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Vladimir Magun, Maksim Rudnev, Peter Schmidt

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Vladimir Magun¹, Maksim Rudnev², Peter Schmidt³

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Country averages are the most popular instrument for studying cross-national variability of values, and within-country value diversity is rarely taken into consideration in such studies. Furthermore, traditional value indices only measure distinct value priorities, but do not allow researchers to grasp a system of value preferences. In order to find an alternative way to study within-country value diversity and cross-country differences, we employed latent class analysis (LCA). Respondents from the 33 European countries were classified on the basis of their responses to 21 items on the Schwartz Portrait Value Questionnaire. LCA resulted in six value classes. Five of these classes differ by their patterns of value preferences, and the particular feature of the largest class (38%) is the lack of any pronounced value preferences at all.

The results showed that each of the 33 countries is internally diverse in its value class composition, and that most countries have representatives of all six value classes. At the same time, Nordic and Western European countries are substantively different from post-Communist and Mediterranean countries by their shares of various value classes. As a formal measure of within-country diversity we have used the value fractionalization index, which measures the evenness of membership distributions between classes. Nordic and Western European countries have higher fractionalization scores than post-Communist and Mediterranean countries. This means that value class distributions are more even in the Nordic and Western countries, which highlights the fact that higher fractionalization scores happen to coincide with country advancement. In Mediterranean and post-Communist countries, low value fractionalization means that the people are divided into unequal value majorities and value minorities, with a risk that the voices of minorities are not heard in the public space.

JEL Classification: Z10.

Keywords: basic human values, value preference, within-country variance, fractionalization, value heterogeneity, latent class analysis, European Social Survey

¹ Head of the Unit for Personality Studies at the Institute of Sociology of the Russian Academy of Sciences, Head of the Laboratory for Comparative Studies of Mass Consciousness at the National Research University Higher School of Economics

² Research fellow at the National Research University Higher School of Economics and at the Institute of Sociology of the Russian Academy of Sciences

³ Professor at the Institute of Political Science University of Giessen, Co-director of International Laboratory of Socio-Cultural Research at the National Research University Higher School of Economics

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INTRODUCTION

The comparative cross-country analysis of human values has succeeded in discovering important value dimensions and describing the population of different countries in terms of these dimensions (Inglehart, 1997; Inglehart, Baker, 2000; Inglehart, Welzel, 2010; Schwartz, 2005, 2007; Hofstede, 1980).

As a result, many countries have been located on so-called cultural maps that represent each country by the values of an average resident. When a researcher compares countries, he/she knows about within-country value diversity quite well, but the substantial aspects of this diversity very rarely become a basis for between-country comparisons⁵.

Inglehart and Welzel provide a rationale for bypassing the within-country diversity in cross-country comparisons of values. They argue that “cross-national differences dwarf the differences within given societies. The ellipse [drawn on the value map] shows the size of the average standard deviation *within* given countries. It occupies a tiny fraction of the map⁶” (Inglehart, Welzel, 2010, p. 553). So the distances between country means along value dimensions are usually rather large compared to the country standard deviations. As a result, the populations of different countries just slightly overlap or do not overlap at all.

But it appears that this conclusion is not applicable to the basic values of the European populations measured with the Schwartz value dimensions (Schwartz, 1992). Fig. 1 demonstrates that the average values of European countries appear to be much closer to each other than their doubled standard deviations. This means that the populations of the European countries (including former Communist countries) are more similar in their values and that this value overlap is much greater than could be expected from Inglehart and Welzel’s point of view.

⁵ There are publications devoted to within-country value consensus and diversity (e.g. Schwartz, Sagie, 2000; Na, Duckitt, 2003; Schwartz, Fischer, 2011; Rudnev, Magun, 2011) but they are focused on the formal indicators of diversity and rarely compare the substantial aspects of this diversity in different countries.

⁶ This discussion is based on the assumption that value scores within each country’s sample are normally distributed. If this is the case, 68% of individual value scores should lie within 1 standard deviation and 95% – within 2 standard deviations range.

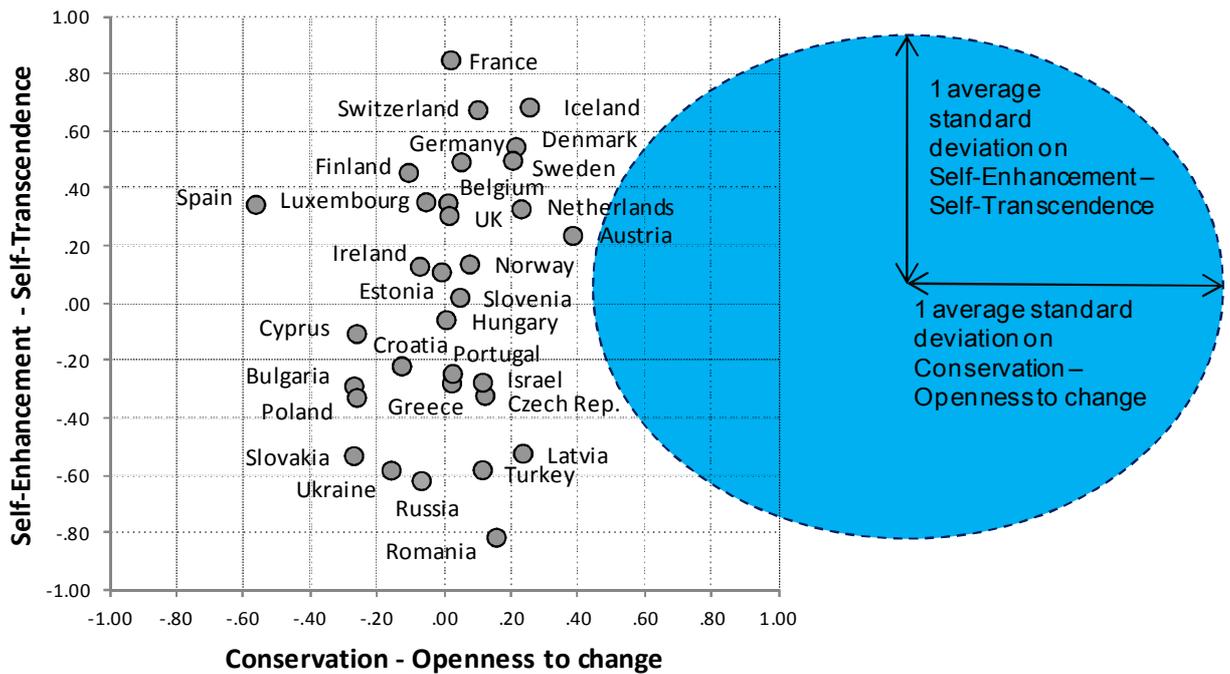


Figure 1. Between and within-country variance along the value axes Self-Transcendence – Self-Enhancement and Openness to change – Conservation in Europe

It would be helpful to complement the country averages comparison with some other techniques of cross-country value comparison, and this technique should be able to grasp the within-country variance as well as between-country differences.

The most straightforward way of combining the study of within- and between-country variances is to plot the within-country distributions of each of 10 Schwartz value indices and to observe how they overlap in different countries. But our idea is to find a more holistic and parsimonious instrument to reach this goal. In our previous research (Magun, Rudnev, 2008), we have used k-means cluster analysis as such an instrument and classified the European population into 4 clusters based on 21 Schwartz value items from the European Social Survey. Then we considered the within-country distributions of the 4 clusters' members and compared the within-country shares of each cluster across all countries studied. We concluded that every country has the representatives of all four value clusters. Every country shares the representatives of the same clusters, and cross-country differences in values arise due to the fact that people are distributed between these types in different ways in different countries. So, the classification of respondents based on their values proved to be a feasible instrument to compare countries in a more detailed manner than can be done by comparing country means. This instrument combines 21 value items into different systems of preferences and classifies respondents with similar systems of value

preferences into several clusters. Being a synthetic instrument is an advantage over more analytic Schwartz value indices, value categories, or even value axes.

Lee and coauthors (Lee, Soutar, Daly, and Louviere, 2011) have found value clusters for several American and Chinese samples using SPSS's two-step cluster analysis. They have found a four-cluster solution that has been robust for different countries and samples, but the United States and China differ from each other in the exact shares of the clusters found.

As expected, the clusters differ from each other by the average importance of various values for their members. It is noteworthy that when labeling clusters, the authors emphasized the values with maximum salience for each cluster (as compared to the other ones) but paid no attention to the values which were relatively less pronounced in each of the clusters. As a result the authors ignored many of the value preferences, which were an essential feature of the value clusters they discovered.

Moors and Vermunt (2007) have applied the classification method to the cross-cultural study of values as well. They have focused on the heterogeneity of rankings of Inglehart's materialism-postmaterialism values battery and successfully used the latent class analysis (LCA) to classify the European population. Moors and Vermunt were not interested in looking at within-country differences, but the method they used for classification is attractive as an alternative instrument of exploring within-country value diversity. The same implication comes from the papers of Siegers (2011) and Kankaras (2010, 2011) who have applied the LCA to classify respondents on the basis of their values, religious orientations and preferences for social development, and whose main interest was to check the invariance of latent class structure in different countries.

The objective of this paper is to classify the European respondents on the basis of their responses to 21 European Social Survey (ESS) Schwartz value items and to use this classification for the description of the within- and between-country similarities and differences. Such a classification of respondents is an alternative way to aggregate the Schwartz value data, which enables a researcher to tackle the typical value syndromes unlike continuous value indices, categories and axes.

Our current paper is based on latent class analysis (LCA), which is a more advanced method of classification.

Hypotheses and rationale:

1. Value classes differ from each other by the respondents' value preferences, i.e. the people within each class have preferences that are similar to each other and dissimilar to the people from the other classes.

In fact, such a ground for classification is prompted by the centering procedure recommended by Schwartz and by his theory of the circular value structure (see in detail in “Data and methodology”). Through the centering procedure the subjective importance of each value is compared with the average importance of all the other values measured by Schwartz questionnaire. Thanks to this, all value variables become indicators of value preferences. The Schwartz value circle describes the conflict between values or value categories (like Conservation vs. Openness to Change or Self-Enhancement vs. Self-Transcendence) and provides a rationale for calculating the value-axes indices reflecting the individual preferences of Conservation over Openness or Self-Enhancement over Self-Transcendence.

The centering procedure *imposes* the preferences (or conflict) relations upon the set of Schwartz values and sometimes is considered as more or less arbitrary, but in this paper we do apply this procedure to the value items and so we share the Schwartz “preference” approach. We also share the conflict (or “preference”) view for the relations between value categories mentioned above which are intrinsic to human values and not just imposed on them by the procedures used to calculate the relevant indices.

2) All the European countries are value diverse and enclose the representatives of all the value classes.

3) Nordic and Western European countries are different from post-Communist and Mediterranean countries by the pattern of within-country value class distributions.

4) Nordic and Western countries’ populations have higher value heterogeneity than Mediterranean and post-Communist countries’.

The paper is organized as follows. First, we describe the data, variables, and methodology. Second, we describe the class structure that results from latent class analysis and describe each class in terms of its members’ values. Third, we describe each country in terms of shares of different value classes, analyze value class diversity within each country, and compare countries by taking this diversity into account. In the conclusion we compare results received with hypotheses postulated.

DATA AND METHODOLOGY

We use the European Social Survey (ESS) data for 33 European countries (Jowell, Roberts, Fitzgerald, Eva, 2007). There are 12 post-Communist countries of Central and Eastern Europe in our dataset (Bulgaria, Czech Republic, Croatia, Estonia, Hungary, Latvia, Poland, Russia, Romania, Slovakia, Slovenia, and Ukraine), 7 Mediterranean countries (Greece, Israel, Italy, Spain, Cyprus, Turkey, and Portugal), 5 Nordic countries (Denmark, Iceland, Norway, Sweden, and Finland), and 9 Western European countries (Austria, Belgium, United Kingdom,

Germany, Ireland, Luxembourg, Netherlands, France, and Switzerland). There are 61299 respondents in all.

This paper is based mainly on the data from the fourth round of the ESS (surveys were conducted in 2008 and in the beginning of 2009), which are combined with the data from the previous rounds of ESS for several countries (for Austria and Ireland – from the third round, and for Iceland, Italy and Luxembourg – from the second).

Since the purpose of this paper is to find the value fractions of the whole population of the European countries, the data have been weighted by population weight. The population weight increases the effect of samples from highly populated countries and decreases the effect of the samples from less populated countries. The countries included have been weighted by the design weight as well⁷.

Values are measured by a modification of the Portrait Values Questionnaire developed by Schwartz (Schwartz, Lehmann, Roccas, 1999; Schwartz, Melech, Lehmann, Burgess, & Harris, 2001; Schwartz, 2003). Like his other questionnaires, this one was designed to measure the 10 basic values (Schwartz, Bilsky, 1990; Schwartz, 1992). Respondents were provided with 21 descriptions of people characterized by certain values (see Table 1). They assessed each of the portraits using a six-point scale: "very much like me" (6 points), "like me" (5 points), "somewhat like me" (4 points), "a little like me" (3 points), "not like me" (2 points), or "not like me at all" (1 point). So in this paper, a higher score denotes a stronger commitment to the value⁸.

There are four sets of variables to describe values (see Table 1). The value variables belong to various aggregation levels. The subjective importance of the "first level" values was measured directly by the responses to the 21 questionnaire items. Those indicators were used as they are: no aggregation has been applied⁹. 10 higher-order *value indices* ("second level" values) are listed in Table 1; these value indexes were calculated as averages of the values combining each index. Previous studies by Schwartz showed that the ten "second level" values may be grouped in turn into four higher order *value categories* ("third level" values). Pairs of these value categories are related reciprocally: with an increase in the subjective importance of one value category, the importance of its opposite decreases. Thus, these relations allow us to construct two higher order value dimensions, or *value axes* ("fourth level").

The value category Conservation includes such values as security, conformity, and tradition, and the opposing value category Openness to Change includes such values as stimulation, self-direction, and hedonism. The two categories mentioned constitute the first *value*

⁷ See: Weighting European Social Survey Data. URL: <http://ess.nsd.uib.no/ess/doc/weighting.pdf>

⁸ In the ESS Questionnaire and in the original ESS data base the scale direction is different.

⁹ Each item score for every respondent is centered by subtracting from its raw score the individual average for all the 21 items. The rationale and algorithm for centering was proposed by Schwartz (Schwartz, 2003; Schwartz, Verkasalo, Antonovsky, Sagiv, 1997) and described in detail at the ESS website: www.europeansocialsurvey.org.

axis, Openness to Change – Conservation. The second axis, Self-Transcendence – Self-Enhancement reflects the opposition between value categories Self-Transcendence (which combines the value indices of benevolence and universalism) and Self-Enhancement (which combines the value indices of achievement and power). The scores for value categories Openness to Change, Conservation, Self-Transcendence, and Self-Enhancement are calculated as averages of the value indices (second-level values). And the scores for the value indices were calculated as averages of the primary items. The scores for value axes were calculated as the differences between the scores on the relevant categories.

Table 1 demonstrates the hierarchy of value indicators measured by Schwartz items included into ESS Questionnaire, from the initial value items in the questionnaire at the right to the integral value axis on the left. It reflects the basic values classification, which was initially proposed by Schwartz and confirmed with multidimensional scaling.

To classify the respondents on the basis of their value syndromes (or value patterns) we use the latent class analysis (LCA), which was introduced by Lazarsfeld and Henry (Lazarsfeld, Henry, 1968). Compared to classical clustering methods like k-means, LCA is a model-based technique which takes into account measurement error, uses probabilities instead of *ad hoc* criteria to estimate cluster centers, and provides strict statistical criteria to determine the number of classes (Magidson, Vermunt, 2002). The latter option is specifically important for the exploratory mode of analysis that we have employed in this paper. Since the input variables are assumed to be continuous and we are interested in clusters, not factors, we have employed the so-called latent profile model (LPM) (Vermunt, 2004). We used analysis of "Mixture" type in Mplus software (Muthen & Muthen, 2010) and from two available estimators we chose Maximum Likelihood Robust (MLR) which is robust to non-normality and non-independence when estimating standard errors and chi-square statistics. By default, Mplus uses Full Information Maximum Likelihood (FIML) for imputation of missing values. An Mplus code used for analysis is reported in the Appendix.

In order to make the within- and between-country comparisons more elaborate, we will describe countries with the fractionalization index, which is a special measure of diversity for nominal data suggested by Alesina and coauthors (Alesina et.al., 2003).

An index of value fractionalization may be calculated for each country following the algorithm suggested by Alesina et. al.:

$$FRACT = 1 - \sum_{i=1}^N s_{ij}^2$$

where s_{ij} equals a share of group i in the country j .

To get this index free from the exact number of classes, we divided it by the maximum degree of fractionalization possible with the current number of classes¹⁰ and received the normalized index of fractionalization:

$$FRACT_{NORMAL} = \frac{1 - \sum_{i=1}^N s_{ij}^2}{FRACT_{MAX}}$$

Maximum fractionalization equals 0,83 for 6-classes solution, 0,80 for 5 classes, 0,75 for 4 classes, 0,73 for 3 classes, and 0,50 for 2 classes, and minimum fractionalization equals 0 for any number of classes.

This index indicates the evenness of the membership distribution among different classes: the higher the fractionalization, the more even the distribution. When all the classes within a country have the same shares, fractionalization reaches its maximum, and *vice versa*: the more uneven the distribution, the more salient are the country's minorities and majorities and the lower the country fractionalization index.

RESULTS

Classifying Europeans by their Basic Values

Each of 61299 respondents included in the latent class analysis was represented by the 21 Schwartz value items and these people were classified in a various number of classes. The optimal number of classes can be defined with the VLR (Vuong-Lo-Mendell-Rubin) test, that indicates the probability for each LCA classification that the number of classes one less than in the current solution is sufficient. The test's results demonstrate a significant increase of the probability that 6 classes are enough. It means that the latent class analysis of the Europeans built on their basic values has resulted in 6 classes.

The estimated means of 21 value items for each latent class are presented in Table 1. Figures 2 and 3 demonstrate the value profiles of these classes in a more parsimonious way, indicating the class averages of the value categories and value axes.

¹⁰ The normalization procedure was recommended to authors by professor V. Paniotto and it is similar to the procedure he had suggested for the entropy index described in his coauthored book on statistical analysis (Paniotto, & Maksimenko, 1982. P. 124).

Table 1. The estimated means of the 21 value items for the 6 latent classes extracted (N=61299 respondents from 33 European countries)*

4th level values (axes)		3rd level values (categories)		2nd level values (value indices)		First level values (questionnaire value items)						
						Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	
Openness to change	Self-direction	Openness to change	Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.			0,81⁺	-0,87⁻	0,28	0,12	-0,06	0,55	
			It is important to him to make his own decisions about what he does. He likes to be free and not depend on others.			1,14⁺	0,11⁻	0,63	0,29	0,36	1,05	
	Stimulation	Openness to change	He likes surprises and is always looking for new things to do. He thinks it is important to do lots of different things in life.			0,49⁺	-1,57⁻	-0,18	-0,04	-0,66	0,47	
			He looks for adventures and likes to take risks. He wants to have an exciting life.			-0,36	-2,45⁻	-1,79	-0,48	-2,18	0,23⁺	
	Hedonism	Openness to change	Having a good time is important to him. He likes to "spoil" himself.			0,49	-1,71⁻	-0,07	0,01	-0,82	0,84⁺	
			He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.			0,18	-1,84⁻	-0,23	-0,08	-1,21	0,69⁺	
	Conservation – Conservation	Security	Conservation	It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.			-0,57⁻	1,39⁺	0,57	0,22	0,81	-0,01
				It is important to him that the government ensures his safety against all threats. He wants the state to be strong so it can defend its citizens.			-0,43⁻	1,44⁺	0,62	0,24	0,81	0,23
		Conformity	Conservation	He believes that people should do what they're told. He thinks people should follow rules at all times, even when no one is watching.			-1,51⁻	0,80⁺	-0,44	-0,23	-0,05	-1,49
				It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.			-0,88	1,26⁺	0,44	-0,02	0,45	-1,25⁻
		Tradition	Conservation	It is important to him to be humble and modest. He tries not to draw attention to himself.			-0,22	1,20⁺	0,65	-0,25	0,13	-1,68⁻
				Tradition is important to him. He tries to follow the customs handed down by his religion or his family.			-0,83	1,16⁺	0,20	-0,05	0,50	-0,89⁻
Self-Enhancement – Self-Transcendence	Benevolence	Self-Transcendence	It's very important to him to help the people around him. He wants to care for their well-being.			0,89	0,92	0,94⁺	0,10	0,54	-0,23	
			It is important to him to be loyal to his friends. He wants to devote himself to people close to him.			1,19	1,22⁺	1,17	0,29⁻	0,74	0,52	
	Universalism	Self-Transcendence	He thinks it is important that every person in the world should be treated equally. He believes everyone should have equal opportunities in life.			1,14	1,24⁺	1,03	0,19	0,66	-0,03	
			It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them.			0,98⁺	0,77	0,85	0,02	0,32	-0,56⁻	
	Power	Self-Enhancement	He strongly believes that people should care for nature. Looking after the environment is important to him.			0,88	1,26⁺	0,96	0,19	0,74	-0,14⁻	
			It's important to him to show his abilities. He wants people to admire what he does.			-0,34	-1,21	-1,29⁻	0,00	-0,02	0,49⁺	
Power	Self-Enhancement	Being very successful is important to him. He hopes people will recognise his achievements.			-0,40	-1,33	-1,31⁻	0,05	0,01	0,67⁺		
		It is important to him to be rich. He wants to have a lot of money and expensive things.			-1,71	-1,84	-2,01⁻	-0,46	-1,24	0,39⁺		
			It is important to him to get respect from others. He wants people to do what he says.			-0,96	0,02	-1,03⁻	-0,10	0,13⁺	0,09	

* Each item score for every respondent is centered by subtracting from its raw score the individual average for all the 21 items
⁺ The largest values among 6 classes
⁻ The smallest values among 6 classes

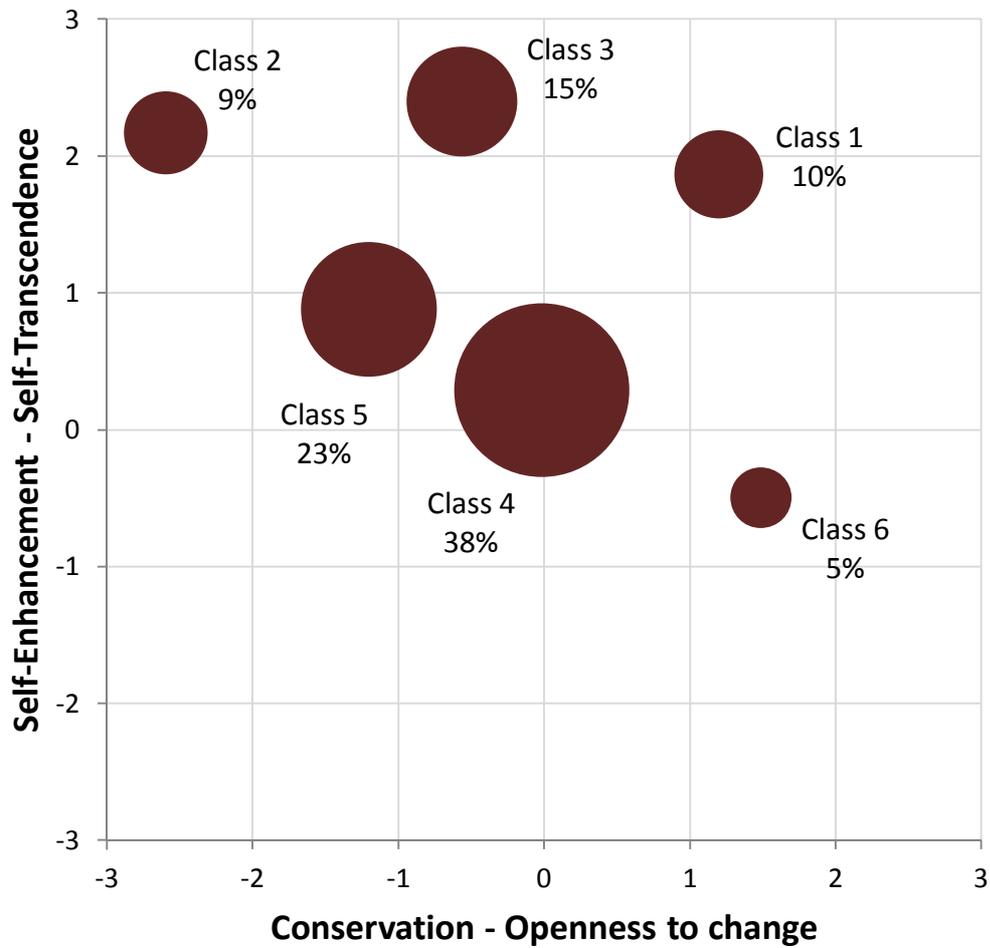


Figure 2. Six latent classes in the two-dimensional Schwartz value space (N=61299 respondents from 33 European countries; the classes are located according to their average scores on each of the value axes)

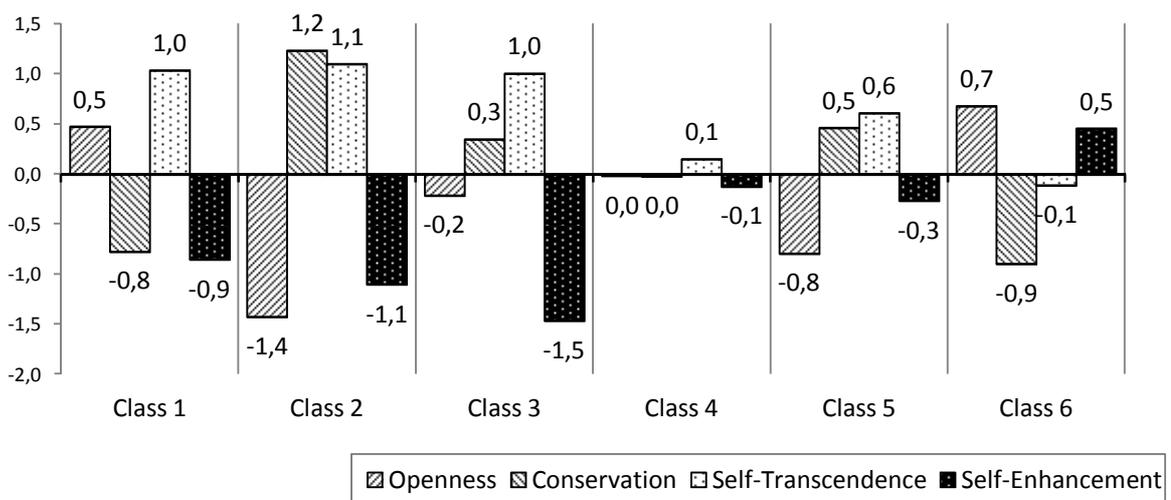


Figure 3. Value profiles (average scores of the four value categories) of the six value classes (N=61299 respondents from 33 European countries)

Fig. 2 locates the average scores of the six value classes in the space of the two value axes. As was mentioned above, the meaning of the axis score of the individual is his/her preference for one value category over its opposite. Therefore, this figure describes the value classes in terms of the two preferences: “Openness vs. Conservation” and “Self-Transcendence vs. Self-Enhancement”.

Most Europeans are located at the upper left corner of the Fig. 2, which means the preference of Self-Transcendence over Self-Enhancement and Conservation over Openness to Change. 57% of the European population considers Self-Transcendence to be more important than Self-Enhancement (members of classes 1, 2, 3 and 5) and 47% of the European population prefers the values of Conservation to Openness to Change (members of classes 2, 3 and 5). As a result there are three classes (47% of the population) where the preference of Self-Transcendence (over Self-Enhancement) combines with the preference of Conservation (over Openness to change), one class (10% of population) in which the preference of Self-Transcendence (to Self-Enhancement) combines with the preference of Openness (over Conservation) and one small class (5% of population) in which the preference of Openness over Conservation combines with the preference of Self-Enhancement over Self-Transcendence.

We describe the classes starting with the ones that have more prominent preferences. *Class 2* (embraced by 9% of the population) combines the strong average preference of Self-Transcendence over Self-Enhancement with the strongest preference for Conservation over Openness. As can be seen from Table 1, members of this class have the highest scores across all the classes on all the items measuring Conservation values (importance of security, conformity, and tradition) and the lowest scores on all the items measuring Openness to Change (importance of being creative and making one’s own decisions, of trying new things and seeking adventures, and of having a good time and seeking fun).

Class 3 (15% of the population) combines the strongest preference for Self-Transcendence over Self-Enhancement and the weak preference for Conservation over Openness. This class’ members have the highest scores across all the classes on the items indicating the importance of helping people and the lowest scores on the four items measuring Self-Enhancement (importance of personal success, positive social evaluation, wealth, and power).

Class 1 (10% of population) combines a strong preference for Self-Transcendence over Self-Enhancement with moderate preference for Openness over Conservation. This class’ members have the highest score across all the classes on the item measuring tolerance of other people (a component of Self-Transcendence), as well as the highest scores on the three items

measuring self-direction and stimulation (as components of Openness) and the lowest scores on the three items measuring security and conformity (as components of Conservation).

Class 6 (5% of population) combines a weak preference of Self-Enhancement over Self-Transcendence with moderate preference of Openness over Conservation. But compared to the other classes, this class' preferences are extreme. Its members have extremely high scores on the items that combine both Self-Enhancement and hedonism: being successful and rich, having a good time, and living a fun and exciting life. And by the same token these people have extremely low scores on various kinds of social-focused values – either belonging to Conservation (as conformity and tradition) or to Self-Transcendence (as benevolence and universalism).

Class 5 (23% of population) combines a moderate preference for Self-Transcendence over Self-Enhancement with a moderate preference for Conservation over Openness to change. The moderate preferences coincide with the moderate scores on the primary value items, excluding the importance of power, which has the highest score across all the classes.

Class 4 is the largest one and it includes more than a third (38%) of the European population. It differs from all the other classes by the lowest degree of preferences. First of all there are zero (or close to zero) preferences between opposite value categories and as a consequence the lowest prevalence of one axis' score over the other (Fig. 2). As it follows from Fig. 3 and Table 1, the zero preferences between opposite value categories goes together with zero average scores of value categories themselves as well as of primary value items means. As we deal with the centered value scores (see above), a zero value score on any value item (or value index, or value category) means that the respondent's commitment to a given value is very close to his/her average commitment to all the values of the same aggregation level. So, the people gathered in class 4 have no pronounced preferences not only between their value categories, but between the primary value items as well. In other words, all of their value commitments are very similar in importance.

All of the value classes discovered by latent class analysis except class No. 4 are characterized by the *substance (content)* of the preferences constituting each class. As to class No. 4, it deals with the *degree* of preferences and identifies the people with a zero- or no-preference style. This feature sets this class in opposition to all other value classes with more pronounced value preferences.

Within and Between-Country Value Differences and Similarities

As mentioned, the classification for all of the European respondents is based on their responses to 21 questionnaire items without any consideration of each respondent's country of residence. Since the objective of this paper is to use the classification obtained as an instrument

to describe within-country value diversity and between-country differences and similarities, we cross-tabulate the class membership and country of residence. The respondent's class shares within their country of residence are listed in Table 2 and Figure 4.

These shares demonstrate that each of the 33 countries is internally diverse in its value class composition. 25 countries have representatives of all six value classes, and 31 countries have representatives of at least five value classes. Even Turkey, which is the least diverse country in our sample, has three non-zero value classes. Due to this fact, every country has commonality with each of the others¹¹. The classification algorithm did not take into account the respondent's country, so the diversity we discovered was not in any way guaranteed.

Still, there are differences between the shares of the same classes in different countries. In order to demonstrate between-country value differences efficiently, we rely on the widely-used classification of European countries by geographical and historical criteria into 4 groups: Nordic countries, Western European countries, Mediterranean countries, and the post-Communist countries of Eastern and Central Europe¹². There are clear differences between Nordic and Western European countries on the one side and Mediterranean and post-Communist countries on the other (Fig. 5).

Members of classes 1 and 3 combine a strong preference for Self-Transcendence (over Self-Enhancement) and relatively high commitment to Openness to Change (this value category is either preferred over Conservation or viewed as slightly less preferable). These two classes are more represented in Nordic and Western Europe. Classes 2, 4, and 5, on the contrary, are more represented in Mediterranean and post-Communist Europe (all the differences are statistically significant, $p < 0,05$). Class 4 is the "no-preference" class and the specialty of the two other classes is either very strong preference of Conservation to Openness (class 2) or "double moderation" combining the moderate preference of Self-Transcendence over Self-Enhancement and the moderate preference of Conservation to Openness (class 5).

To make the differences even more salient, we combine membership for classes that are prominent in more advanced European countries (Nordic and Western Europe) and for classes which are more represented in Mediterranean and post-Communist European countries. For classes 1 and 3 we get 45% and 41% membership for Nordic and Western Europe, which represents almost half of their population, and 2-3 times less membership in the Mediterranean and post-Communist countries (16 and 12%). And when we combine membership for classes 2,

¹¹ For example, Russia has the same five value classes which France and most other European countries have (the share of the sixth class is statistically negligible in Russia). Some value classes that are well represented in France only have a small share in Russia (e.g. class 3 represents a value majority with 36% in France but a value minority with only 4% in Russia). However, people with the same pattern of value preferences do exist in both countries.

¹² This classification has been recently and successfully applied by Norris and Davis (Norris, Davis, 2007).

4, and 5, we get 78 and 82% for the Mediterranean and post-Communist countries and one and a half times less membership for Nordic and Western Europe (52 and 55%)¹³.

Correlations between shares of different classes for the 33 countries studied confirm our division of the classes into two groups: classes 1 and 3 on one hand and classes 2, 4, and 5 on the other. There are statistically significant negative correlations between the shares of classes belonging to different groups and positive or non-significant coefficients for the correlations between classes belonging to the same group.

We have demonstrated the substantive aspects of within-country value diversity and country similarities and differences based on these aspects. Now we turn to the description of the formal aspect of within-country value diversity and we will measure it by fractionalization index. As we mentioned in the methodology section, this index shows the evenness of the population distribution among different classes: the higher the fractionalization, the more even the distribution. When all the classes have the same share within a country, fractionalization reaches its maximum.

Value fractionalization scores for European countries based on our 6-classes value classification are indicated in Fig. 6. It is worth mentioning that the order of these scores is rather stable and does not depend on the number of classes used for value-based classification. The correlation coefficients between country fractionalization indices calculated for three-, four-, five- and six-class solutions are 0,90 or higher (N=33, $p < 0,001$).

Fig. 6 and 7 demonstrate that the four groups of European countries differ in their degree of fractionalization. Nordic and Western Europe have consistently higher fractionalization and post-Communist and Mediterranean countries have lower fractionalization (the difference is statistically significant for post-Communist countries). If we now compare this formal conclusion based on the fractionalization index with just a visual impression from Fig. 4 and 5 above, we can conclude that these two results confirm each other. We can see that within-country class distributions are more even in the Nordic and Western countries and are less even in post-Communist and Mediterranean countries.

It seems that a higher degree of fractionalization is conducive to the country advancement and this impression is further strengthened by positive and significant correlation (0,55, N=33, $p < 0, 001$) between value fractionalization index and country's Gross National Income (GNI) per capita¹⁴.

¹³ The impression that shares of value classes 1 and 3 are larger in more advanced countries is further confirmed by highly positive correlations of these classes' membership in a given country with its gross national income per capita (0.89 and 0.74 respectively). The fact that membership in classes 2, 4, and 5 is negatively associated with country advancement is further confirmed by negative correlations between membership and country GNI per capita (-0.53, -0.51, -0.74).

¹⁴ GNI per capita is measured by the Atlas method in current international dollar. World Bank Database, 2008.

Table 2. The distribution of the population of 33 European countries among value classes, % of row *

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Sample
Iceland	31%	2%**	29%	22%	10%	6%	579
Switzerland	26%	5%	24%	25%	17%	4%	1819
France	24%	5%	36%	20%	13%	2%**	2073
Sweden	24%	3%	25%	33%	11%	4%	1830
Denmark	23%	2%**	23%	31%	16%	4%	1610
Germany	20%	6%	22%	24%	22%	5%	2751
Netherlands	19%	3%	20%	42%	13%	3%	1778
Austria	17%	5%	14%	33%	19%	12%	2405
Finland	16%	9%	29%	29%	14%	3%	2195
Belgium	15%	4%	23%	38%	17%	3%	1760
United Kingdom	15%	7%	24%	31%	19%	4%	2352
Luxembourg	14%	8%	26%	31%	18%	3%	1635
Norway	12%	7%	18%	38%	20%	4%	1549
Ireland	11%	11%	17%	37%	21%	3%	1800
Slovenia	9%	4%	12%	45%	26%	4%	1286
Spain	8%	18%	30%	25%	18%	1%**	2576
Estonia	8%	9%	23%	34%	19%	6%	1661
Portugal	6%	8%	8%	49%	27%	2%**	2367
Hungary	5%	7%	17%	41%	23%	7%	1544
Croatia	5%	15%	9%	34%	33%	5%	1484
Israel	5%	3%	5%	57%	26%	5%	2490
Greece	4%	6%	8%	52%	25%	5%	2072
Italy	4%	10%	8%	38%	37%	3%	1529
Poland	4%	13%	10%	37%	33%	3%	1619
Cyprus	4%	11%	15%	38%	28%	4%	1215
Bulgaria	3%	17%	6%	37%	32%	6%	2230
Czech Republic	3%	11%	14%	46%	19%	7%	2018
Latvia	3%	7%	7%	41%	27%	16%	1980
Russia	2%**	17%	4%	41%	29%	7%	2512
Ukraine	1%**	21%	6%	36%	30%	6%	1845
Turkey	1%**	3%	2%**	67%	26%	1%**	2416
Romania	1%**	7%	1%**	59%	28%	4%	2146
Slovakia	1%**	20%	6%	36%	35%	3%	1810
TOTAL	10%	9%	15%	38%	23%	5%	62936

* Table is sorted by the share of the first class.

** The share with non-significant difference from zero ($p < 0,05$).

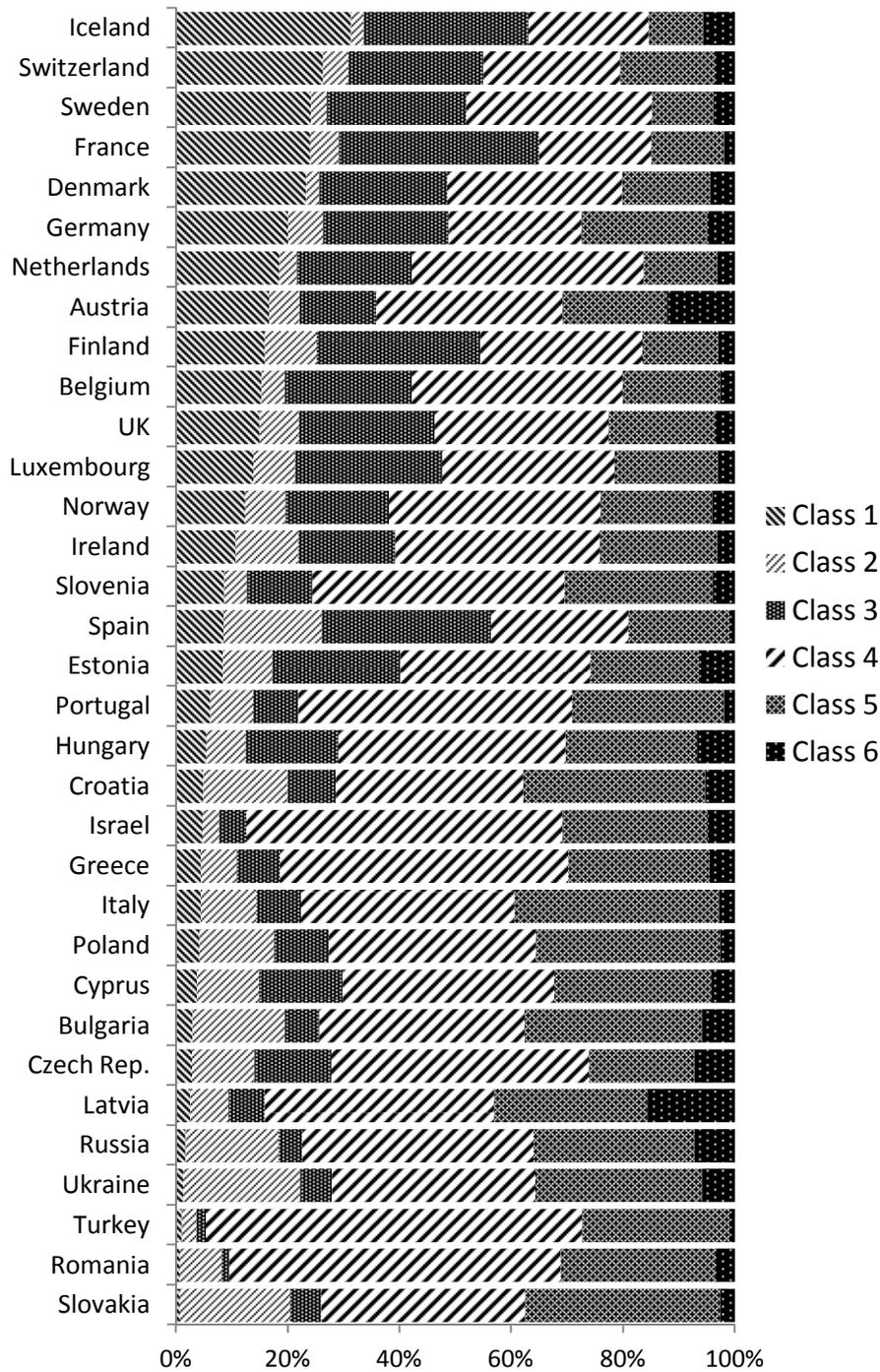


Figure 4. The distribution of the population of 33 European countries among value classes, % of row

Note to Figure 4. Class 1: strong preference for Self-Transcendence over Self-Enhancement & moderate preference for Openness over Conservation; Class 2: strong preference of Self-Transcendence to Self-Enhancement & strongest preference for Conservation over Openness; Class 3: strongest preference for Self-Transcendence over Self-Enhancement & weak preference for Conservation over Openness; Class 4: close to zero preference for Self-Transcendence over Self-Enhancement & no preference between Conservation and Openness; Class 5: moderate preference for Self-Transcendence over Self-Enhancement & moderate preference for Conservation over Openness to change; and Class 6: weak preference of Self-Enhancement to Self-Transcendence & moderate preference of Openness to Conservation.

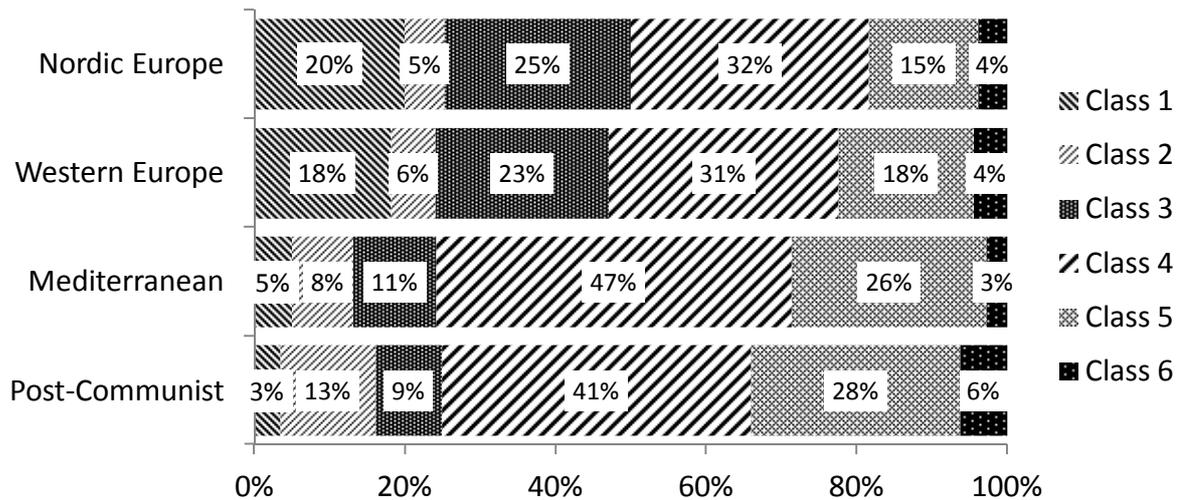


Figure 5. The distribution of the population of 33 European countries among value classes, % of row

Note to Figure 5. Class 1: strong preference for Self-Transcendence over Self-Enhancement & moderate preference for Openness over Conservation; Class 2: strong preference of Self-Transcendence to Self-Enhancement & strongest preference for Conservation over Openness; Class 3: strongest preference for Self-Transcendence over Self-Enhancement & weak preference for Conservation over Openness; Class 4: close to zero preference for Self-Transcendence over Self-Enhancement & no preference between Conservation and Openness; Class 5: moderate preference for Self-Transcendence over Self-Enhancement & moderate preference for Conservation over Openness to change; and Class 6: weak preference of Self-Enhancement to Self-Transcendence & moderate preference of Openness to Conservation.

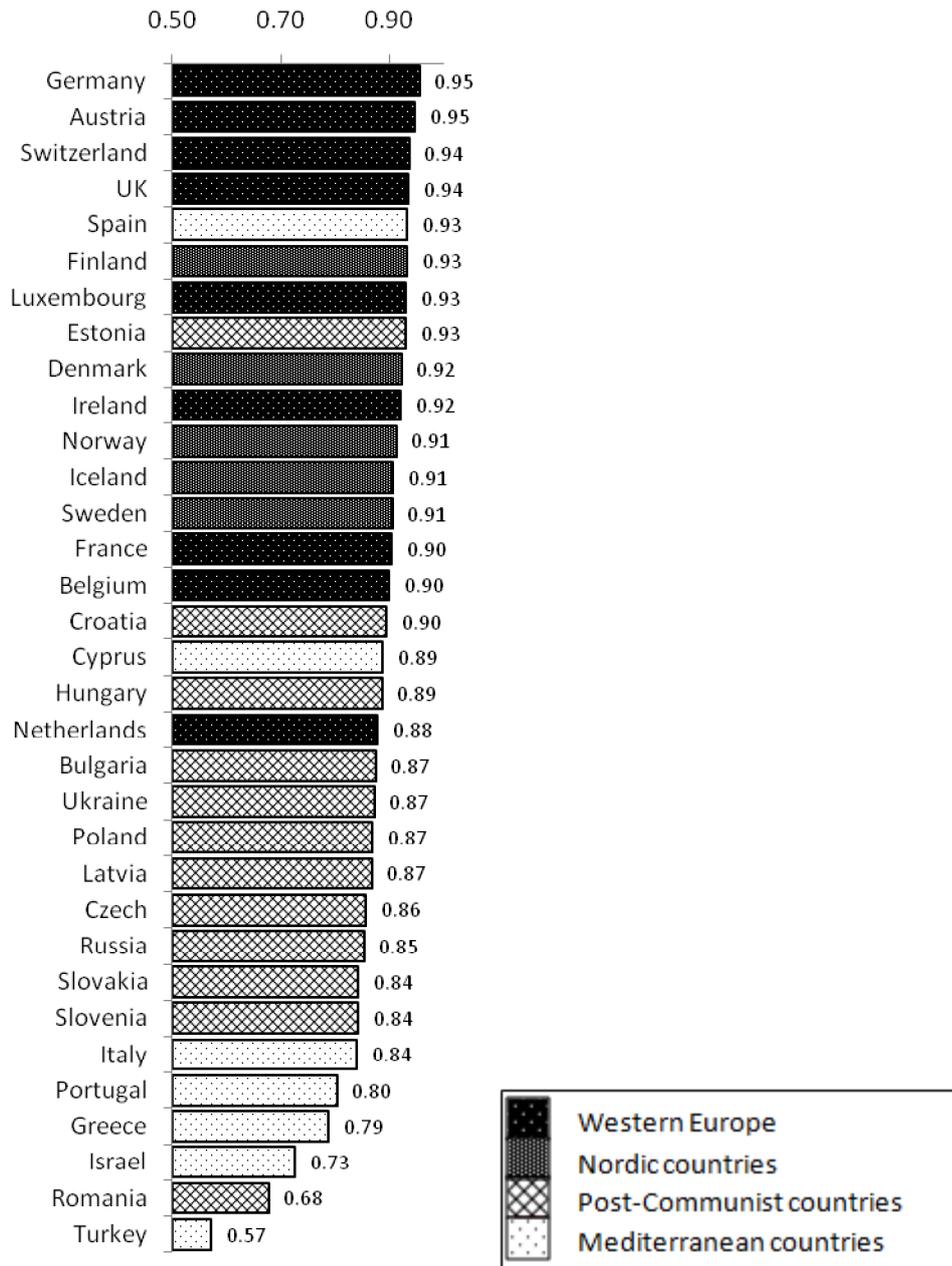


Figure 6. Normalized index of fractionalization in 33 European countries

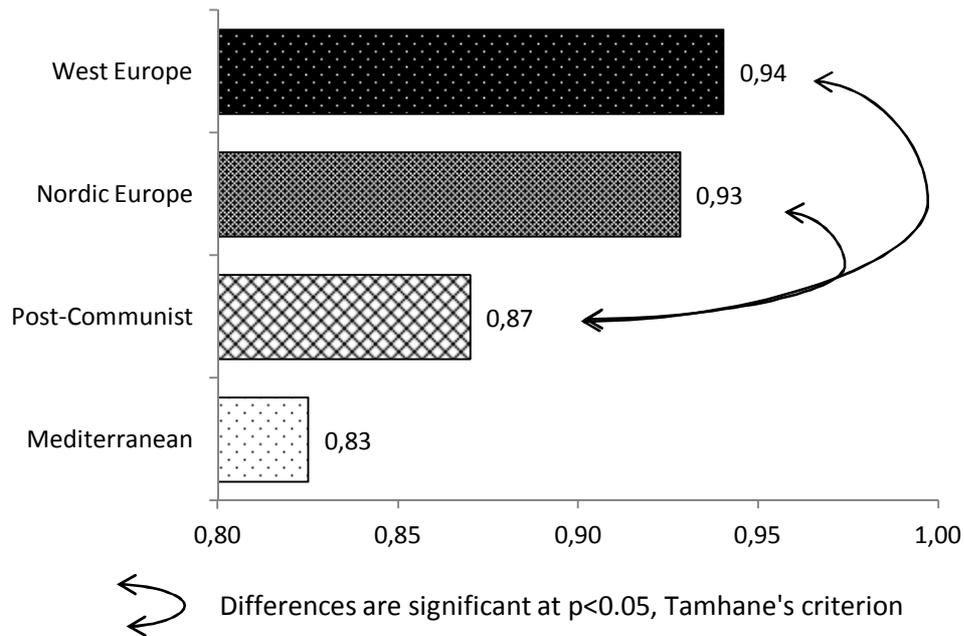


Figure 7. Normalized index of fractionalization in 33 European countries

CONCLUSION

1. The populations of the 33 European countries have been classified on the basis of their responses to 21 items of the Schwartz Portrait Value Questionnaire with latent class analysis. The data from the fourth (2008) round of the European Social Survey were mainly used and the analysis resulted in six value classes.

2. Our first hypothesis considered the value classification as a holistic method of representing value relations and postulated *preferences* as the universal grounds for value-based classification. Indeed, latent class analysis resulted in this kind of classification. The members of most of the value classes differ from each other by their *pattern of preferences* between different values.

But we did not expect that the largest class obtained would gather the respondents with zero or close to zero preferences among different value items or value categories. Unlike the other five classes, which differ from each other by the *substance* of value preferences, this class differs from all the others by the general *style* of the value statements. Members of this class rate every value item similarly. This “unexpected class” demonstrated remarkable cross-country differences, being much more represented in post-Communist and Mediterranean than in Nordic and Western European countries. One of the questions that should be answered through further studies concerns this class dependence on the exact diagnostic procedure built into the ESS

version of Portrait Value Questionnaire. Will this “no-preference” class survive under alternative approaches to value measurement?

3. Our second hypothesis concerned the within-country diversity and empirical results corroborate it. We have found that all the countries studied are internally diverse in their value class composition. 25 countries have representatives of all six value classes (types), and 31 countries have representatives of not less than five value classes. Even Turkey, which is the least diverse country in our sample, has three non-zero classes.

The socio-political implication of this fact is that in all of the European countries, even countries with very different value class compositions, there are people who can bridge these countries’ relationships by communicating with their “value allies” in the other country.

4. Our third hypothesis concerned the *substantive* aspect of cross-country comparison. It has been confirmed that there are significant differences in value class shares between Nordic and Western European countries on the one side and post-Communist and Mediterranean countries on the other. Statistically significant differences between these groups of countries have been found in shares of separate value classes and large differences have been found in ratios of membership in different value classes.

5. Our fourth hypothesis concerned cross-country comparison of the *formal* aspect of within-country diversity: we expected large between-country differences in levels of within-country value heterogeneity. As a measure of value heterogeneity, we used the value fractionalization index. Greater fractionalization means a greater degree of evenness of within-country value classes, and it seems that such evenness may be conducive to the country’s advancement. We found that fractionalization is higher in more advanced European countries, i.e. in Western European and Nordic countries as compared to Mediterranean and post-Communist ones. This result is further strengthened by positive and significant correlation ($r=0,55$, $N=33$, $p<0,001$) with the country’s GNI per capita.

The unevenness of distribution means that the people in the given country are divided into value majorities and value minorities, and there is always a risk in such countries that the voices of the minorities may not be heard at all in the public space.

6. We can conclude that the latent value-based classes proved to be a feasible instrument for describing within-country value diversity and between-country value similarities and differences in Europe. Further steps include checking the robustness of the class system described and studying the determinants of class membership by regression analysis.

REFERENCES

- Alesina A., Devleeschauwer A., Easterly W., Kurlat S., Wacziarg R. (2003). Fractionalization // *Journal of Economic Growth*, 8(2), 155-194.
- ESS Edunet, 2004. Retrieved from: <http://essedunet.nsd.uib.no/cms/topics/1/1/1.html>
- Fischer R., Schwartz, S. (2011) Whence Differences in Value Priorities? Individual, Cultural, or Artifactual Sources // *Journal of Cross-Cultural Psychology*, 42(7), 1127-1144.
- Hofstede G. (2001). *Culture's Consequences: comparing values, behaviors, institutions, and organizations across nations (2nd ed.)*. Thousand Oaks, CA: SAGE Publications.
- Inglehart R. (1997). *Modernization and Postmodernization*. Princeton, NJ: Princeton University Press.
- Inglehart R., Baker W. E. (2000). Modernization, cultural change, and the persistence of traditional values // *American Sociological Review*, 65(1), 19-51.
- Inglehart R., Welzel C. (2010). Changing Mass Priorities□: The Link between Modernization and Democracy // *Perspectives on Politics*, 8(2), 551-567.
- Jowell R., Roberts C., Fitzgerald R., Eva G. (eds.) 2007. *Measuring attitudes cross-nationally: Lessons from the European Social Survey*. London: Sage.
- Kankaras M., Moors G., Vermunt J. (2011). Testing for Measurement Invariance With Latent Class Analysis / E. Davidov, J. Billet, P. Schmidt (eds.) // *Cross-Cultural Analysis: Methods and Applications*. London: Taylor and Francis. 359-384.
- Kankaraš M. (2010). *Essays on Measurement Equivalence in Cross-Cultural Survey Research* // Ridderkerk: Ridderprint. The Netherlands. (Doctoral dissertation).
- Lazarsfeld P.F., Henry N.W. (1968). *Latent Structure Analysis*. Boston: Houghton Mifflin.
- Lee J., Soutar G. N., Daly T. M., Louviere J. J. (2011). Schwartz Values Clusters in the United States and China // *Journal of Cross-Cultural Psychology*, 42(2). 234-252.
- Magidson J., Vermunt J.K. (2002). Latent class models for clustering: A comparison with K-means // *Canadian Journal of Marketing*, 20(1), 36-43.

Magun V., Rudnev M. (2008). Basic human values of Russians: similarities and dissimilarities with the other European countries // *Public Opinion Herald*, 1 (in Russian; translated into English: Magun V., Rudnev M. (2010). The Life Values of the Russian Population: Similarities and Differences in Comparison with Other European Countries // *Sociological Research*, M.E. Sharpe. 49(4), 3-57).

Moors G., Vermunt J. (2007). Heterogeneity in Post-materialist Value Priorities. Evidence from a Latent Class Discrete Choice Approach // *European Sociological Review*, 23(5), 631-648.

Muthén L.K., Muthén B.O. (1998-2010). *Mplus User's Guide*. Sixth Edition. Los Angeles, CA: Muthén & Muthén.

Na E.-Y., Duckitt J. (2003). Value consensus and diversity between generations and genders // *Social Indicators Research*, 62(1), 411-435.

Norris P., Davis J.A (2007) Continental Divide? Social Capital in the US and Europe // Jowell R., Roberts C., Fitzgerald R. and Eva G. (eds.) / *Measuring Attitudes Cross-Nationally: Lessons from the European Social Survey*. London: Sage Publications. 239-254.

Paniotto V., Maksimenko V. (1982). *Quantitative methods of sociological research*. Kiev. Naukova Dumka (in Russian).

Rudnev M., Magun V. (2011). Value Consensus and Determinants of Value Diversity in Russia and Other European Countries // *Public Opinion Herald*, 4(in Russian), 81-96.

Schwartz S. H. (1992). Universals in the content and structure of values: Theory and empirical tests in 20 countries // *Advances in experimental social psychology*, 25 / Ed. by M. Zanna. New York: Academic Press. 1-65.

Schwartz S. H. (2003). A Proposal for Measuring Value Orientations across Nations. *The Questionnaire Development Package of the European Social Survey*. Retrieved from: http://www.europeansocialsurvey.org/index.php?option=com_docman&task=doc_view&gid=126&Itemid=80.

Schwartz S. H. (2005). Robustness and fruitfulness of a theory of universals in individual human values / A. Tamayo, J. B. Porto(eds.) // *Valores e comportamentonasorganizacones [values and behavior in organizations]*. Petropolis, Brazil: Vozes. 56-95.

Schwartz S. H. (2007). Value orientations: measurement, antecedents and consequences across nations / R. Jowell, C. Roberts, R. Fitzgerald, & G. Eva (Eds.) // *Measuring attitudes cross-nationally. Lessons from European Social Survey*. London: Sage Publications. 169-204.

Schwartz S. H., Bilsky W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross cultural replications // *Journal of Personality and Social Psychology*, 58, 878-891.

Schwartz S. H., Melech G., Lehmann A., Burgess S., Harris M., Owens V. (2001). Extending The Cross-Cultural Validity Of The Theory Of Basic Human Values With A Different Method Of Measurement // *Journal of Cross Cultural Psychology*, 32(5), 519-542.

Schwartz S.H., Lehmann A., Roccas S. (1999). Multimethod probes of basic human values / J. Adamopoulos, Y. Kashima (Eds.) // *Social Psychology and Culture Context: Essays in Honor of Harry C. Triandis*. Newbury Park, CA: Sage. 107-123.

Schwartz S.H., Sagie G. (2000). Value Consensus and Importance: A Cross-National Study // *Journal of Cross-Cultural Psychology*, 31(4), 465-497.

Schwartz S.H., Verkasalo M., Antonovsky A., Sagiv, L. (1997). Value priorities and social desirability: Much substance, some style // *British Journal of Social Psychology*, 36(1), 3-18.

Siegers P. (2011) A Multiple Group Latent Class Analysis of Religious Orientations in Europe / E. Davidov, J. Billet, P. Schmidt (eds.) // *Cross-Cultural Analysis: Methods and Applications*. London: Taylor and Francis. 385-414.

Vermunt J.K. (2004). Latent profile model / M.S. Lewis-Beck, A. Bryman, and T.F. Liao (Eds.) // *The Sage Encyclopedia of Social Sciences Research Methods*. Thousand Oakes, CA: Sage Publications. 554-555.

Weighting European Social Survey Data. Retrieved from:

<http://ess.nsd.uib.no/ess/doc/weighting.pdf>

APPENDIX: MPLUS CODE FOR LATENT CLASS ANALYSIS

TITLE: LCA for 21 Schwartz ESS items

DATA:

FILE IS ESSdata.dat;

listwise=off;

VARIABLE: NAMES ARE

V1_cen

V2_cen

V3_cen

V4_cen

V5_cen

V6_cen

V7_cen

V8_cen

V9_cen

V10_cen

V11_cen

V12_cen

V13_cen

V14_cen

V15_cen

V16_cen

V17_cen

V18_cen

V19_cen

V20_cen

V21_cen

idno

centry

popwei;

WEIGHT is popwei;

MISSING are all (-999);

USEVARIABLES =

V1_cen

V2_cen

V3_cen

V4_cen

V5_cen

V6_cen

V7_cen

V8_cen

V9_cen

V10_cen

V11_cen

V12_cen

V13_cen

V14_cen
V15_cen
V16_cen
V17_cen
V18_cen
V19_cen
V20_cen
V21_cen;

CLASSES = KLUSTER(6);
AUXILIARY = idno centry popwei;

ANALYSIS:
TYPE = MIXTURE;
ESTIMATOR = MLR;
STARTS = 50 10;

OUTPUT: TECH11;
SAVEDATA:
FILE IS class_Schwartz6.txt;
FORMAT IS F20.10;
MISSFLAG = 999;

AUTHORS

Vladimir S. Magun

Head of the Unit for Personality Studies at the Institute of Sociology of the Russian Academy of Sciences, Head of the Laboratory for Comparative Studies of Mass Consciousness at the National Research University Higher School of Economics;

E-mail: maghome@yandex.ru

Maksim G. Rudnev

Research fellow at the National Research University Higher School of Economics and at the Institute of Sociology of the Russian Academy of Sciences;

E-mail: maksim.rudnev@gmail.com

Peter Schmidt

Professor at the Institute of Political Science University of Giessen, Co-director of International Laboratory of Socio-Cultural Research at the National Research University Higher School of Economics;

E-mail: peter.schmidt@sowi.uni-giessen.de

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