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WITHIN AND BETWEEN-COUNTRY VALUE DIVERSITY IN EUROPE: LATENT CLASS ANALYSIS

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WITHIN AND BETWEEN-COUNTRY VALUE DIVERSITY IN EUROPE: LATENT CLASS ANALYSIS[4]

In order to combine a study of within-country value diversity and cross-country differences, we applied a person-centered approach. Instead of focusing on the distinct value items, respondents from the 33 European countries were classified on the basis of the whole set of Schwartz value items (Portrait Values Questionnaire) by means of Latent Class Analysis. Six Pan-European value classes were found; they differ both by rank of values and degree of value preferences. Surprisingly, a class with the least pronounced value preferences appeared to be the largest one (38%).

In each country all six value classes are represented. Nordic and Western European countries have more uniform distributions of value class shares than Post-Communist and Mediterranean countries; this is suggested to be an implication of societal developmental processes which start from the few people who commit themselves to the values of more advanced countries.

JEL Classification: Z10.

Keywords: value, preference, heterogeneity, fractionalization, latent class analysis, European Social Survey (ESS), Portrait Values Questionnaire, cross-national comparison

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1. INTRODUCTION

The comparative cross-country analysis of human values has succeeded in discovering important value dimensions and in describing between-country similarities and differences in terms of these dimensions (Inglehart, 1997; Inglehart and Baker, 2000; Inglehart and Welzel, 2010; Schwartz, 2005, 2007; Hofstede, 1980). As a result, many countries have been located on cultural maps that represent each country by the values of an average resident. But by acting in such a way, survey researchers assume the homogeneity of representative samples instead of testing it (Muthén, 1989). Even in case the within-country value diversity was taken into account, the substantial aspects of this diversity did not serve as a basis for between-country comparisons. There are publications devoted to within-country value consensus and diversity (e.g., Schwartz and Sagie, 2000; Na and Duckitt, 2003; Schwartz and Fischer, 2011; Rudnev and Magun, 2011) but they are focused on the quantitative indicators of diversity as measured by the standard deviation or other statistical measures and rarely compare the substantial aspects of this diversity in different countries.

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

Minkov and Hofstede (2012) also argued that national cultures are very homogeneous and that a concept of national culture was challenged unfairly. Hierarchical cluster analysis based on values has demonstrated that regions frequently form clusters that coincide with the country they belong to, so the authors concluded that country as compared to cultural group is still a defensible unit of analysis. However, the authors did not address the issue of within-country value heterogeneity between individuals, constraining their study with the analysis of regional averages.

Magun and Rudnev (2008, 2012) used Schwartz's basic values (Schwartz, 1992) of the European populations for exploring within-country individual variance. They found that Inglehart and Welzel's (2010) statement about the lack of significant overlapping of within-country value distributions does not apply to European countries. It has been demonstrated that European countries' value averages on the Schwartz value dimensions appeared to be much closer to each other than their doubled standard deviations. This finding implies that the value overlap is much greater and the populations of the European countries (including former

Communist countries) have more similar values than could be expected from Inglehart and Welzel's point of view. In that case, comparison of country averages does not represent cross-country value similarities and differences in Europe comprehensively. Therefore, it is reasonable to search for an alternative procedure of cross-country comparison of values which is able to grasp both within- and between-country variance. If a successful alternative is found, it could become a model for cross-country comparisons of other kinds of individual phenomena and/or different sets of countries.

The most straightforward way of combining the study of within- and between-country variances using data from cross-national surveys is to plot the within-country distributions of each of the value variables and to observe how these distributions overlap in different countries. However, our idea is to find a more holistic and parsimonious instrument to reach this goal. The method which has been proposed for such purposes is the formation and testing of typologies (Hempel, 1952; Bailey, 1994). This implies the grouping of objects (people) into types on the basis of one or more attributes. In our case, value variables are the attributes which serve as the basis for grouping the people into value types. The statistical modeling and testing of typological hypotheses can be performed via any technique of clustering analyses. Depending on the state of knowledge about a subject studied, a researcher has to differentiate between the exploratory use of cluster and latent class analysis and its confirmatory use. Unlike a variable-centered approach, which is predominant in value research, a typological study employs a person-focused view, which focuses on relations among individuals rather than among variables (see Marsh, Ludtke, Trautwein, and Morin, 2009).

In their studies, Magun and Rudnev (2008, 2012) used *k*-means cluster analysis as an exploratory instrument for classifying the European population into 4 clusters based on 21 Schwartz's value items from the 3rd and 4th rounds of the European Social Survey. Next the within-country distributions of the 4 clusters' members were considered, and the within-country shares of each cluster were compared across all countries. The authors concluded that each country is heterogeneous and has the representatives of all clusters in its population. Furthermore, cross-country differences in values arise due to the fact that people are differently distributed between these clusters in the European countries. So, for a better understanding of country values, it is reasonable to represent them through a within-country distribution of value types' membership instead by country averages.

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 as an exploratory tool. Specifically they have found a four-cluster solution that has been robust for different countries and samples. As expected, the clusters differed 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 missed many of the value preferences, which were an essential feature of the value clusters they discovered.

Recently, latent class analysis (LCA) has become more popular as a method of classification. It is a model-based approach which is considered more robust than many widely used cluster analysis techniques (McCutcheon, 1987; Muthén and Muthén, 2010; Magidson et al., 2002). Moors and Vermunt (2007) have applied the LCA procedure for classification of respondents to study values cross-culturally as well. They classify Europeans and North Americans by their responses to three of Inglehart's questions on "materialism/post-materialism" and identify the consistent post-materialist class but no such a consistent materialist class. Moors and Vermunt were not interested in looking at within-country differences, but the method they used for classification is an attractive instrument for exploring such differences. The same implication comes from the papers put forth by Siegers (2011) and Kankaras (2010, 2011): Both researchers applied LCA to classify respondents on the basis of their values, religious orientations, and preferences for social development, and their main interest was to check the invariance of latent class structure in different countries.

Therefore, the classification of respondents based on their values appears to be a feasible method to compare countries in a more detailed manner than can be done by comparing country means. This classification is a holistic instrument which can combine different value items into a single nominal scale with several categories, each of which represents typical combinations of value preferences. A study of country heterogeneity using this approach is an advantage over more analytical studies of value heterogeneity using Schwartz's value indices, value categories, or even value dimensions (Schwartz and Sagie, 2000; Fischer and Schwartz, 2011). To the best of our knowledge, LCA has been widely used as a method of classification but, until now, within-country value heterogeneity was not an issue.

The added value of our paper is the development of a unified classification of all Europeans based on their basic human values. This classification can be used to demonstrate within-country value heterogeneity and at the same time provide a useful tool for country comparisons. Such a classification of respondents is a holistic way to aggregate value data unlike continuous value indices since it tackles the typical patterns ("syndromes") of the whole set of value preferences while continuous value indices characterize just parts of the preferences. This person-centered approach looks more realistic than the widely used variable-centered one. We will use LCA to fulfill these objectives.

Our study relies on Shalom Schwartz's approach to human values which he defines as "*desirable transsituational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity*" (Schwartz, 1994, p. 21). Schwartz (1992) postulated a theory that describes 10 individual basic human values (he calls them "value types") that are distinguished by their motivational goals. One of the most appealing features of Schwartz's theory is the integration of 10 basic human values into a broader value system. The dynamic relations between these basic values are represented by a circular continuum (see Figure 1). Adjacent value types share the same motivational emphases and are, therefore, compatible, while values that are further away from one another are less related or even conflicting. Universalism and Benevolence, for example, share transcendence of selfish interests, while the opposite value type Achievement focuses on personal success. The (quasi-)circular structure also makes it possible to distinguish four higher-order values (we call them "value categories"): Openness to Change, Conservation, Self-Enhancement, and Self-Transcendence. Pairs of these categories oppose each other along two dimensions: Openness to Change (Openness to Change will be referred in the following as Openness) vs. Conservation and Self-Enhancement vs. Self-Transcendence (Schwartz, 1992).

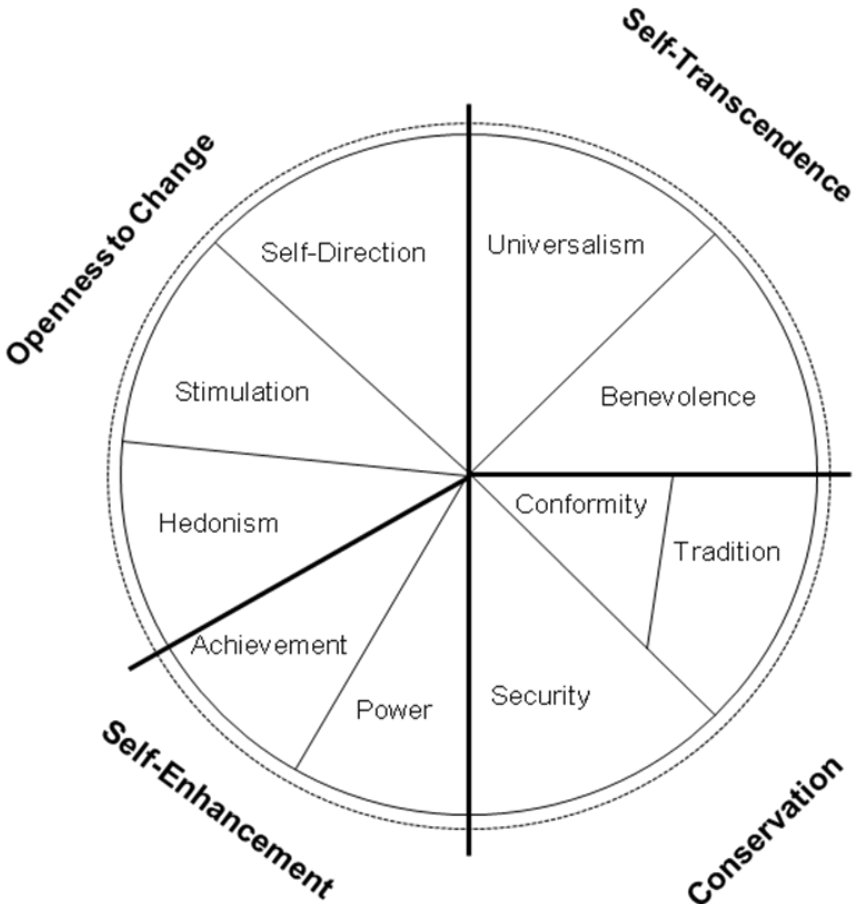

Figure 1. Schwartz value circle depicting the relations between 10 value types, 4 value categories, and 2 value dimensions (Schwartz, 1992)

2. HYPOTHESES AND RATIONALE

As Schwartz wrote "what really interests us is the *relative* importance of the … values to a person, the person's value *priorities***"** (Schwartz, 2005b, ch.4, p.5). His method measures such priorities, and thus the value classes are based on value preferences. We expect that these classes differ from each other both by rank of values and degree of value preferences. More specifically we expect that:

H1. There are classes of European respondents with milder and more extreme preferences.

Based on the results of the studies of within-country value diversity which used *k*-means cluster analysis as an instrument of country description (Magun and Rudnev, 2008, 2012; Lee et al., 2011), we postulate the following hypothesis.

H2. All the European countries are value diverse and each country contains at least a minor share of members from each of the value classes.

Based on cross-country comparisons of value average scores both of individual and cultural value variables (Schwartz, 2007, 2008; Magun and Rudnev, 2008, 2012), we postulate the following hypothesis on corresponding country differences in class shares. We expect that:

H3. Nordic and Western European countries have higher shares of the classes with stronger preferences for Openness to Change and Self-Transcendence, and Post-Communist and Mediterranean countries have higher shares of the classes with stronger preferences for Conservation and Self-Enhancement.

Alesina et al. (2003) introduced the conceptions of ethnic, linguistic, and religious fractionalization, which are measures of within-country heterogeneity and demonstrated the cross-country differences in fractionalization. Since ethnicity, language, and religion are important determinants of basic values, we postulate the following proposition:

H4. There are substantial differences in within-country value heterogeneity across European countries. Although we hypothesize these differences, we have no exact expectations of their direction.

Previous research on the determinants of the Schwartz values demonstrated that the most outspoken are effects of country of residence and age (Schwartz, 2007; Magun and Rudnev, 2008, 2012; Meuleman, Davidov, Schmidt, and Billiet, *in press*). In these publications the variables, not the classes, have served as dependent variables, but since classes are based on the combination of variables, we expect that:

H5. Country of residence and age exert the most profound effects on value classes.

To test our hypotheses, latent class analysis based on the 21 Schwartz value items will be applied to the all-European sample. The LCA produces a set of value classes which serve as a new starting point for the next testing procedures.

To test hypothesis H1 we compare mean absolute scores for the values across value classes. To test hypothesis H2 we cross-tabulate classes by countries and determine whether all the value classes are represented in each country. To test hypothesis H3 we compare shares of the classes with certain kinds of value preferences across four groups of European countries, that is, in Nordic, Western European, Mediterranean, and Post-Communist ones. To test hypothesis H4 we measure value heterogeneity of each country by its value class composition and then compare heterogeneity across countries. To test hypothesis H5 we use a multiple regression analysis predicting class membership with country, age, and some control variables on the pooled European sample.

The paper is organized as follows. First, we describe the data, variables, and methodology. Second, we present the latent class structure that results from latent class analysis and characterize 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. Fourth, we present the results of multiple regression analyses which demonstrate the factors that cause the probability of respondent's belongingness to each of the value classes. Finally, we compare the empirical results with the five postulated hypotheses.

3. DATA AND METHODOLOGY

3.1. Measures

We used the European Social Survey (ESS) data for 33 European countries (Jowell, Roberts, Fitzgerald, and Eva, 2007). The dataset included 12 Post-Communist countries (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). In total, data is available from 61,299 respondents. This paper is based mainly on the data from the fourth ESS round (2008-2009), which are supplemented with the data from the third round for Austria and Ireland, and from the second round for Iceland, Italy, and Luxembourg.

Since we are interested in finding a pan-European value classification, the data were weighted by population weight. The population weight increases the effects of samples from

highly populated countries and decreases the effects of the samples from less populated countries. The data were weighted by the design weight as well.[5]

Values were measured by a modification of the Portrait Values Questionnaire (PVQ) developed by Schwartz (Schwartz, Lehmann, and Roccas, 1999; Schwartz, Melech, Lehmann, Burgess, Harris, and Owens, 2001; Schwartz, 2005a). Respondents were provided with 21 descriptions of people for whom different things are important (see Table 1). Respondents 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), and "not like me at all" (1 point).[6] Like Schwartz's other instruments, the PVQ was designed to measure the 10 basic values (Schwartz and Bilsky, 1990; Schwartz, 1992). Additionally, this questionnaire may be used to generate other value variables, some of which are more elementary and others more integral. There are four sets of value variables (for details, see Table 1 in Appendix), which belong to various aggregation levels.

1. 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, that is, no aggregation has been applied.

2. Ten *value indices* ("second level" values) were calculated as averages of the first level values combining each index.[7]

3. Previous studies by Schwartz (1994) showed that the 10 "second level" values may be grouped into four *higher order values* ("third level" values): Conservation, Openness to Change, Self-Enhancement, and Self-Transcendence. Pairs of these value categories are related; with an increase in the subjective importance of one value category, the importance of its opposite decreases.

4. These relations allow for construction of the two *highest order value dimensions* ("fourth level" values): Conservation – Openness to Change and Self-Enhancement – Self-Transcendence.

The value category Conservation includes the values of security, conformity, and tradition, and the opposing value category Openness to Change includes the values of stimulation, self-direction, and hedonism. Self-Transcendence combines the values of benevolence and universalism, and Self-Enhancement combines the values of achievement and power. The scores for the value categories Openness to Change, Conservation, Self-Transcendence, and Self-Enhancement are calculated as averages of the value indices ("second level values"). The scores for the two value dimensions were calculated by subtracting the

[5] See: Weighting European Social Survey Data. URL: http://ess.nsd.uib.no/ess/doc/weighting.pdf
[6] In the ESS Questionnaire and in the original ESS database the scale direction is reversed.
[7] We do not use indices of this level in the current paper at all.

individual score for Conservation from the one for Openness to Change and the score for Self-Enhancement from the one for Self-Transcendence.

To adjust for an individual response set, or tendency to use a certain part of the rating scale (e.g., just low, high, or medium ratings to all the questions), Schwartz has suggested using the so-called centering procedure (Schwartz, Verkasalo, Antonovsky, and Sagiv, 1997; Schwartz, 2005b). Each value score for each individual respondent was centered by subtracting, from the raw score, the individual average for all the 21 value items. Since most of our analysis is based on 21 value items, we apply the centering procedure to these "first level" values. The implication of the centering procedure is that it "converts absolute value scores into scores that indicate the relative importance of each value in the individual's whole value system, that is, the individual's value priorities" or preferences (Schwartz, 2005b, ch.4, p.5).

Centered scores of a value item which are positive designate that an importance of this value is above an individual mean and this value is situated in the "privileged" part of the individual hierarchy. Negative centered scores of a value item designate that an importance of this value is below individual mean and this value is situated in the "underprivileged" part of individual hierarchy. So each value item score analyzed in this paper is by default a measure of a degree to which this value is preferred over all the others. The other kind of preferences is represented by the two value dimensions which measure a preference for Openness to Change over Conservation and for Self-Transcendence over Self-Enhancement.

3.2. Classification procedure

As mentioned above, to classify the respondents on the basis of their value syndromes (or value patterns) we use latent class analysis (LCA), which was introduced by Lazarsfeld and Henry (1968). LCA allows the researcher to identify a set of mutually exclusive discrete latent classes from observed categorical, ordinal, or continuous indicators (McCutcheon, 1987, Muthén and Muthén, 2010). Furthermore, LCA can be derived as a special case of a generalized latent variable model (Skrondal and Rabe-Hesketh, 2004). Compared to classical clustering methods like *k*-means, LCA is a model-based technique which takes into account measurement error, uses a probability-based approach instead of *ad hoc* criteria to estimate cluster centers, and provides a formal statistical test of the number of latent classes (Magidson and Vermunt, 2002).

Since our input variables are assumed to be continuous and we are interested in clusters, not factors, we have employed the so-called latent profile model (Vermunt, 2004). We used analysis of "Mixture" type in the Mplus software (Muthén and Muthén, 2010) and have chosen maximum likelihood robust estimation 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 for treating of missing values. The LCA procedure provides two kinds of information on a class membership of a respondent. The first one is a "yes-or-no" discrete variable representing the most likely latent class membership. The second one is the information about the probabilities of a respondent's inclusion into each of the classes evolved. Both types of variables are used in our analyses.[8]

We use value indices for description of classes that resulted from LCA. The position predominant in cross-country research states that it is legitimate to compare averages of any combined variables ("indices") only in case a researcher has proved invariance of this index's structure (that is, covariance of components) between groups included in the comparison. But such a check is not relevant when the grouping variable is classification based on the same items as the indices themselves. According to the "Local Independence Axiom" embedded into the LCA procedure, all variables entered into LCA are uncorrelated within classes (see McCutcheon, 1987). Thus, there cannot be cross-class invariance of covariation for the components of any value index just because there is virtually no covariance within each class. In addition, the intra-class *variance* of value items is rather low as well (simply by following the logic of LCA). So far, it is legitimate to use a value index to compare value classes assuming that these classes are just parts of the all-European population.

3.3. Value fractionalization

In order to measure and compare within-country value diversity we use the fractionalization index, which is a measure of diversity for nominal data. The concept and a way of computation were suggested by Alesina and coauthors (2003) to record ethnical, linguistic, and religious diversity of countries. It is based on the shares of each group within a country. Analogous to Alesina's index, our index of value fractionalization indicates the evenness (uniformity) of membership distribution of different classes within a given country: The higher the fractionalization, the more equal the distribution. When all the classes within a country have the same shares, fractionalization reaches its maximum. And the opposite is true as well: The lower a country's fractionalization index, the less uniform the distribution is (the more salient are the country's minorities and majorities).

To free this index from the influence of exact number of classes, we divide it by the maximum degree of fractionalization possible with the current number of classes and compute the normalized index of fractionalization:

[8] In contrast to Kankaras et al. (2011) and Siegers (2011), we do not need to check classes for the invariance across countries because our main interest is an *overall* cross-country classification applicable to Europe as a whole, and country of residence is considered as just one of the important determinants of pan-European value class membership.

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

where s_{ij} equals a share of group *i* in the country *j*. Normalized fractionalization equals 1 when all the classes have the same share in a country and 0 when one class has a share of 100 percent,, that is, all country population consists of members of only one value class.

4. RESULTS

4.1. Classifying Europeans by their Basic Values

A total of 61,299 respondents were classified in a various number of classes by the latent class analysis based on Schwartz's 21 value items. We approached the analyses in an exploratory manner, as there are no explicit prior theories about the number of classes. The optimal number of classes can be defined with the VLMR (Vuong-Lo-Mendell-Rubin) test. For each LCA classification the VLMR Test indicates the probability that an increase of the number of classes improves the classification. The results of the tests demonstrated that increasing the number of classes made a better model until the change from 6 classes to 7, since the 7-class solution compared to the 6-class solution did not improve the model fit. So, we came out with 6 classes as a minimum and sufficient number of groups to which the Europeans could be classified based on their basic values.

A preference of one value over the other has two distinct features. The first one is the rank, which provides information on the order of preference and identifies the preferred value and the one over which it was preferred. The second feature provides information on the degree of preference: How large is the difference in commitment between preferred and non-preferred values? In line with this dual nature of preferences, a description of typical value preferences in various classes are based on two kinds of information: (1) class averages of *absolute* value scores for each value which indicates the mean degree of preference and (2) class averages taking signs into account which indicate both a degree of preference and its rank.

The total average of absolute scores across all 21 items of members of class 4 is the lowest among the value classes and equals 0.7 (see Figure 2 and Table 1, section B, in the Appendix). In contrast, the highest magnitudes of value preferences are characteristic for class 2. The members of class 2 have the highest mean absolute scores for two thirds of value items and the highest total absolute score across all 21 items (its average equals 1.5). This finding means that the members of class 4 have the least pronounced and the members of class 2 have the most

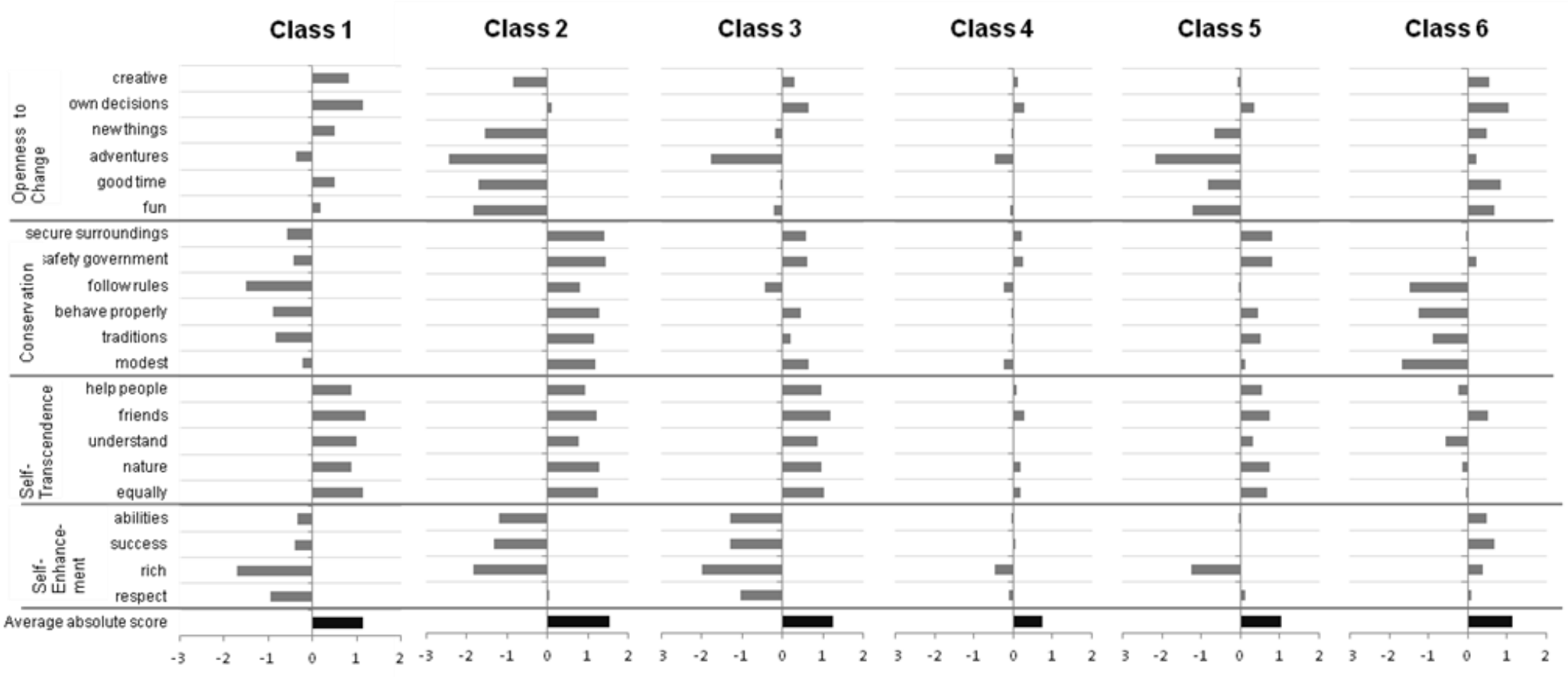

Figure 2. The mean scores of the value items and mean absolute scores for the 6 latent classes (N=61,299 respondents from 33 European countries)

pronounced individual value hierarchies as compared to the value hierarchies typical for the other classes' members. As for classes 1, 3, 5, and 6, their members have intermediate magnitude of value preferences, with total averages of their preference magnitudes ranging from 1.0 to 1.2.[9]

In other words, members of classes 2 and 4 probably have distinct response styles – tendencies to strong (class 2) or weak (class 4) value preferences.[10] However the fact that these people have a certain response style implies by no means that their value responses have no additional (substantial) meaning. There are two arguments for this. First, in case the response style is the only determinant of responses there would be no differences between (absolute) value scores within each class. And second, it refers to a respondent's tendency to provide low- or highly differentiated ratings and has nothing to do with the signs of value scores. Scores vary by their sign both within and between classes and this is an indicator of the substantial meaning of the value responses under consideration.

We turn now to the comparison of the preferences *per se* that is, a combination of both direction and degree. Mean scores of value items demonstrate remarkable differences between classes in each row of Figure 2 (and Table 1, section A, in the Appendix). Most of the items (with two exceptions) have both positive and negative average scores in various classes. A positive class score means that the importance of this value is above average in the hierarchy of 21 value items while a negative score means that the importance of this value is below average.

Average members of classes 2, 3, and 5 (encompassing 47% of the European population) prefer values of Conservation to Openness to Change, and average members of classes 1, 2, 3, 4, and 5 (encompassing 95% of the European population) prefer Self-Transcendence to Self-Enhancement. The opposite preferences are less popular: Openness values are preferred to the Conservation ones by the average member of classes 1 and 6 (15% of population) and Self-Enhancement values are preferred to Self-Transcendence ones only by the average member of class 6 (5% of Europeans).[11]

The average member of *class 1* (10% of the population) combines a moderate preference for Openness to Change values over Conservation with the strong preference for

[9] All the overall magnitudes for each value class (averaged across 21 items on the individual level) are significantly different from each other (ANOVA, Tamhane criterion, $p<0.001$).

[10] There are a number of studies dealing with the strong ability of LCA to disentangle different kinds of response styles, like extreme response style, acquiescence, satisficing, etc. (Moors, 2003, 2004, 2007; Kaminska, McCutcheon, and Billiet, 2010; Kieruj and Moors, 2011; Van Vaerenbergh and Thomas, 2012).

[11] The scores for value categories of the average value classes' members are taken from the bottom of Table 1 (in the Appendix). We report here the shares of *average* class members, the distribution of individual preferences are similar but slightly different.

Self-Transcendence over Self-Enhancement values.[12] Both kinds of preferences can be easily recognized in Figure 2, where the boxes depicting the degree of importance of values from opposite value categories lie on different sides of the zero point. As compared to the other classes, the average member of class 1 combines the highest average scores for several Openness to change values (creativity, independence, and innovativeness) with the lowest scores for Conservation values (importance of secure surroundings, strong state protection, and following rules) as well as the highest scores for Self-Transcendence values (care of people around, loyalty to one's friends and close people, and tolerance of people who are different) with the lowest scores for power and second to the lowest scores for the other three Self-Enhancement value items. So, both by internal value profile and as compared to the other classes, class 1 is distinguished by preference for Openness to Change and Self-Transcendence and by disregard of Conservation and Self-Enhancement.

The average member of *class 2* (9% of the population) has a strong preference for Self-Transcendence over Self-Enhancement values and the strongest preference for Conservation over Openness to Change values. In a more general sense, as mentioned above, class 2 members have the most salient value preferences and, accordingly, they have the largest number of items with extremely high and extremely low averages among all the classes (16 extreme averages in all). In class 2, the average member (compared to members of other classes) has the lowest scores for the Openness to Change values of creativity, independence, innovativeness, seeking adventures and fun, having a good time, and the highest scores for the Conservation values of secure surroundings, strong state protection, following the rules, behaving properly, being humble, and following the customs handed by religion and family. Furthermore, the members of this class have the highest scores for the Self-Transcendence values of caring for people around, loyalty to one's friends and family, and tolerance to the people who are different, in combination with the lowest scores for the Self-Enhancement values of success and second to the lowest scores for the other three Self-Enhancement items.

The average member of *class 3* (15% of the population) has the strongest preference for Self-Transcendence over Self-Enhancement values, but a weak preference for Conservation over Openness. As compared to the other classes, the peculiarity of class 3 is that the lowest scores were obtained on all four Self-Enhancement value items (positive social

[12] We consider the preference for one value category over the other as *strong* if the difference between value scores was 1.9 or higher, as *weak* if the mentioned difference was 0.6 or lower, and *moderate* in all other cases. When we take into consideration the sign (direction of preference), all the average preferences for Openness to Change over Conservation mentioned in Table A.1 are significantly different from each other across classes and the same is true for preferences for Self-Transcendence over Self-Enhancement (ANOVA, Tamhane criterion, $p<0.001$).

evaluation, personal success, wealth, and power). In contrast, they have the highest or second to the highest scores on most of the Self-Transcendence values. The class averages for the values of Openness and Conservation are intermediate. A member of class 3 has remarkably positive scores for Conservation values (except for ”following rules” item) but negative or zero averages for most of the Openness values (except for “independence” and “creativity” items).

The value preferences of the average member of *class 4* on both value dimensions are very low. It differs from all the other classes by the lowest level both of scores and absolute scores. Class 4 is the largest one, and it includes more than a third (38%) of the European population. As compared to the other classes, the average scores of class 4 members are mostly intermediate. The exceptions are the lowest score on the care for friends/close people item of Self-Transcendence and the second to the highest scores on two Self-Enhancement values (success and seeking positive social evaluation), the relatively low scores on independence and modesty, and the relatively high score on innovation.

Class 5 (the second largest, consisting of 23% of the population) is similar to classes 2 and 3 in its members’ preference for values of Conservation over values of Openness. The average member of class 5 has remarkably positive scores on four value items from the Conservation domain and remarkably negative scores on four value items from the Openness domain so the resulted preference for Conservation over Openness values is weaker than for class 2 members but stronger than for class 3 members.

The average member of *class 5* combines a moderate preference for Self-Transcendence over Self-Enhancement with a moderate preference for Conservation over Openness to Change value items. Class 5 is similar to classes 1, 2, and 3 in its members’ preference for values of Self-Transcendence over values of Self-Enhancement, but the degree of such a preference for class 5 is lower. Furthermore they have positive scores on Self-Transcendence values but these scores are lower than in the three other classes just mentioned. And most of the class 5 averages for Self-Enhancement values, unlike the other three classes, are not negative but close to zero.

The average member of *class 6* (the smallest one, 5% of the population) combines a weak preference for Self-Enhancement over Self-Transcendence with a moderate preference for Openness over Conservation values. Class 6 is similar to class 1 in moderate preference of its members for Openness values over Conservation. However, this class is special because its members display a preference for Self-Enhancement value items over Self-Transcendence ones. Most of the average scores of the members of this class are extreme as compared to the averages of the other classes. Class 6 members have the highest scores on four Openness

items and extremely low scores on the four Conservation value items, the highest scores on all the Self-Enhancement items and lowest scores on all but one Self-Transcendence value items.

Figure 3 depicts value classes in the space of the two value dimensions according to the average class scores on these dimensions. As mentioned above, the meaning of the dimension score of the individual is his/her preference for one value category over its opposite value category. Therefore, this figure is helpful for describing classes in terms of the average member's preference between Openness and Conservation as well as between Self-Transcendence and Self-Enhancement. Class descriptions following from this figure are in full accordance with the description provided above and based mainly on the primary value items. Figure 3 looks like a flock of cranes with classes 2, 3, and 1 making one chain of the flock which is approximately parallel to Conservation – Openness axis and classes 2, 5, 4 and 6 making another chain which goes along a map diagonal.

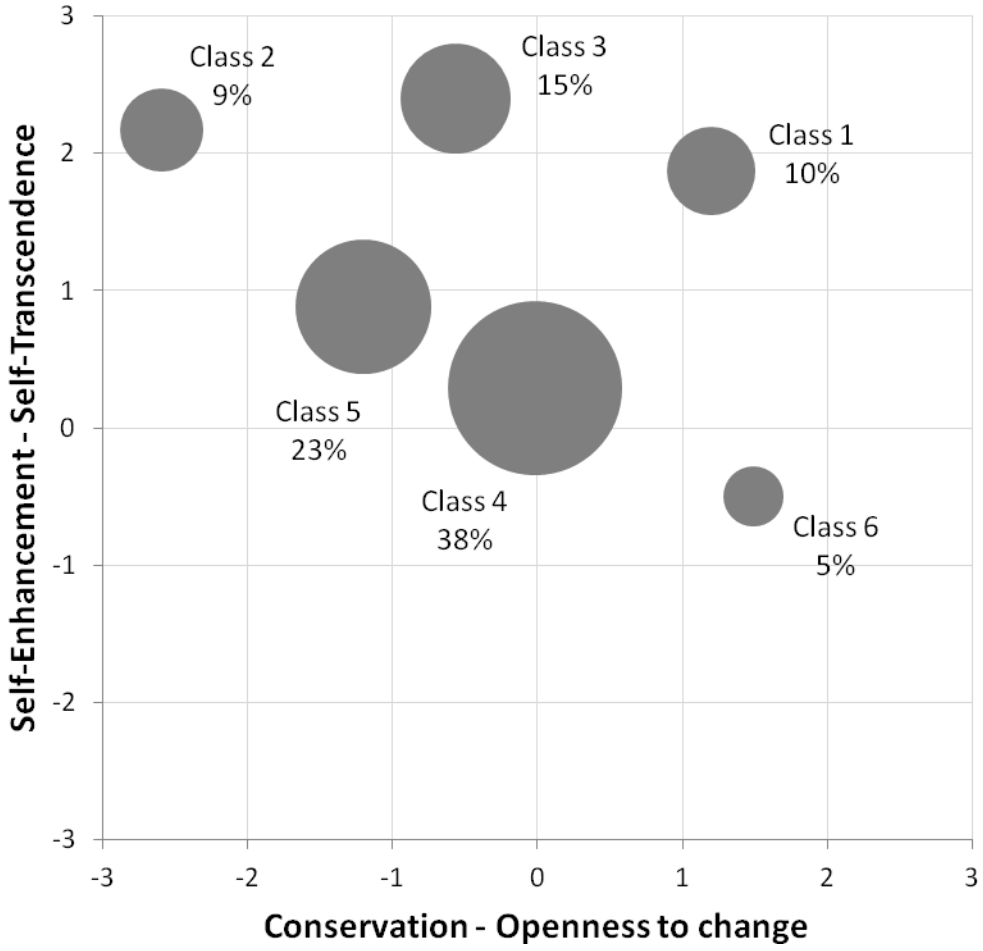

Figure 3. Six latent classes in the two-dimensional Schwartz value space (N=61,299 respondents from 33 European countries; the classes are located according to their average scores on each of the value axes)

4.2. Within- and Between-Country Value Differences and Similarities

As mentioned above, the classification of all 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-tabulated the class membership and country of residence. The respondents' class shares within their country of residence are listed in Figure 4 and in Table 2 of the Appendix.

These shares demonstrate that each of the 33 countries is internally diverse in its value class composition and each has members of all six value classes.[13] Due to this fact, each country has something in common with all others.[14]

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 Europe.[15] There are clear differences between Nordic and Western European countries on the one side and Mediterranean and Post-Communist countries on the other (Figure 5).

Members of classes 1 and 3, combining a strong preference for Self-Transcendence (over Self-Enhancement) and relatively high commitment to Openness to Change (preferred over Conservation or only slightly less preferable), are more represented in Nordic and Western Europe than in Mediterranean and Post-Communist Europe. Classes 2, 4, and 5, on the contrary, are more represented in Mediterranean and Post-Communist Europe than in Nordic and Western countries (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 for Conservation over Openness (class 2) or combination of the moderate preference for Self-Transcendence over Self-Enhancement and the moderate preference of Conservation to Openness (class 5). Statistically significant negative correlations between the country shares of classes 1 and 3 on one hand, and classes 2, 4, and 5 on the other, as well as

[13] The countries like Iceland, France, Denmark, Spain, Russia, Ukraine, and Slovakia have a class embraced by 1 or 2% of population only, Romania has two such classes, and Turkey has even three. Nonetheless, even the shares of these least populated classes are statistically significant ($p<0.001$)

[14] For example, Russia has the same six value classes which France and other European countries have. Some value classes that are well represented in France 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 patterns of value preferences do exist in both countries.

[15] This classification has been successfully applied by Norris and Davis (2007).

positive or non-significant correlations between shares of classes belonging to the same group confirm our division of the classes into two groups.

Of the Nordic and Western European populations, 45% and 41% are members of class 1 and 3, respectively: This represents almost half the population in these countries, and there are 2 to 3 times less members of these classes in the Mediterranean and Post-Communist countries (16% and 12%, respectively). Combined membership in classes 2, 4, and 5, is 78% and 82% for the Mediterranean and Post-Communist countries' populations, and this is substantially less for the Nordic and Western European countries (52% and 55%, respectively). As a result, membership in classes 2, 4, and 5 is only slightly higher than membership in classes 1 and 3 in the Nordic and Western European countries but the former is much higher than the latter one in the Mediterranean and Post-Communist countries.

The impression that the shares of value classes 1 and 3 are larger in more advanced countries and that membership in classes 2, 4, and 5 is negatively associated with country advancement is further confirmed by strong correlations of these classes' membership in a given country with its gross national income (GNI) per capita (0.85 for classes 1 and 3 aggregated membership and -0.83 for classes 2, 4, and 5 aggregated membership).[16]

Now we turn to the description of the formal aspect of within-country value diversity which is measured by the fractionalization index. Figure 6 demonstrates that the four groups of European countries differ in their degree of fractionalization. Nordic and Western European countries have consistently higher fractionalization and Post-Communist and Mediterranean countries have lower fractionalization (the difference is statistically significant for Post-Communist countries). We can see that within-country class distributions are more uniform in the Nordic and Western countries and are less equal in Post-Communist and Mediterranean countries.[17]

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 a country's gross national income per capita.[18]

[16] These correlations are higher in absolute value than correlations of GNI per capita with country averages of value indices and value dimensions (the country average for Self-Direction is the only exception, its correlation with country GNI per capita equals 0.84).

[17] The order of value fractionalization 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, $p<0.001$).

[18] GNI per capita in this paper is measured by the Atlas method in current international dollar (World Bank Database, 2008).

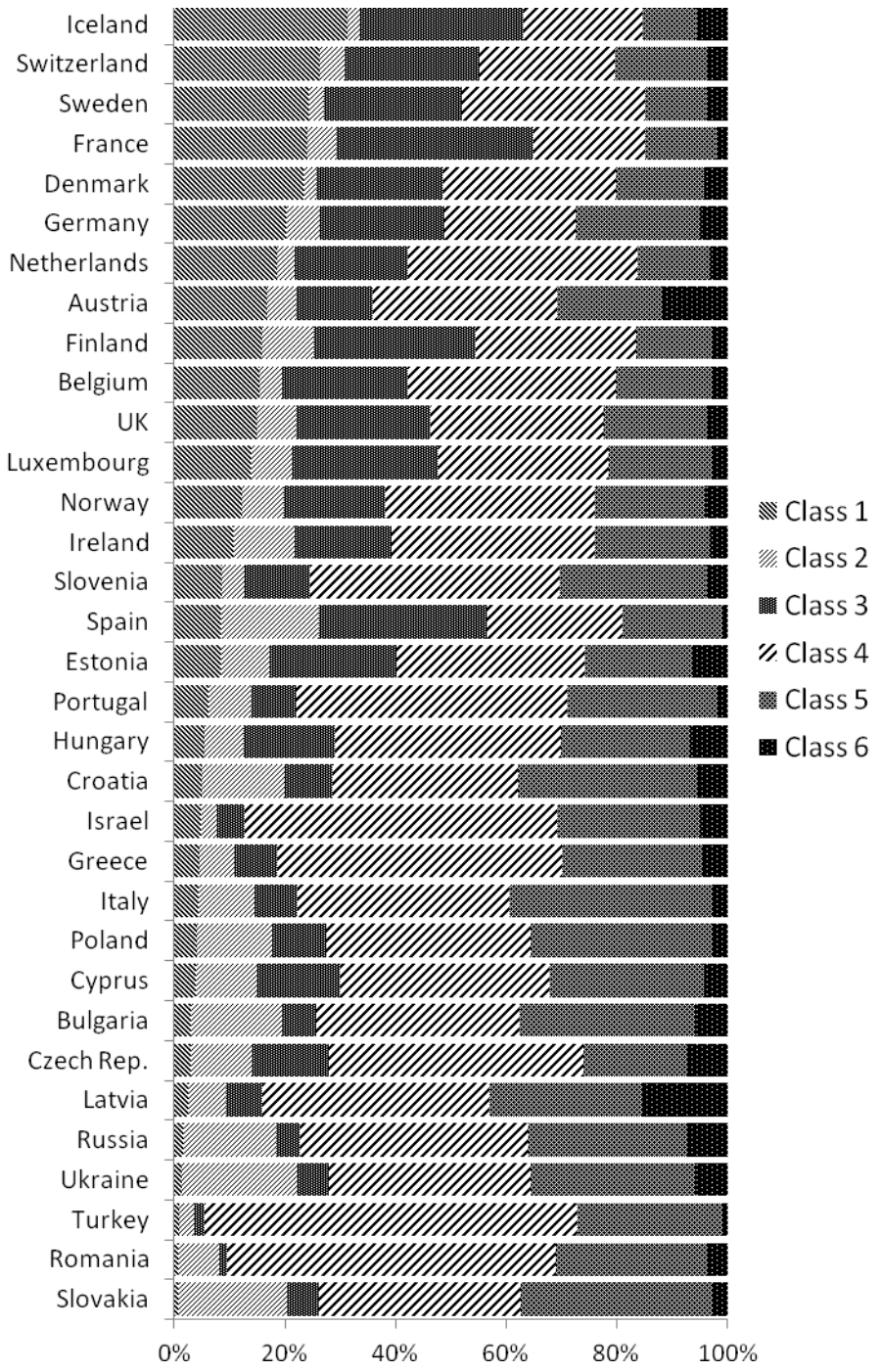

Figure 4. The distribution of the population of 33 European countries among value classes, percentage of row

Note to Figure 4. Class 1: strong preference for Self-Transcendence over Self-Enhancement & moderate preference for Openness over Conservation; *class 2*: strong preference for Self-Transcendence over 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*: weak (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; and *class 6*: weak preference for Self-Enhancement over Self-Transcendence & moderate preference for Openness over Conservation.

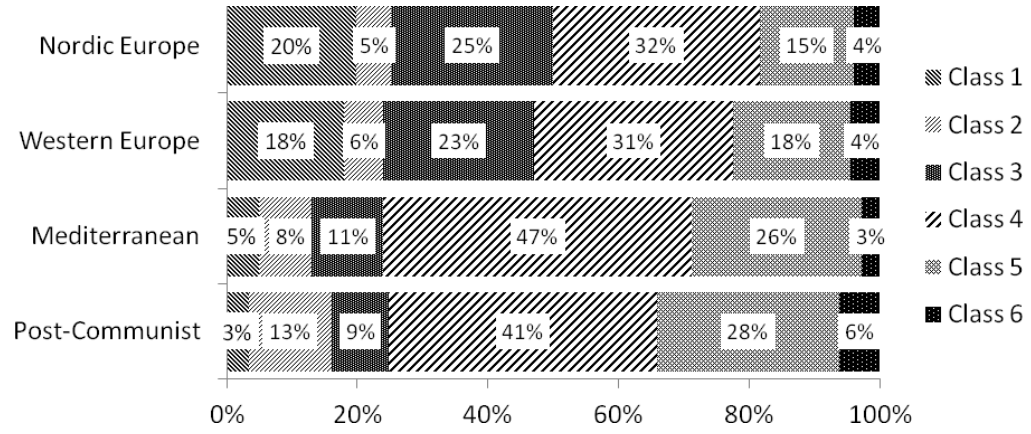

Figure 5. The distribution of the population of 33 European countries among value classes, percentage of row

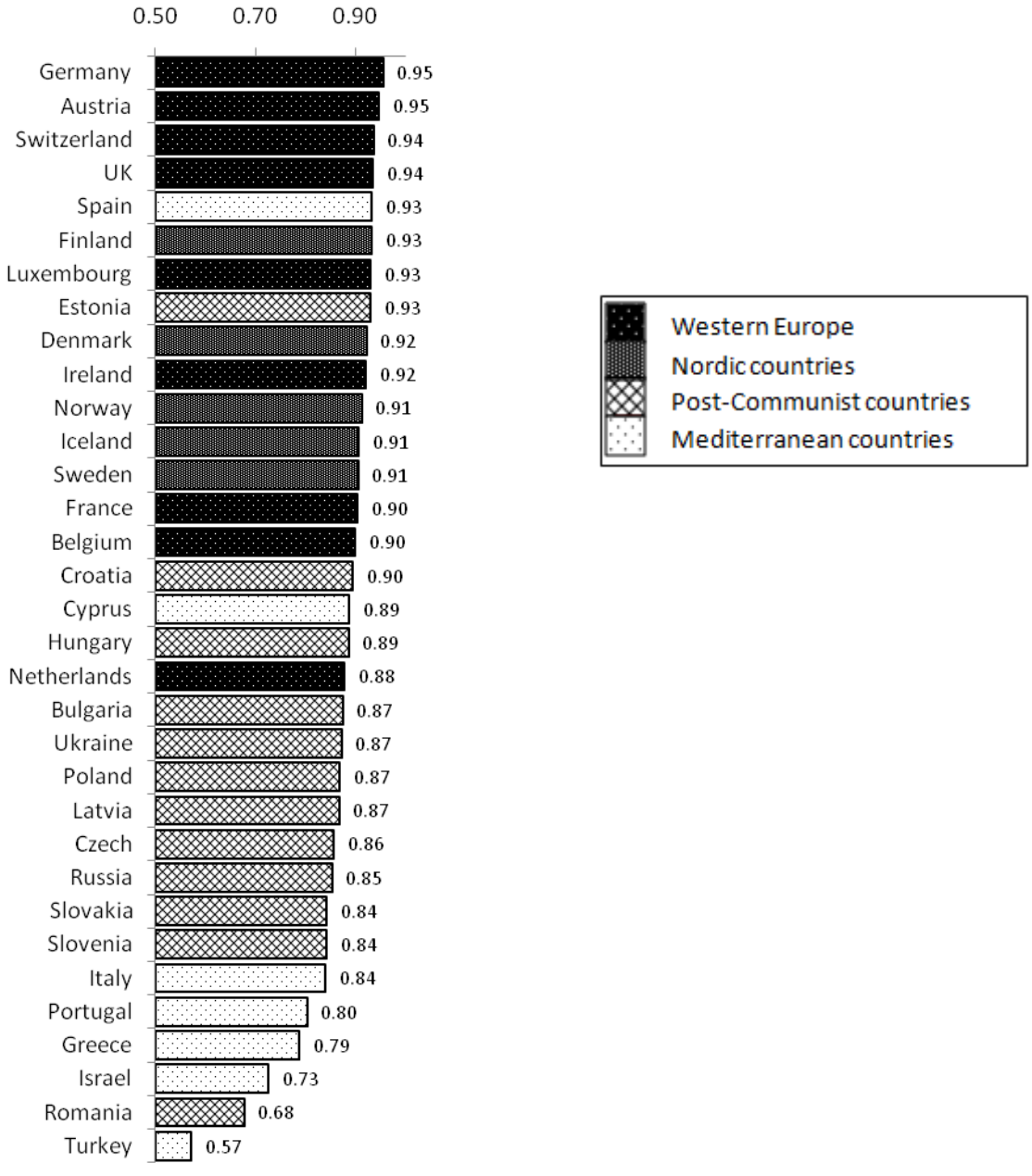

Figure 6. Normalized index of fractionalization in 33 European countries

4.3. Country as a Determinant of Value Class Membership: Multiple Regression Analysis

The results presented in the previous section have demonstrated the impact of a country on value class membership, but these effects may be mixed up with effects of individual variables. For example, a high share of class 1 membership in a country might be an effect both of individual characteristics of its population and country-level variables like GNI or national culture. In order to check if country effects on value classes described above will sustain controlling for individual differences, we employed multiple regression analysis with two kinds of independent variables, one of which refers to respondent's country of residence and the other one including such predictors as respondent's age, gender, type of settlement, education, and characteristics of parental family.[19] We chose Sweden as a reference group for respondent's country of residence because this country is salient by its value class distribution (see Figure 4). Therefore, the regression coefficients describing country effects indicate how values are influenced by living in that country as compared to living in Sweden.

Since respondent's probabilities to join each of the six value classes are continuous and, hence, contain more information than dichotomous "yes-or-no" variables, we consider them as more suitable dependent variables for regression analysis. Table 1 demonstrates unstandardized coefficients for six linear regressions with probabilities of each class membership as dependent variables.

The explained variances of respondent's probabilities in the regression models measured by adjusted R^2 range from 0.10 to 0.16. All the predictors in the models are dummy variables so the unstandardized effects are comparable.

All the statistically significant *country effects* on the probability of classes 1 and 3 membership are negative (with three minor exceptions) and all the coefficients for classes 2, 4, and 5 are positive (with 4 exceptions for class 4). It means that the probability of being a member of class 1 or 3 is lower for populations of most of the European countries than for the Swedish population, and the probability of membership in classes 2, 4, or 5 is higher for populations of most of the European countries than for the Swedish population.

The regression coefficients for Mediterranean and Post-Communist countries are generally higher in absolute value than for the Nordic and Western European countries which mean that the population of Nordic and Western European countries is closer to Sweden in its

[19] Age, gender, and parental family features may affect the respondent's values but the reverse influence is impossible. Therefore these demographic variables are exogenous. As to respondent's education, type of settlement, and country of living, their reciprocal effect on values may exist but we assume that this effect is rather weak compared with the effects of these variables on basic values.

values than the population of Post-Communist and Mediterranean countries. Taking into account the signs of these coefficients, we can infer that for populations of Mediterranean and Post-Communist countries the probability to join classes 1 or 3 is lower and the probability to join class 5 is higher than for populations of Nordic and Western European countries.

The differences in country effects on probability of class membership revealed in regression analysis are in accordance with the results of direct cross-country comparisons of class membership described above (see Table 2 in the Appendix and Figures 4 and 5). These differences and similarities have remained even when controlling for the effects of age and other demographic and social status individual-level variables.[20]

We may also conclude that membership in three value classes (classes 1, 3, or 5) is more influenced by respondent's country of living than membership in classes 2, 4, or 6.

The most influential individual-level predictor among those we studied is respondent's age. All *effects of age* are statistically significant, and they are most pronounced in models predicting membership of classes 4 and 5 and least pronounced for membership in classes 1 and 3. Moreover, there are two opposing age effects: for classes 2, 3, and 5 they are positive and for classes 1, 4, and 6 are negative (Figure 7). Since the probability of membership in one class means the probability of non-membership in the other classes, the difference of signs of the same predictor is an expected outcome. We have seen a similar difference of signs for country effects on membership in various value classes as well.

Class 1 is the only class for which respondent's membership is predominantly determined by country of residence and, by the same token, membership in class 4 and in class 6 is predominantly affected by age.

In addition to country and age effects, the probabilities of membership in all (or most) of the classes are significantly but less strongly influenced by gender, education, settlement, and family socialization characteristics. This conclusion is in accordance with previous studies demonstrating that the strongest effects on values stem from age (Schwartz, 2007; Magun and Rudnev, 2008, 2012; Meuleman, Davidov, Schmidt, and Billiet, in press) and country of residence (Magun and Rudnev, 2008, 2012).

[20] All correlation coefficients between country class shares and regression coefficients for country dummies indicating country effects on class membership are highly positive and close to 1.

Table 1. Unstandardized linear regression coefficients (B) for the respondent's probabilities to be included into value classes (N=61,075 respondents from 33 European countries)

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Age (reference group - 15-20 years old)						
21-30 years	-0.02**	0.02**	0.04**	-0.03**	0.05**	-0.06**
31-40 years	-0.05**	0.04**	0.07**	-0.07**	0.13**	-0.11**
41-50 years	-0.04**	0.07**	0.08**	-0.14**	0.16**	-0.13**
51-60 years	-0.07**	0.10**	0.11**	-0.19**	0.19**	-0.14**
61-70 years	-0.09**	0.16**	0.12**	-0.21**	0.17**	-0.15**
above 70 years	-0.12**	0.24**	0.12**	-0.27**	0.19**	-0.15**
Gender: Male	-0.01*	-0.04**	-0.04**	0.09**	-0.02**	0.02**
Settlement: Living in a big city (1)/ living in a town or rural area (0)	0.01*	-0.01**	-0.01**	0.02**	-0.01**	0.01**
Education (reference group - Not completed primary education/Primary or first stage of basic education)						
Lower secondary or second stage of basic education	0.00	-0.06**	0.07**	0.02*	-0.01	-0.02**
Upper secondary/Post secondary, non-tertiary	0.02**	-0.09**	0.06**	0.03**	0.00	-0.02**
First stage of tertiary/ Second stage of tertiary	0.05**	-0.12**	0.04**	0.03**	0.02*	-0.02**
Respondent's parental family socialization characteristics						
At least one of the parents completed higher education	0.04**	-0.02**	-0.02*	0.01	-0.03**	0.03**
At least one parent was an employer	0.03**	-0.01**	).00	-0.03**	0.00	0.01**
At least one of the parents was not born in the country	-0.02**	0.01	-0.01*	-0.01	0.02**	0.00*
Respondent's country of living (reference group – Sweden)						
Nordic Countries						
Denmark	-0.01	0.00	-0.03*	-0.02	0.04*	0.01
Finland	-0.08**	0.06**	0.04*	-0.04	0.03	-0.01
Iceland	0.05	0.02	0.03	-0.11	0.00	0.01
Norway	-0.13**	0.06**	-0.07**	0.03	0.10**	0.00
Western Europe						
Austria	-0.06**	0.01	-0.10**	-0.01	0.08**	0.08**
Belgium	-0.09**	0.02	-0.02	0.03	0.08**	-0.02
France	0.01	0.02	0.09**	-0.11**	0.01	-0.02*
Germany	-0.04**	0.04**	-0.03*	-0.09**	0.11**	0.01
United Kingdom	-0.09**	0.04*	-0.04**	0.00	0.09**	0.00
Ireland	-0.13**	0.08**	-0.08**	0.03	0.11**	-0.01
Luxembourg	-0.10*	0.04	0.02	-0.02	0.08	-0.02
Netherlands	-0.06**	0.00	-0.06**	0.09**	0.03	0.00
Switzerland	0.02	0.02	-0.03	-0.07*	0.06*	0.00
Mediterranean Europe						
Cyprus	-0.19**	0.09*	-0.11*	0.04	0.16**	0.00
Greece	-0.19**	0.04*	-0.16**	0.16**	0.15**	0.01
Israel	-0.19**	0.01	-0.18**	0.19**	0.18**	0.00
Italy	-0.18**	0.05**	-0.17**	0.06**	0.25**	-0.01
Portugal	-0.15**	-0.02	-0.15**	0.18**	0.16**	-0.02*
Spain	-0.14**	0.12**	0.04**	-0.08**	0.09**	-0.03**
Turkey	-0.22**	-0.03*	-0.19**	0.32**	0.17**	-0.05**
Post-Communist Europe						
Bulgaria	-0.19**	0.11**	-0.20**	0.06*	0.20**	0.03*
Croatia	-0.18**	0.09**	-0.15**	0.00	0.22**	0.01
Czech Republic	-0.20**	0.08**	-0.13**	0.12**	0.09**	0.04**
Estonia	-0.15**	0.06*	-0.03	0.01	0.09*	0.02
Hungary	-0.17**	0.02	-0.08**	0.07**	0.13**	0.02*
Latvia	-0.21**	0.04	-0.19**	0.08*	0.16**	0.12**
Poland	-0.19**	0.09**	-0.15**	0.04*	0.23**	-0.02*
Romania	-0.23**	0.05**	-0.24**	0.25**	0.17**	-0.01
Russia	-0.23**	0.13**	-0.20**	0.08**	0.18**	0.04**
Slovakia	-0.22**	0.13**	-0.20**	0.08**	0.21**	0.01
Slovenia	-0.13**	-0.01	-0.12**	0.11**	0.15**	0.00
Ukraine	-0.24**	0.17**	-0.18**	0.03	0.19**	0.03**
Constant	**0.26****	**0.05****	**0.15****	**0.40****	**-0.01**	**0.15****
R-square adjusted	*0.15*	*0.16*	*0.15*	*0.15*	*0.07*	*0.10*
The average absolute value of regression coefficients describing the effects of country of living on class membership	*0.14*	*0.05*	*0.10*	*0.08*	*0.12*	*0.02*
The average regression coefficient describing the effects of age on class membership	*-0.06*	*0.10*	*0.09*	*-0.15*	*0.15*	*0.12*

* coefficient is statistically significant at p<0.05.

** coefficient is statistically significant at p<0.001.

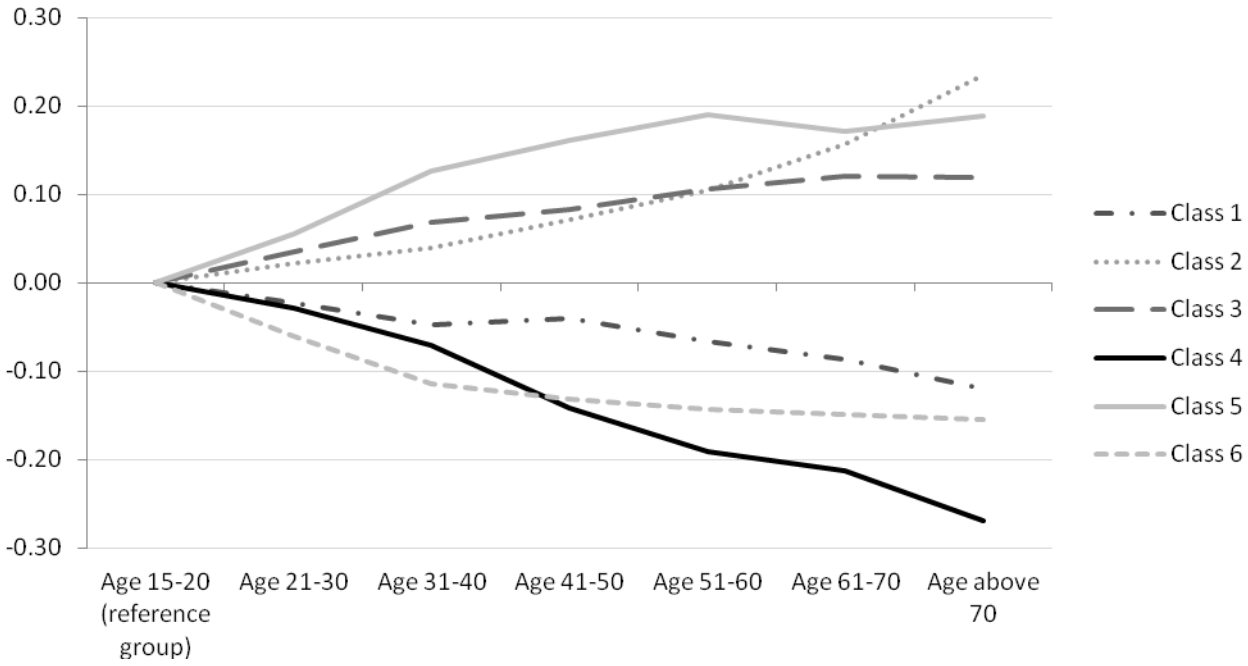

Figure 7. Regression coefficients describing the effects of respondent's age on his probability to join various value classes (reference group comprises respondents aged 15 to 20 years)

5. DISCUSSION AND CONCLUSION

Let us now summarize the main results:

1. The population of 33 European countries has been classified on the basis of their responses to 21 items of the Schwartz Portrait Values Questionnaire with latent class analysis. Such classification is a holistic mode to represent typical value syndromes as combinations of value preferences. The analysis resulted in six value classes for the pan-European population.

2. Our first hypothesis was confirmed. Indeed, value classes differ from each other both by the rank of values and by the degree of value preferences (response style). The largest absolute score of value preferences is typical for the members of class 2, the smallest for the members of class 4, and intermediate for the other four classes.

What we did not expect is that the smallest preferences are a feature of the largest class. Members of class 4 are characterized by low differentiation between their responses to various value items. They rated all the items rather similarly. This "unexpected class" demonstrated remarkable cross-country differences, with much more representation in Post-Communist and Mediterranean than in Nordic and Western European countries.

Such poorly differentiated sets of responses indicate a lower level of information processing which results from lower cognitive ability and/or lack of cognitive effort (Kahneman, 2011). Thus, we can suggest that class 4 members do not commit themselves to

answering the questionnaire carefully. This suggestion is supported by the fact that among respondents from all the classes the least amount of time to fill in the main ESS questionnaire was spent by respondents in class 4.[21] Time is an important human resource and a cost of time is not the same for different types of people (Davidov, Schmidt, and Bamberg, 2003).

The probability of belonging to class 4 is higher for younger males who have higher education, live in the big cities, and come from families of a lower socioeconomic status (their parents had no employees) as well. And we can imagine that the cost of time is higher for young educated males in large cities who can easily find other profitable alternatives for their use of the time than answering a long questionnaire with no compensation. High importance of Self-Transcendence, which is a moral value, could be a factor that might outweigh the influence of higher cost of time. However, the average member of class 4 has a lower commitment to such values compared to average members of the all other classes (with the exception of class 6).[22]

Nondifferentiation in using rating scales was described by Krosnick (1991) as a kind of satisficing strategy which refers to people's tendency to put as less amount of effort into a situation as the situation allows. "Satisficing respondents could, for example, simply select a point on the response scale that appears to be reasonable for the first object, and then rate all of the remaining objects at that point" (p. 219). Krosnick borrowed the idea of satisficing from Simon (1957), who argued that reducing effort in order to reach acceptable minimum is a common strategy for making most of everyday decisions among most of people. The fact that class 4 is the largest one confirms Simon's theory in some way.

In this sense, our conclusions about response behavior could be extrapolated to a general population and everyday behaviors – that is, in spite of making the best option, members of class 4 tend to meet a minimal requirement. We can hypothesize that a satisficing tendency concerns other forms of voluntary activity which are similar to completing a questionnaire in the sense of being unpaid and being motivated by public interest and a feeling of curiosity. In contrast to this finding, the presence of class 2 members who put both more time and effort in their response and enhance values of Self-Transcendence provides

[21] On average, the members of class 4 completed the main questionnaire in 63 minutes, the members of class 2 in 73 minutes, members of class 1 in 71 minutes, and members of classes 5 and 6 in 65 minutes. The "interview length" variable in the ESS includes the time spent for the main questionnaire only, excluding the Schwartz value questionnaire, which was a part of the supplementary questionnaire. Nonetheless, it reflects a general attitude to the task of completing the questionnaire of the members of different value classes.

[22] Gordoni and Schmidt (2010) described the factors of non-participation in the survey, and the moral norms were not a significant factor of non-participation. The focus in the current paper is a respondent's commitment to doing his/her job well *after* having agreed to participate and, in such a situation, moral norms and values could be a significant factor of thoroughness. An interesting and complicated point is that the quality of responding to the value items depends on one's values themselves.

evidence that some fractions of the European population do not show the satisficing strategy in the sense of Krosnick.

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 the Portrait Values Questionnaire. Will this "no-preference" class survive under alternative approaches to value measurement?

3. The fact that these people have a certain response style implies by no means that their value responses have no additional (i.e. substantial) meaning. There are two arguments for this. First, in case the response style is the only determinant of responses, there would be no differences between (absolute) value scores within each class. And second, response style refers to a respondent's tendency to provide low- or highly differentiated ratings and has nothing to do with the signs of value scores. Scores vary by their sign both within and between classes and this is an indicator of the substantial meaning of the value responses under consideration.

4. Our second hypothesis concerned the within-country diversity, and empirical results corroborated it. We found that all the countries studied are internally diverse in their value class composition, and each country has representatives of all six value 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 countries.

5. 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. Members of classes 1 and 3, combining a strong preference for Self-Transcendence (over Self-Enhancement) and relatively high commitment to Openness to Change, are more represented in Nordic and Western Europe than in Mediterranean and Post-Communist Europe. Classes 2, 4, and 5, on the contrary, are more represented in Mediterranean and Post-Communist Europe than in Nordic and Western countries. Class 4 is the "low-preference" class, and the specialty of the two other classes is either very strong preference for Conservation over Openness (class 2) or combination of the moderate preference for Self-Transcendence over Self-Enhancement and the moderate preference of Conservation to Openness (class 5).

Large differences between countries have been found in ratios of shares of different value classes as well.

6. Our fourth hypothesis concerned the cross-country comparison of the *formal* aspect of within-country diversity: We expected large between-country differences in levels of within-country value heterogeneity. We found that value fractionalization (high fractionalization means a uniform distribution of shares of value classes within country) is higher in more advanced European countries, that is, in Western European and Nordic countries as compared to Mediterranean and Post-Communist ones. This result is further supported by the positive and significant correlation of fractionalization and GNI per capita.

In countries with lower fractionalization, where membership in various value classes is unequal, there are salient value majorities and value minorities. In such countries, minorities are more committed to values of Openness to Change and Self-Transcendence which are typical for advanced European countries. Thus, the higher inequality of class membership in Post-Communist and Mediterranean countries might be an implication of a societal developmental process which starts with a few people who commit themselves to the Openness and Self-Transcendence values, and the share of these people increases as long as the economy and society of a country develop.

7. Our fifth hypothesis concerned determinants which define a value class membership. As expected, two main effects stem from a respondent's country of living and age.

The country effects detected through direct cross-country comparisons of class membership have stayed the same after controlling for age and other demographic and social status variables. Probabilities of membership in three value classes (classes 1, 3, or 5) are more influenced by respondent's country of living than membership in classes 2, 4, or 6 (for two of which the main predictor is age).

8. Most of the previous publications on country values presented each country by a set of national averages of several value variables (Hofstede, 2001, House, Hanges, Javidan, Dorfman, and Gupta 2004; Inglehart and Baker, 2000; Inglehart and Welzel, 2005; Magun and Rudnev, 2008, 2012; Schwartz, 2007, 2008). Instead of the averages, the holistic classification described in the current paper provides a more elaborated value portrait of each European country as an internally differentiated entity composed of different value classes. Such an approach provides new opportunities for cross-country comparisons of value class distributions which result in a more elaborated picture of between-country value similarities and differences.

Among the advantages of a person-centered classification approach is the higher predictive validity as well. Correlation coefficients of class membership in a given country

with its gross national income (GNI) per capita are higher in absolute value than similar correlations of value indices or value dimensions.

Further analytical steps should include checking the robustness of the six value class solution described in the present contribution and looking for the exact country-level characteristics which affect the value classes under consideration.

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APPENDIX

Table A.1. The mean scores and the mean absolute scores of the 21 value items for the 6 latent classes extracted (N=61,299 respondents from 33 European countries)[A]

4th level values (axes)	*3rd level values (categories)*	**2nd level values (value indices)**	**First level values (questionnaire value items)**	**A) Mean scores**						**B) Mean absolute scores**					
				Class 1	**Class 2**	**Class 3**	**Class 4**	**Class 5**	**Class 6**	**Class 1**	**Class 2**	**Class 3**	**Class 4**	**Class 5**	**Class 6**
Conservation – Openness to change	*Openness to Change*	Self-direction	Thinking up new ideas and being creative is important to him. He likes to do things in his own original way.	**0.8**$^{+}$	***-0.9***$^{-}$	0.3	0.1	-0.1	0.6	1.1	**1.3**$^{+}$	0.9	***0.7***$^{-}$	0.9	1.0
			It is important to him to make his own decisions about what he does. He likes to be free and not depend on others.	**1.1**$^{+}$	***0.1***$^{-}$	0.6	0.3	0.4	1.0	**1.3**$^{+}$	1.0	1.0	***0.7***$^{-}$	0.8	1.2
		Stimulation	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.	**0.5**$^{+}$	***-1.6***$^{-}$	-0.2	-0.0	-0.7	**0.5**$^{+}$	0.9	**1.7**$^{+}$	0.9	***0.7***$^{-}$	1.1	0.9
			He looks for adventures and likes to take risks. He wants to have an exciting life.	-0.4	***-2.4***$^{-}$	-1.8	-0.5	-2.2	**0.2**$^{+}$	1.0	**2.5**$^{+}$	1.8	***0.9***$^{-}$	2.2	1.0
		Hedonism	Having a good time is important to him. He likes to "spoil" himself.	0.5	***-1.7***$^{-}$	-0.1	0.0	-0.8	**0.8**$^{+}$	1.0	**1.8**$^{+}$	0.9	***0.6***$^{-}$	1.1	1.0
			He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	0.2	***-1.8***$^{-}$	-0.2	-0.1	-1.2	**0.7**$^{+}$	0.9	**1.9**$^{+}$	0.9	***0.7***$^{-}$	1.3	1.0
	Conservation	Security	It is important to him to live in secure surroundings. He avoids anything that might endanger his safety.	***-0.6***$^{-}$	**1.4**$^{+}$	0.6	0.2	0.8	-0.0	1.1	**1.5**$^{+}$	1.0	***0.7***$^{-}$	1.0	1.0
			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.	***-0.4***$^{-}$	**1.4**$^{+}$	0.6	0.2	0.8	0.2	1.0	**1.5**$^{+}$	1.0	***0.7***$^{-}$	1.0	0.9
		Conformity	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.	***-1.5***$^{-}$	**0.8**$^{+}$	-0.4	-0.2	-0.0	***-1.5***$^{-}$	**1.6**$^{+}$	1.2	1.1	***0.8***$^{-}$	0.9	1.7
			It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong.	-0.9	**1.3**$^{+}$	0.4	-0.0	0.4	***-1.2***$^{-}$	1.2	**1.4**$^{+}$	0.9	***0.6***$^{-}$	0.8	1.4
		Tradition	Tradition is important to him. He tries to follow the customs handed down by his religion or his family.	-0.8	**1.2**$^{+}$	0.2	-0.0	0.5	***-0.9***$^{-}$	1.1	**1.4**$^{+}$	1.0	***0.8***$^{-}$	0.9	1.9
			It is important to him to be humble and modest. He tries not to draw attention to himself.	-0.2	**1.2**$^{+}$	0.6	-0.2	0.1	***-1.7***$^{-}$	1.3	**1.4**$^{+}$	1.0	***0.7***$^{-}$	0.9	1.3

Self-Enhancement – Self-Transcendence														
Self-Enhancement	*Self-Transcendence*													
	Benevolence	It's very important to him to help the people around him. He wants to care for their well-being.	**0.9**$^{+}$	**0.9**$^{+}$	**0.9**$^{+}$	0.1	0.5	***-0.2***$^{-}$	1.0	**1.2**$^{+}$	1.1	***0.6***$^{-}$	0.8	0.8
		It is important to him to be loyal to his friends. He wants to devote himself to people close to him.	**1.2**$^{+}$	**1.2**$^{+}$	**1.2**$^{+}$	***0.3***$^{-}$	0.7	0.5	**1.3**$^{+}$	**1.3**$^{+}$	1.2	***0.6***$^{-}$	0.9	0.9
	Universalism	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.	**1.0**$^{+}$	0.8	0.8	0.0	0.3	***-0.6***$^{-}$	**1.1**$^{+}$	1.0	**1.1**$^{+}$	***0.6***$^{-}$	0.9	0.9
		He strongly believes that people should care for nature. Looking after the environment is important to him.	0.9	**1.3**$^{+}$	1.0	0.2	0.7	***-0.1***$^{-}$	1.1	**1.4**$^{+}$	1.2	***0.7***$^{-}$	0.9	1.0
		He thinks it is important that every person in the world should be treated equally. He believes everyone should have equal opportunities in life.	1.1	**1.2**$^{+}$	1.0	0.2	0.7	***-0.0***$^{-}$	1.3	**1.4**$^{+}$	1.2	***0.7***$^{-}$	0.9	1.0
	Achievement	It's important to him to show his abilities. He wants people to admire what he does.	-0.3	-1.2	***-1.3***$^{-}$	0.0	-0.0	**0.5**$^{+}$	1.0	1.4	**1.5**$^{+}$	***0.7***$^{-}$	0.8	0.9
		Being very successful is important to him. He hopes people will recognize his achievements.	-0.4	***-1.3***$^{-}$	***-1.31***$^{-}$	0.0	0.0	**0.7**$^{+}$	0.9	**1.5**$^{+}$	1.4	***0.6***$^{-}$	0.7	0.9
	Power	It is important to him to be rich. He wants to have a lot of money and expensive things.	-1.7	-1.8	***-2.0***$^{-}$	-0.5	-1.2	**0.4**$^{+}$	1.8	2.0	**2.1**$^{+}$	***0.9***$^{-}$	1.5	0.9
		It is important to him to get respect from others. He wants people to do what he says.	***-1.0***$^{-}$	0.0	***-1.0***$^{-}$	-0.1	**0.1**$^{+}$	0.1^{+}	1.2	1.2	**1.4**$^{+}$	***0.7***$^{-}$	0.9	0.9
		Average absolute scores for six classes							1.2	***Max*** ***1.5***$^{+}$	1.2	***Min*** ***0.7***$^{-}$	1.0	1.1
		Openness	0.5	-1.4	-0.2	0.0	-0.8	0.7						
		Conservation	-0.8	1.2	0.3	0.0	0.5	-0.9						
		Self-Transcendence	1.0	1.1	1.0	0.1	0.6	-0.1						
		Self-Enhancement	-0.9	-1.1	-1.5	-0.1	-0.3	0.5						
		Conservation - Openness to Change	1.2	-2.6	-0.6	0.0	-1.2	1.5						
		Self-Enhancement - Self-Transcendence	1.9	2.2	2.4	0.3	0.9	-0.5						

[A] Each item score for every respondent is centered by subtracting from its raw score the individual average for all the 21 items. Even though participants received gender-appropriate versions, items presented here are those from the male version of the questionnaire.

$^{+}$ The largest values among 6 classes

$^{-}$ The smallest values among 6 classes

Table A.2. The distribution of the population of 33 European countries among value classes, percentage of row[A]

	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%	1,819
France	24%	5%	36%	20%	13%	2%	2,073
Sweden	24%	3%	25%	33%	11%	4%	1,830
Denmark	23%	2%	23%	31%	16%	4%	1,610
Germany	20%	6%	22%	24%	22%	5%	2,751
Netherlands	19%	3%	20%	42%	13%	3%	1,778
Austria	17%	5%	14%	33%	19%	12%	2,405
Finland	16%	9%	29%	29%	14%	3%	2,195
Belgium	15%	4%	23%	38%	17%	3%	1,760
United Kingdom	15%	7%	24%	31%	19%	4%	2,352
Luxembourg	14%	8%	26%	31%	18%	3%	1,635
Norway	12%	7%	18%	38%	20%	4%	1,549
Ireland	11%	11%	17%	37%	21%	3%	1,800
Slovenia	9%	4%	12%	45%	26%	4%	1,286
Spain	8%	18%	30%	25%	18%	1%	2,576
Estonia	8%	9%	23%	34%	19%	6%	1,661
Portugal	6%	8%	8%	49%	27%	2%	2,367
Hungary	5%	7%	17%	41%	23%	7%	1,544
Croatia	5%	15%	9%	34%	33%	5%	1,484
Israel	5%	3%	5%	57%	26%	5%	2,490
Greece	4%	6%	8%	52%	25%	5%	2,072
Italy	4%	10%	8%	38%	37%	3%	1,529
Poland	4%	13%	10%	37%	33%	3%	1,619
Cyprus	4%	11%	15%	38%	28%	4%	1,215
Bulgaria	3%	17%	6%	37%	32%	6%	2,230
Czech Republic	3%	11%	14%	46%	19%	7%	2,018
Latvia	3%	7%	7%	41%	27%	16%	1,980
Russia	2%	17%	4%	41%	29%	7%	2,512
Ukraine	1%	21%	6%	36%	30%	6%	1,845
Turkey	1%	3%	2%	67%	26%	1%	2,416
Romania	1%	7%	1%	59%	28%	4%	2,146
Slovakia	1%	20%	6%	36%	35%	3%	1,810
TOTAL	**10%**	**9%**	**15%**	**38%**	**23%**	**5%**	**62,936**

[A] Rows in the table are sorted by the percentage of class 1.

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