	261.181	59	.048	.942	.045
Slovenia	1366	153.177	59	**.034**	**.961**	.035
Spain	1500	228.237	59	.044	.918	.047
Sweden	1187	294.218	59	.058	.926	.057
Switzerland**	1272	250.081	59	.050	.918	.050
Turkey	2384	684.307	59	.067	.900	.051
Great Britain	1561	194.634	59	.038	.952	.041

Note: * In the model of Poland the indicator “experts making decisions” is not significant.

** In the model of Switzerland the variable “strong leader” is undefined and therefore the model does not estimate its residuals, nor the link between “strong leader” and “the army ruling”.

4.3 Multigroup Confirmatory Factor Analyses (MGCFA)

In order to test the model invariance through MGCFA, we will adopt a bottom-up strategy, moving from the less restrictive model to the most restrictive one[8]. First, we test the *configural* equality, the least restrictive model, which does not impose equal constraints between countries on factor loadings or intercepts. Secondly, we test the *metric* equality, by imposing equality constraints on factor loadings across countries. Thirdly, we test the *scalar* equality, by imposing equality constraints on intercepts. We stop the process when the fit of the new model is significantly worse than the previous model. In order to avoid that our new model is rejected, the comparison with the model with no constraints must not be significant. Only very small differences in the CFI (ΔCFI) is allowed: if the absolute value of the differential is of 0.01 or smaller, the invariance hypothesis should not be rejected; values over 0.02 indicates instead a lack of invariance; finally, values between 0.01 and 0.02 suggest that some difference may exist between models (Cheung and Rensvold, 2002)[9].

When testing Model 1, the one related to social capital and moral values, we failed to obtain *configural invariance* model. This test is done by running CFA models simultaneously on the 23 selected countries, without imposing any equality constraints. If successful, this invariance ensures that the factorial structure is similar in different countries, or whether a latent factor has the same meaning and basic structure across groups. This, however, is a necessary but not sufficient condition in order to make comparisons across groups, neither in terms of observed variables, nor in terms of latent variables. After a dozen of hours of estimation, the process was still not completed and we decided to interrupt it manually [10]. Despite the lack of success in estimating *configural invariance* model, however, we decided to run the more restrictive tests of *metric* and *scalar invariance* models, and we were successful (see Table 8). In the case of *metric invariance,* in which equal factor loadings are imposed, we obtain extremely good model fits: a Rmsea of 0.45 and a CFI=973). Both of these values indicate very high level of goodness of fit, which in this case means that there is an equivalence not only of the structure of latent factors across countries (that we were not able to measure), but also an equivalence of factor loadings across the countries we investigated. Factorial loadings define the metrics, or, in other words, it informs us about how far a change in the latent score determines a change in the observed score. However, this result must be taken carefully, since we are not able to calculate the net worsening of the model (ΔCFI >0.02) in order to verify whether the conditions for metric invariance are satisfied. Also, Bulgaria, Germany and Hungary have been excluded from the analysis because we encountered problems with the two items of abortion.

We then move to the more restrictive *full scalar* invariance, in which besides equality of factor loadings, also equality of intercepts related to observable variables is imposed on the model. Since the model has more constrained of equality, we should expect a worse model fit than *metric* equivalence. Model fits are still acceptable: value of the Rmsea is 0.075 and value of CFI is 0.910.

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[8] In the syntax, we fix the latent means of all factors at zero for all groups. In multigroup analysis, Mplus, by default, fixes factor means and intercepts to zero for the first group, while these parameters are freely estimated for all remaining groups. This default, however, is relevant only when the estimation of latent factor means is of interest, which is not the case here.

[9] Mplus drops cases with missing values on any of the predictors. In this specific case, EVS data set contains cases with missing on all variables (2 factors model n=4 3 factors model n=69). These cases were not included in the analysis.

[10] This could happened because of at least two reasons. Firstly, configural equivalence model is the most complex model among multi-group models (more parameters to estimate). Secondly, because of the presence of categorical variables in our model, we use WLSMV (weighted least squares – mean, variance) estimator, which operates in a more complex way than traditional ML (maximum likelihood) estimators.

The differential between the CFI obtained through metric equality and the CFI obtained through scalar equality, however, is greater than 0.02, meaning that the conditions for scalar invariance are not satisfied. At first glance one could say that we have found evidence for the *metric* equivalence of the multi-group model but we have not found evidence for the *full scalar* equivalence. However, we must be cautious about such conclusion. Since we did not manage to obtain *configural equivalence*, we are not able to assess whether the condition of net worsening of models moving from configural to scalar is satisfied. Also, this might hide some problems with the model that we were not able to discover. For this reason, at the moment, we do not try to find a *partial scalar equivalence* solution. Assuming that the net worsening of the model between configural and metric equivalence is less than 0.02, we could claim that it is legitimate to compare 20 countries in terms of structure and of correlation coefficients (factor loadings). However, we cannot compare them in terms of item means.

Table 8. *MGCFA Fit Measures across countries for the two factors model of: social capital and moral values.*

	N Countries	***χ2***	**Df**	**CFI**	**Rmsea**	**ΔCFI**
Configural equivalence	N/A - Estimation problems					
Full metric equivalence	20	2120	878	.973	.045	--
Full scalar equivalence	20	5186	1049	.910	.075	.063

We now move to the invariance tests of Model 2, the model that includes the three political culture factors of confidence in institutions, image of democracy and conflict representation. First of all, we test the *configural equivalence*, the basic level of invariance. This test is done by running CFA models simultaneously on the 22 selected countries (with Croatia, Hungary, Portugal and Swizerland excluded from the sample), without imposing any equality constraints. In Table 9 we can see that the model fits for this test reach satisfying levels (CFI: 0.921; Rmsea: 0.052; Srmr: .049). As mentioned before, we also run the configural equivalence excluding the link between "the army ruling" and "strong leader". However, since model fits are slightly worse than the previous model, we decide to stick to the original model for further analysis (CFI: 0.916; Rmsea: 0.053; Srmr: .052)

We then move to test the *metric equivalence*, that is we run CFA models simultaneously on the 22 selected countries, while imposing equality constraints on factor loadings across groups. As Table 9 indicates, tests for metric equivalence could be improved, but they are at acceptable levels (CFI: 0.894; Rmsea: 0.056; Srmr: .063). However, the net worsening of the model (ΔCFI >0.02) informs us that the conditions for metric invariance are not satisfied. Looking at modification indexes, we see that the differences in the metrics particularly regards mainly 7 countries: Bulgaria, Finland, Germany, Romania, Serbia, Slovenia and Turkey. Here different factorial structures and factor loadings emerge compared to the other 16 countries. The hypothesis of metric invariance should be rejected because of different factor loadings and residuals covariance in different countries.

However, we can continue our analysis by releasing some equality constraints and adding connections between items as indicated by modification indexes (provided the connection make theoretical sense). In Bulgaria, the latent factor "conflict representation" should be connected with

the item "experts making decisions". In Finland, residuals of items of "confidence in civil service" and "confidence in parliament" should be related. In Germany, the factor loading between the latent factor "confidence in institutions" and the indicator "confidence in the army" should not be constrained as equal, and the same is true for the factor loading between the latent factor "image of democracy" and the indicator "the army ruling". Also, on the one hand residuals of item "confidence in justice system" should be connected with items "confidence in parliament" and "confidence in the police"; on the other hand residuals of item "confidence in civil service" should be connected with the item "confidence in parliament". In Romania, residuals of item "confidence in justice system" should be connected with the item "confidence in the police", and residuals of "democracy cannot maintain order" and the "army ruling" should be linked. In Serbia, the factor loading between the latent factor "conflict representation" and the indicator "competition is good vs. harmful for people" should not be constrained as equal. Also, a link should be established between the latent factor "image of democracy" and the indicator "competition is good vs. harmful for people". Finally, a connection should be established between item residuals of "the army ruling" and "confidence in the army", as well as between "private vs. government ownership business" and "individual vs. state responsibility". In Slovenia, a connection should be done between item residuals of "confidence in parliament" and "confidence in civil service". In Turkey, the factor loading between the latent factor "image of democracy" and the indicator "the army ruling" should not be constrained as equal. Also, a connection should be established between item residuals of "democracy cannot maintain order" with "the army ruling" and "competition good vs. harmful for people". Moreover, a connection should also be established between item residuals of "confidence in parliament" and "confidence in civil service". After releasing the equality constraints and having added the connection suggested above, we test the *partial metric equivalence.* We now see that the fit of the model has strongly improved and the invariance hypothesis should not be rejected (ΔCFI smaller than 0.01).

Table 9. *MGCFA Fit Measures across 22 countries for the three factors model of: confidence in institutions, image of democracy, conflict representation*

	Note	***N Countries***	***χ2***	**df**	**CFI**	**Rmsea**	**Srmr**	**ΔCFI**
Configural equivalence (original model)	All factor structures constrained	22	6431.693	1303	0.921	0.052	0.049	--
Configural equivalence (without link "army ruling" and "strong leader")	All factor structures constrained	22	6834.576	1325	0.916	0.053	0.052	--
Full metric equivalence (original model)	All factor loadings constraints	22	8451.519	1508	0.894	0.056	0.063	0.027
Partial metric equivalence	Some factor loadings not constrained in 7 countries	22	7199.038	1490	0.913	0.051	0.058	0.008
Partial scalar equivalence	All intercepts constrained	22	37405.355	1763	0.454	0.118	0.192	0.467
Partial scalar equivalence (without Serbia)	All intercepts constrained	21	34425.075	1685	0.470	0.115	0.184	0.451
Partial scalar equivalence	Some intercepts not constrained	21	16337.174	1608	0.762	0.079	0.108	0.159

Finally, starting from the factor loading and residuals modification made to the groups through metric equivalence test, we test the *partial scalar equivalence*, in which items intercepts are fixed as equal across groups. The first step is to exclude Serbia from our test, because the covariance matrix (theta) in this country is not positive definite[11]. Table 9 indicates, however, that partial scalar equivalence is not achieved (ΔCFI >0.02), neither for the model including Serbia, nor for the one excluding Serbia. And this is true even when we reach not satisfying, but acceptable levels of model fits, by releasing the constraints of some intercepts in a few selected countries[12]. These results lead us to the conclusion that we can legitimately compare these 21 countries only in terms of correlation coefficients (factor loadings), but not in terms of differences between means.

5. Conclusions

As part of the wider project *The True European Voter,* we need to construct macro-indicators of political culture starting from individual level variables. In this study we run a methodological exercise with the fourth wave of the EVS in order to validate the relationship between individual items and latent variables in our data, the necessary step in order to make any cross-country comparison. Our aim was to answer to two main research questions, one concerning the validity of the theory-driven structure of political culture, and the other concerning the invariance of this structure across countries.

Taking hints from different strands of literature we defined political culture as both the subjective orientations of *citizens* towards democracy, society and institutions and of *electors* towards specific issues. We then defined five dimensions: social capital, moral values, confidence in institutions, image of democracy and conflict representation. Taking into account the different type of data we were dealing with (dummy vs. ordinal or continuous), we built two theory-driven models for political culture. Model 1 included two latent factors and mainly dummy items: social

[11] This could indicate a negative variance/residual variance for an observed variable, a correlation grater or equal to one between two observed variables, or a linear dependency among more than two observed variables. In this case the problem involved the item "private vs. government ownership business". We decided to exclude the country in further analysis to avoid complications.

[12] Austria: confidence in the justice system, confidence in the army, democracy cannot maintain order, individual vs. state responsibility. Belgium: confidence in the justice system, confidence in the army, private vs. government ownership business, competition good vs. harmful for people, experts making decisions. Latent factors: confidence in institutions and image of democracy. Bulgaria: democracy is indecisive, democracy cannot maintain order, experts making decisions. Estonia: confidence in civil service, private vs. government ownership business. Finland: confidence in the army, confidence in the police, confidence in the justice system. Latent factor: image of democracy.
France: competition good vs. harmful for people, democracy is indecisive. Latent factor: confidence in institutions. Germany: confidence in the army, confidence in the police, confidence in the civil service, experts making decisions, the army ruling, private vs. government ownership business, competition good vs. harmful for people. Latent factor: image of democracy. Iceland: confidence in the police, competition good vs. harmful for people, democracy is indecisive, the army ruling. Latent factor: confidence in institutions. Italy: individual vs. state responsibility. Latent factor: image of democracy. Lithuania: confidence in the army, strong leader. Latent factor: confidence in institutions. Netherlands: confidence in the army, confidence in parliament, competition good vs. harmful for people, strong leader. Norway: confidence in the army, confidence in parliament, confidence in the justice system. Latent factor: confidence in institutions. Poland: democracy cannot maintain order, experts making decisions, the army ruling. Latent factor: confidence in institutions.
Romania: confidence in the army, competition good vs. harmful for people. Latent factor: confidence in institutions, image of democracy, conflict representation. Slovenia: confidence in parliament, democracy cannot maintain order, experts making decisions. Spain: confidence in parliament, democracy cannot maintain order. Latent factor: conflict representation. Sweden: confidence in the army, confidence in parliament. Latent factor: image of democracy. Turkey: confidence in the army, confidence in the justice system, strong leader, the army ruling, experts making decisions. Latent factor: confidence in institutions. Great Britain: confidence in the army, confidence in parliament, individual vs. state responsibility. Latent factor: conflict representation.

capital and moral values. Model 2 included three latent factors: confidence in institutions, image of democracy and conflict representation.

After a descriptive analysis of our items, we run a CFA based on theory-driven models in each single country. For the two-factors model (Model 1), the analysis first showed that the same latent structure is present in twenty-three out of twenty-three selected countries. In Austria, Belgium, Bulgaria, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Great Britain the conceptual frame that defines the two dimensions of political culture is similar. For the three-factor model of political culture (Model 2), the analysis showed that the same latent structure is present in twenty-two out of twenty-six selected countries. In Austria, Belgium, Bulgaria, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Romania, Serbia, Slovenia, Spain, Sweden, Turkey, Great Britain (but not in Croatia, Hungary, Portugal and Switzerland) the conceptual frame that defines the three dimensions of political culture is indeed similar. In these countries people can distinguish among different aspects of political culture. We are therefore able to confirm the validity of theory driven latent construct both for Model 1 and for Model 2.

We then move to testing the validity of data for comparison, through multi-group confirmatory analysis test. This analysis is a necessary condition to proceed with any kind of cross-national comparisons. For Model 1, we had estimation problems for *configural* equivalence. While *metric* and *full scalar equivalence* had satisfying model fits, the net worsening from moving from the former to the latter does not satisfying the condition of equivalence (ΔCFI>0.02). Also for Model 2, while we had an acceptable model fit for *configural* equivalence and for the *full metric* solution, the condition of equivalence were not satisfying (ΔCFI>0.02). However, after releasing some model parameters in specific countries, as suggested by modification indexes, we were able to obtain a satisfying *partial metric equivalence* solution. Test for *partial scalar equivalence*, however, did not satisfy the condition of equivalence.

These results highlights how much the validity of cross-national comparisons is threatened by the implicit assumption that measurement tools do not vary between countries. However, while closing the door to some research possibilities, our analysis gives us some promising results for political culture. In case of Model 1 (social capital and moral values), although we should take these results very carefully and further analysis should be carried out, we can conclude that we can legitimately compare 20 countries in terms of correlation coefficients (factor loadings). In case of Model 2, we can conclude that we can legitimately compare 21 countries in terms of correlation coefficients (factor loadings). Although only in 14 countries we obtained a *full metric equivalence*, *partial metric invariance* may still be sufficient for meaningful cross-cultural comparisons. In both cases, however, cross-country comparison should not be done in terms of differences between item means. This means that any country ranking built on the basis of the average score on the scale of indicators of social capital, moral values, confidence in institutions, image of democracy or conflict representation would report unreliable data due to incomparability. This does not mean that no difference exist across countries on these dimensions, but simply that we are not (yet) using a good measurement instrument for detecting them. Thus, the future challenge for scholars will be to construct better (invariant) measurement instruments.

Another relevant substantive finding of our analysis is that our hypothesis on the dimension of confidence in institutions has been satisfied. Confidence in institutions is measured in satisfying way by five items including order and political institutions (confidence in army, police, parliament,

civil service and justice system) with a one-single latent factor solution, instead of two as proposed by predominant literature.

The next step we want to carry out in future research is to integrate Model 1 and Model 2 in one single five-factors solution model, provided that different data type would allow this model to deliver reliable results. Once data will be completely validated, we will have to think of what is the best way to produce synthetic variables from micro-level indicators to be used in *The True European Voter* project. Several strategies are available for this and we want to study the best one for our purposes. These macro-level context variables will then subsequently be used in a cross-country multi-level model of electoral behaviour in which political culture moderates the effects of several individual determinants on the variable of voting and party choice. The journey is still long, but through this methodological exercise, we have set the very promising preliminary stone for cross-country comparison of political culture: ensure its data validity.

Appendix I

A. Indicators

Each item is a dummy, or rated on 4 points Likert scale or 10 points scale. Scoring of moral values and confidence in institutions items have been reversed (with higher scores indicating stronger support).

Social Capital

[a064, a066, a069, a070, a073, a077] Please look carefully at the following list of voluntary organisations and activities and say which, if any, do you belong to?

a064 Social welfare services for elderly, handicapped or deprived people.
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a066. Education, arts, music or cultural activities.
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a069. Local community action on issues like poverty, employment, housing, racial equality.
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a070. Third world development or human rights.
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a073. Youth work (e.g. scouts, guides, youth clubs etc.).
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a077. Voluntary organisations concerned with health.
0. not mentioned
1. mentioned
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a165 Generally speaking, would you say that most people can be trusted or that you can't be too careful
in dealing with people?

1 – most people can be trusted
2 – can't be too careful
8 – don't know (spontaneous)
9 – no answer (spontaneous)

Moral Values: [a048, a049]. Do you approve or disapprove of abortion under the following circumstances?

a048. Where the woman is not married.

1 - approve
2 – disapprove
8 – don't know (spontaneous)
9 – no answer (spontaneous)

a049. Where a married couple does not want to have any more children.

1 - approve
2 – disapprove
8 – don't know (spontaneous)
9 – no answer (spontaneous)

[f121 f122] Please tell me for each of the following whether you think it can always be justified, never be justified, or something in between, using this card.

f121. Justify: Divorce
1: never
10: always

f122. Justify: Euthanasia (terminating the life of the incurably sick)
1: never
10: always

Confidence in Institutions

e069_02 : how much confidence in: armed forces
1: a great deal
2: quite a lot
3: not very much
4: none at all

e069_06 : how much confidence in: the police
1: a great deal
2: quite a lot
3: not very much
4: none at all

e069_07 : how much confidence in: parliament
1: a great deal
2: quite a lot
3: not very much
4: none at all

e069_08 : how much confidence in: civil service
1: a great deal

2: quite a lot
3: not very much
4: none at all

e069_17 : how much confidence in: justice system
1: a great deal
2: quite a lot
3: not very much
4: none at all

Image of Democracy

e114 : political system: strong leader
1: very good
2: fairly good
3: fairly bad
4: very bad

e115 : political system: experts making decisions
1: very good
2: fairly good
3: fairly bad
4: very bad

e116 : political system: the army ruling
1: very good
2: fairly good
3: fairly bad
4: very bad

e121 : democracy: is indecisive
1: agree strongly
2: agree
3: disagree
4: disagree strongly

e122 : democracy: cannot maintain order
1: agree strongly
2: agree
3: disagree
4: disagree strongly

Conflict Representation

e036 : private vs. government ownership business
1: private ownership increased
10: government ownership increased

e037 : individual vs. state responsibility for providing
1: individual responsibility
10: state responsibility

e039 : competition good vs. harmful for people
1: competition good
10: competition harmful

Appendix II – Descriptive Tables

Table 1 Indicators of Social Capital across countries (%; valid cases only)

	SOCIAL CAPITAL							N=
	Belonging to welfare org.	Belonging to cultural activ.	Belonging to local community action	Belonging to 3w develop./human rights	Belonging to youth work	Belonging to voluntary health org.	Generalized trust	
Country	Share of 'yes' answers (%)	Share of 'yes' answers (%)	Share of 'yes' answers (%)	Share of 'yes' answers (%)	Share of 'yes' answers (%)	Share of 'yes' answers (%)	Share of 'most people can be trusted' (%)	
Austria	8,4	8,3	2,2	4,0	3,0	5,1	38,9	1510
Belgium	8,3	16,7	4,1	5,4	6,5	3,8	34,7	1509
Bulgaria	2,2	6,1	2,0	,2	2,2	1,7	15,0	1500
Estonia	7,0	13,5	3,4	,8	6,2	1,9	35,7	1518
Finland	8,7	10,8	3,0	6,9	6,7	6,2	68,8	1134
France	7,4	10,0	4,1	2,7	1,3	3,1	27,8	1501
Germany	5,8	6,2	1,2	1,6	3,4	4,2	40,2	2075
Greece	1,8	5,5	1,6	1,1	1,3	2,8	20,2	1500
Hungary	1,1	2,7	1,6	,1	1,7	1,7	20,1	1513
Iceland	21,0	16,8	6,8	15,6	7,8	3,4	52,7	808
Italy	4,7	8,8	2,8	3,8	6,4	4,4	33,2	1519
Lithuania	1,8	4,1	4,4	,8	5,4	1,3	32,0	1500
Netherlands	22,5	38,8	12,8	25,4	7,7	14,1	64,2	1554
Norway	8,6	12,2	2,3	12,3	3,3	10,0	76,5	1090
Poland	1,1	1,3	,7	,5	3,6	,5	27,3	1510
Portugal	8,8	6,1	4,8	3,4	4,8	2,7	16,3	1553
Romania	3,6	5,6	1,8	1,2	1,0	1,2	17,4	1489
Serbia	2,0	5,3	1,4	,6	1,7	3,1	12,1	1512
Slovenia	7,0	14,0	1,8	1,6	5,4	4,4	24,9	1366
Spain	2,0	5,0	,9	2,1	1,8	1,4	33,7	1500
Sweden	8,8	15,6	1,7	8,6	2,8	3,0	76,9	1187
Switzerland	7,9	17,8	2,7	7,9	4,6	4,8	55,8	1272
Great Britain	5,7	13,3	5,0	4,3	6,2	5,4	44,0	1561

Table 2 Indicators of moral values across countries (% and means; valid cases only)

	MORAL VALUES				
	abortion if woman not married	abortion if couple doesn't want more children	do you justify: divorce	do you justify: euthanasia	
Country	Share of 'approve' answers (%)	Share of 'approve' answers (%)	Mean (scale 1-10)	Mean (scale 1-10)	
Austria	45,5	46,8	5,83	4,58	1510
Belgium	55,3	51,7	5,71	6,80	1509
Bulgaria	61,7	73,7	5,19	4,24	1500
Estonia	50,2	69,5	5,23	4,75	1518
Finland	78,4	72,0	7,47	6,16	1134
France	73,0	66,9	6,64	6,79	1501
Germany	55,3	58,0	6,46	5,01	2075
Greece	43,9	39,6	5,99	3,45	1500
Hungary	60,7	72,2	5,80	4,50	1513
Iceland	67,1	59,7	7,43	5,85	808
Italy	39,4	31,5	4,94	4,85	1519
Lithuania	67,4	67,4	5,43	5,06	1500
Netherlands	60,1	49,9	6,56	6,81	1554
Norway	68,3	60,0	7,10	5,81	1090
Poland	29,3	31,8	4,50	3,45	1510
Portugal	49,8	51,1	5,81	4,14	1553
Romania	46,3	46,9	5,09	3,51	1489
Serbia	62,5	67,9	5,00	3,72	1512
Slovenia	70,5	74,1	6,63	5,71	1366
Spain	61,9	55,9	7,24	6,31	1500
Sweden	93,1	89,5	8,54	6,82	1187
Switzerland	67,1	59,2	6,37	5,20	1272
Great Britain	58,8	57,3	6,06	5,78	1561

Table 3 Indicators of Confidence in Institutions across countries (means; valid cases only)

	CONFIDENCE IN…INSTITUTIONS					N
	…Armed Forces	… Police	… Parliament	… Civil Service	… Justice System	
Country	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	
Austria	2.34	2.77	2.14	2.35	2.74	1510
Belgium	2.48	2.77	2.30	2.54	2.46	1509
Bulgaria	2.32	2.13	1.61	1.85	1.76	1500
Croatia	2.43	2.28	1.74	2.14	1.88	1525
Estonia	2.63	2.78	2.11	2.59	2.54	1518
Finland	3.04	3.28	2.34	2.38	2.85	1134
France	2.81	2.83	2.43	2.60	2.53	1501
Germany	2.54	2.80	2.18	2.22	2.51	2075
Greece	2.85	2.56	2.12	2.05	2.44	1500
Hungary	2.28	2.48	1.91	2.30	2.27	1513
Iceland	2.39	3.30	2.35	2.63	2.79	808
Ireland	2.90	2.85	2.43	2.63	2.41	1013
Italy	2.90	2.90	2.18	2.26	2.23	1519
Lithuania	2.70	2.40	1.93	2.26	2.11	1500
Netherlands	2.50	2.73	2.41	2.33	2.50	1554
Norway	2.59	3.02	2.68	2.58	2.90	1090
Poland	2.69	2.59	1.87	2.15	2.34	1510
Portugal	2.89	2.91	2.20	2.34	2.33	1553
Romania	3.00	2.54	1.98	2.15	2.31	1489
Serbia	2.34	2.21	1.74	2.06	2.02	1512
Slovenia	2.67	2.68	2.40	2.51	2.40	1366
Spain	2.56	2.77	2.43	2.36	2.36	1500
Sweden	2.33	2.83	2.60	2.45	2.73	1187
Switzerland	2.33	2.96	2.66	2.79	2.85	1272
Turkey	3.51	3.23	2.63	2.79	3.13	2384
Great Britain	3.32	2.85	2.01	2.37	2.52	1561

Table 4 Indicators of Image of Democracy across countries (means; valid cases only)

	IMAGE OF DEMOCRACY					N
	Strong leader	Experts making decisions	The army ruling	Democracy is indecisive	Democracy Cannot maintain order	
Country	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	Mean (scale 1-4)	
Austria	3.29	2.44	3.71	2.57	3.10	1510
Belgium	2.83	2.37	3.56	2.25	2.74	1509
Bulgaria	2.25	1.74	3.25	2.44	2.32	1500
Croatia	2.90	1.86	3.29	2.64	2.74	1525
Estonia	3.00	2.30	3.62	2.61	2.79	1518
Finland	3.38	2.58	3.72	2.68	3.11	1134
France	3.10	2.58	3.70	2.10	2.57	1501
Germany	3.37	2.34	3.85	2.57	3.11	2075
Greece	3.67	3.36	3.69	2.46	2.77	1500
Hungary	3.00	1.87	3.61	2.28	2.58	1513
Iceland	3.22	2.21	3.87	2.86	3.02	808
Ireland	3.00	2.65	3.54	2.58	2.74	1013
Italy	3.39	2.66	3.67	2.52	3.03	1519
Lithuania	2.47	2.47	3.42	2.31	2.63	1500
Netherlands	2.79	2.57	3.72	2.47	2.82	1554
Norway	3.32	2.76	3.77	2.38	3.03	1090
Poland	3.10	2.06	3.28	2.20	2.46	1510
Portugal	2.50	2.29	3.17	2.29	2.57	1553
Romania	1.98	2.00	3.01	2.07	2.55	1489
Serbia	2.18	1.68	2.96	2.70	2.76	1512
Slovenia	3.03	1.98	3.64	2.25	2.52	1366
Spain	3.28	2.38	3.76	2.30	3.14	1500
Sweden	3.45	2.85	3.73	2.70	3.19	1187
Switzerland	3.12	2.78	3.86	2.11	2.98	1272
Turkey	2.26	2.35	2.87	2.42	2.65	2384
Great Britain	3.06	2.56	3.55	2.45	2.73	1561

Table 5 Indicators of Conflict Representation across countries (means; valid cases only)

	CONFLICT REPRESENTATION			N
	Private vs. Government ownership business	Individual vs. State Responsibility for providing…	Competition good vs. harmful for people	
	Mean (scale 1-10)	Mean (scale 1-10)	Mean (scale 1-10)	
Austria	4.56	4.20	4.06	1510
Belgium	4.40	5.02	4.67	1509
Bulgaria	5.58	5.15	3.19	1500
Croatia	5.35	5.12	3.92	1525
Estonia	5.89	5.04	3.93	1518
Finland	5.18	4.55	4.53	1134
France	4.79	4.60	4.99	1501
Germany	5.21	4.28	3.57	2075
Greece	5.17	5.49	4.41	1500
Hungary	6.20	5.44	4.28	1513
Iceland	4.75	4.89	3.08	808
Ireland	4.52	4.19	3.91	1013
Italy	4.69	5.75	4.45	1519
Lithuania	5.16	4.86	4.50	1500
Netherlands	4.60	4.80	4.55	1554
Norway	4.63	4.86	3.51	1090
Poland	5.36	5.27	4.41	1510
Portugal	4.49	4.48	4.37	1553
Romania	4.60	3.90	3.04	1489
Serbia	5.70	5.30	3.34	1512
Slovenia	4.74	5.18	3.90	1366
Spain	5.49	5.59	4.86	1500
Sweden	4.70	4.19	3.66	1187
Switzerland	4.31	4.05	3.87	1272
Turkey	5.77	5.30	4.41	2384
Great Britain	4.52	3.83	3.66	1561

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