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EUROPE

The Relationship between Social Capital and  
Individualism–Collectivism in Europe

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### Abstract

The aim of the present study was to examine the relationship between social capital and individualism–collectivism in a sample of 50,417 individuals from 29 European countries using data from the European Social Survey Round 6 (2012). Social capital was measured in terms of generalized social trust and informal social networks; individualism–collectivism was operationalized via Schwartz’s Openness to Change–Conservation value dimension. Results from a hierarchical linear modeling analysis showed that less than 10 per cent of variance in social capital indicators was found between countries, meaning that the level of social capital varies more substantively between individuals than between the countries. Openness to Change had a weak but statistically significant and positive relationship both with the indices of Generalized Social Trust and Informal Social Networks, which remained significant even when individual age, gender, education level, and domicile were controlled for. In sum, our findings show that the positive relationship between social capital and individualism that has been found at the cultural level also holds at the individual level: people who emphasize independent thought, action, and readiness to change are also more willing to believe that most people can be trusted and are more engaged in informal social networks. The relationship is, nevertheless, very weak and the strength of the association varies significantly across different European countries. This variation, however, cannot be explained by country differences in level of democracy or human development and the country’s wealth moderates only the individual level relationship between Openness to Change and Informal Social Networks. Our findings suggest that sources of social capital at the individual level can be found in people’s immediate social surroundings, as well as their everyday social interactions.

**Keywords:** social capital, generalized social trust, informal social networks, individualism–collectivism, Openness to Change–Conservation, multilevel analysis, European Social Survey

### **The Relationship between Social Capital and Individualism–Collectivism in Europe**

Social capital is a multifaceted phenomenon which can be studied at both the individual and group (including national and regional) levels (Engbers, Thompson, & Slaper, 2015). Indeed, social capital is not just personally experienced by those who benefit from it (Coleman, 1988), but is, rather, ‘simultaneously a private good and a public good’ (Putnam, 2002, p. 7). Social capital has been shown to be associated with many positive outcomes at both levels. At the country and community level, for instance, social capital has a positive effect on economic performance (Neira, Portela, & Vieira, 2010), innovation (Kaasa, 2009), and health (von dem Knesebeck, Dragano, & Siegrist, 2005). Higher levels of social capital at the country level are also related to lower suicide rates (Kelly, Davoren, Mhaolain, Breen, & Casey, 2009), less crime (Akcomak & ter Weel, 2011), higher rates of education (Coleman, 1988), and political participation (Lippl, 2007), as well as to better and more effective government (Zmerli & Newton, 2008). Paralleling culture-level findings, individuals possessing more social capital tend to be healthier (e.g. Poortinga, 2006), happier (e.g. Arts & Halman, 2004), and more satisfied with their lives (Hooghe & Vanhoutte, 2011), as well as find better jobs more easily (Ruiter & De Graaf, 2008).

In this paper, we are interested in the association between social capital and individualism–collectivism both at the individual and country level. Previous research has shown that people in countries that emphasize individualistic goals are also more likely to trust other people and be more engaged in different social networks (Allik & Realo, 2004; Realo, Allik, & Greenfield, 2008; Realo & Allik, 2009). The corresponding relationship at the individual level, however, has so far received less attention. There are only a handful of studies that have examined the relationship either within a single country (Beilmann & Realo, 2012) or in a small number of countries with relatively small samples (Beilmann, Mayer, Kasearu, & Realo, 2014), casting doubt over the generalizability of those findings. The most

comprehensive study so far was conducted by Gheorghiu, Vignoles, and Smith (2009), who examined the relationship between individualism–collectivism and generalized social trust (as a core dimension of social capital) across 31 European nations using data from Rounds 2 (2004–2005) and 3 (2006–2008) of the European Social Survey (ESS). However, their study did not include any other aspects of social capital apart from generalized social trust, while we take into account the social network aspect of social capital as well. Thus, the current study builds upon Gheorghiu and colleagues' (2009) research by examining the association between individualism–collectivism and two indicators of social capital – generalized social trust and informal social networks – using nationally representative samples from the 29 European countries which participated in Round 6 (2012) of the ESS. The multilevel nature of the ESS data (individuals nested within countries) allows us to examine not only the individual-level relationship between social capital and individualism–collectivism, but also whether there are differences between countries in the strength of the relationship.

### **What is Social Capital?**

The term social capital refers to social connections among individuals, their social networks, and the norms of reciprocity and trustworthiness that keep those relationships going (Putnam, 2000). According to Putnam (2002), it makes sense to describe social networks and the associated norms of reciprocity jointly as social capital, because, just like other forms of capital (e.g., physical and human capital), social networks create value for individuals and the collectives to which they belong. It has been suggested that social capital is a resource which may make other resources available to an individual (Adler & Kwon, 2002), and that social capital may actually be more important for human well-being than material goods (Putnam, 2002).

The problem is that social capital, like other forms of capital, tends to be unequally distributed (Wuthnow, 2002). That means that social capital may function in an exclusionary

way, causing exclusion rather than inclusion. Indeed, research has shown that social capital may significantly differ by individual, group, and country (Lin, 2000; Lin & Erickson, 2008; Meulemann, 2008a, 2008b; Neller, 2008; Putnam, 2002; Schmitt-Beck, 2008; van der Meer, Scheepers, & Grotenhuis, 2008).

There is agreement that social capital at the individual level is influenced by a very wide range of socioeconomic and contextual factors (Halpern, 2005; Lin, 2000; Lin & Erickson, 2008; Putnam, 2000 & 2002; Rothstein, 2002; van der Meer et al., 2008). Inequality in social capital contributes to social inequality and lack of it may have serious consequences for level of socioeconomic achievement and quality of life (Lin, 2000). It has been also recognized that it is very difficult to create social capital in places where it does not exist, since anyone who tries to cooperate in a society lacking social capital will simply be exploited (Whiteley, 2000).

### **Operationalizing and Measuring Social Capital**

There have been warnings about the looming danger of the concept of social capital becoming a 'handy catch-all, for-all, and cure-all sociological term' (Lin & Erickson, 2008; p 235), as it means so many different things to so many people (Engbers, Thompson, & Slaper, 2015; Meulemann, 2008a). Guillen and colleagues (2011) have raised concerns about the unclear definition and measurement of social capital. Portes and Vickstrom (2011) have suggested that the concept has problems with endogeneity and spuriousness, but they remain hopeful in that they believe these issues can be overcome with more rigorous approaches to theory and measurement. Some more skeptical and less hopeful scholars have characterized the concept of social capital as an umbrella concept (Hirsch & Levin, 1999), a wonderfully elastic term (Lappe & Du Bois, 1997), and a notion that has taken on a circus-tent quality (De Souza Briggs, 1997). Thus, there is no consensus on the definition of social capital and different scholars use different items to construct their social capital indexes (Lin & Erickson, 2008; Schmitt-Beck, 2008).

Moreover, social capital appears to be a multifaceted phenomenon that cannot be captured by any one single measure (Halman & Luijkx, 2006). However, it may even be more complex than this – social capital has been shown to have different dimensions that do not manifest a uniform effect on the same phenomena, be they innovation (Kaasa, 2009) or nonprofit sector growth (Saxton & Benson, 2005), for example. Earlier research has also shown that the relationship between the different dimensions of social capital and other social phenomena may vary across social groups (Kroll, 2011). Thus, it is important to distinguish between the various dimensions of social capital, as was shown by Guillen and colleagues (2011). They found that informal and formal participation, for example, related rather differently to other variables (e.g., age, education, political action, happiness), and that there was hardly any relationship between either formal or informal participation and other important components of the social capital construct, such as social and political trust. In sum, Guillen and colleagues (2011) suggest that participation and trust should be considered as essential components or formative indicators of social capital.

Generalized social trust is frequently seen as a key element of social capital (Putnam, 2000 & 2002; Schmitt-Beck, 2008; Whiteley, 2000). Delhey and Newton (2005) define trust ‘as the belief that others will not deliberately or knowingly do us harm, if they can avoid it, and will look after our interests, if this is possible’ (p. 311). Unlike particularized or personalized trust, which is often limited to the nuclear family or one’s ethnic group, generalized trust refers to trust in a range of society’s members, including neighbors, fellow citizens, strangers, and acquaintances (Realo et al., 2008). Studies show that generalized social trust is unevenly distributed, not only globally, but also across regions, such as Europe. The level of generalized social trust is highest in Nordic countries (Norway, Denmark, Sweden, Finland, and Iceland), followed by the Netherlands, and English and German

speaking countries. ‘Low trust’ societies are those in southern and eastern parts of Europe (Beilmann & Lilleoja, 2015; Delhey & Newton, 2005; Neller, 2008).

Another central premise of social capital, as noted, relates to social networks among people and the norms of reciprocity in those networks. Social participation may be characterized in terms of quantity (i.e., frequency of contact) and quality (i.e., content) of contact (van der Meer et al., 2008) and different items have been used to measure these features of networks, including questions about the frequency of meeting socially with friends, relatives, and colleagues (Meulemann, 2008b; Schmitt-Beck, 2008; van der Meer et al., 2008); the level of help provided to others (Schmitt-Beck, 2008; van der Meer et al., 2008); (not) having someone to have intimate discussions with (van der Meer et al., 2008); degree of participation in social activities (Meulemann, 2008b); and membership in voluntary organizations (Schmitt-Beck, 2008). It has been claimed that the focus on participation in formal networks (i.e., civic participation) is overemphasized in social capital research, and that more attention to participation in informal networks (i.e., social participation) is needed (van der Meer et al., 2008) because direct participation in the informal social networks of everyday life is more important in generating social capital than involvement in formally organized voluntary associations (Yamagishi & Yamagishi, 1993). Van der Meer and colleagues (2008) found considerable differences across countries in the level of social contact between people as well as in the amount of help provided to others. German-speaking countries were all at the high end of the spectrum of providing help, whereas southern European countries like Italy, Spain, and Portugal were at the low end.

### **Individualism-Collectivism**

Similarly to social capital, individualism–collectivism has been one of the catchphrases in cross-cultural research during the last two to three decades (see Oyserman & Lee, 2008 for a review). According to Hofstede (1991), ‘individualism pertains to societies in which the ties



between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family' (p. 51). Collectivism, on the other hand, 'pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty' (p. 51). Since Hofstede's monumental study (1980), which established individualism–collectivism as one of the most important dimensions of cultural variation, the construct has undergone several modifications. First of all, in addition to being used to describe the characteristics of a culture, individualism and collectivism are also considered personality features on which a person differs from other members of the same cultural group (Realo, 2003). Many researchers argue that cultural and individual values should be regarded as conceptually and methodologically different (e.g., Hofstede, 2004; Smith & Schwartz, 1997; Trommsdorff et al., 2004). Though the individualism–collectivism construct can be used for multilevel analyses, one should always keep in mind that individual values do not necessarily aggregate into those of groups and societies (Dakhli, 2009; Trommsdorff et al., 2004). Secondly, individualism and collectivism are not always conceptualized as two opposite poles of a unidimensional factor as Hofstede (1980) contends, but also as two relatively independent factors, especially at the individual level (Realo, Koido, Ceulemans, & Allik, 2002; Trommsdorff et al., 2004). Finally, individualism and collectivism are neither monolithic nor unitary, but are rather multifaceted constructs with different subforms that manifest themselves mostly in one specific area of social relations or in relations with a particular target group (see Realo et al., 2002 for a review).

Schwartz's value dimension of Openness to Change versus Conservation is often used to measure individualism–collectivism at the individual level (e.g., Oishi, Schimmack, Diener, & Suh, 1998; Realo, Allik, & Vadi, 1997; Realo et al., 2002). Schwartz (1994) examined the relationship between his dimension of Openness to Change versus Conservation and

Hofstede's individualism dimension and demonstrated that individualism is positively correlated with valuing affective autonomy (appreciation of varied and fun life) and intellectual autonomy (curiosity) and negatively correlated with conservatism. Thus, Schwartz's Openness to Change vs. Conservation dimension that contrasts novelty and expression of intellectual, behavioral, and emotional autonomy with communally tied preferences for self-restriction and order is an equivalent of Hofstede's individualism-collectivism dimension (Schwartz, 1994). At the cultural level, Schwartz (2004b) has also agreed that his autonomy-embeddedness dimension (a culture-level counterpart to his individual-level Openness to Change vs. Conservation dimension) overlaps conceptually with Hofstede's individualism-collectivism to some degree, as 'both concern relations between the individual and the collective and both contrast an autonomous with an interdependent view of people' (p. 51). Therefore, in the current study, individualism-collectivism is operationalized via Schwartz's Openness to Change-Conservation value dimension.

### **Individualism-Collectivism and Social Capital**

The fear that growing individualism inevitably leads to a weakening in social capital and of civil society probably has a lot to do with the fact that individualism is often seen in very dark shades, as something amoral, and the more positive features of individualism (like taking responsibility for your own actions) are overlooked. According to Woolcock (1998) "amoral individualism' exists where there is neither familial nor generalized trust, where narrow self-interest literally permeates all social and economic activity, and where members are isolated – either by circumstance or discrimination – from all forms of cohesive social networks. It is thus characterized by the absence of both integration and linkage' (pp. 170-171). Put like this, individualism indeed seems to be detrimental for social capital.

However, there are also very different interpretations of individualism. Rothstein (2002) advocates the idea that an individualistically minded person does not necessarily have to be an

egoistic one. The author has adopted the term ‘solidaristic individualism’ to describe the value orientations of individuals who are supportive towards others but also accept that these other individuals have different values and engage in different causes. Realo et al. (2002) also argue that one of the essential components of individualism is mature self-responsibility, suggesting that the potential for both individualism and altruism may be present in the one person.

Indeed, despite a widely-held belief to the contrary, a strong positive association between individualism and social capital has been observed at both the country- and state-level of analysis (Realo & Allik, 2009). Countries and U.S. states with higher levels of social capital (where people believe that most people can be trusted and are more engaged in different formal and informal networks) were also found to be more individualistic, emphasizing the importance of independence, personal accomplishments, and freedom to choose one’s own goals (Allik & Realo, 2004; Realo et al., 2008).

The relationship between individualism–collectivism and social capital has also been examined at the individual level, but, so far, with inconclusive findings. Kimmelmeier and colleagues (2006), for instance, found both formal and informal volunteering (which could be seen as indicators of social capital) to be more closely associated with individualism than collectivism. Finkelstein (2010), however, explored the relationship between individualism–collectivism and volunteering and found that collectivism was more strongly related to altruistic motivations and the desire to strengthen social ties than individualism. Gheorghiu and colleagues (2009) demonstrated that, across 31 European nations, individualism (operationalized via two of Schwartz’s value dimensions) is more likely to foster generalized social trust among people than collectivism. However, using a large representative sample of Estonians, Beilman and Realo (2012) showed that only one component of individualism – mature self-responsibility – was positively correlated with an index of social capital. At the same time, two subfacets of individualism (i.e., autonomy and uniqueness) displayed

significant negative associations, and two components of collectivism (i.e., companionship and patriotism) positive associations, with social capital. Finally, in a comparative study of three countries—Estonia, Germany, and Russia—Beilmann and colleagues (2014) found that, in all three countries, collectivistic values predicted parental social capital, whereas individualistic values predicted peer-group social capital. Thus, although the positive relationship between individualism and social capital seems to hold in some respects at the individual level, the relationship between social capital and the different components of individualism-collectivism appears to be rather multifaceted, partly due to the fact that the various studies have used different indexes of both social capital and individualism-collectivism.

### **The Aim of the Present Study**

The aim of the present study was to examine the relationship between social capital and individualism-collectivism in a sample of 54,673 individuals from 29 European countries, using data from the ESS Round 6 (2012). Based on previous research, indexes of generalized social trust and informal social networks were used to measure social capital, whereas individualism-collectivism was operationalized via Schwartz's Openness to Change-Conservation value dimension. Jagodzinski (2004) considers it one of the biggest shortcomings of modern values research that scholars focus on either the macro or the micro level and that they analyze both levels separately, despite the existence of multilevel relationships and modern statistical programs which would permit adequate analysis of these relationships. Therefore, we use a multilevel design (individuals nested within countries) in this paper that allows us to examine, not only the individual-level relationship between social capital and individualism-collectivism, but also whether there are differences between countries in the strength of the relationship. We are aware that, when two variables are strongly related at the cultural level, it does not automatically mean that the same mechanisms

operate at the individual level (cf. Mõttus, Allik, & Realo, 2010), yet, due to the theoretical considerations noted above, we expect social capital (i.e., generalized social trust and informal social networks) to be positively related to individualism (i.e., Openness to Change) at the individual level in the same way the two constructs have repeatedly been shown to be associated at the cultural-level (Allik & Realo, 2004; Realo et al., 2008). In other words, we expect people who emphasize independence of thought, action, and feeling and readiness for change (in contrast to people who emphasize order, self-restriction, preservation of the past, and resistance to change) to be more willing to trust people beyond their nuclear family and kinship group, as well as to have more active and supportive informal social networks.

It is known from previous research that, at the societal level, both social capital and individualism are strongly positively associated with national wealth, political liberty, people's health status, and education (e.g., Hofstede, 2001; Neira et al., 2010; Uslaner, 2002; von dem Knesebeck et al., 2005; Whiteley, 2000; Zmerli & Newton, 2008). Gheorghiu and colleagues (2009) used a multilevel approach and identified a significant and positive relationship between individualism–collectivism and generalized social trust across 31 European nations. Their analysis demonstrated that the relationship between individualism–collectivism and generalized social trust is actually a cultural phenomenon which is influenced by a country's history (e.g., experience of communist regime), and that individual differences in individualism–collectivism in fact play a minor role. Thus, if there is indeed a relationship between social capital and Openness to Change–Conservation at the individual level and this differs across European nations, we aim to examine whether any of those societal characteristics shape or moderate this relationship. The economic development of the various countries will be assessed by gross domestic product (GDP) per capita, social development in terms of health and education will be measured by the Human Development

Index (HDI), and the level of democracy gauged by the Economist Intelligence Unit's democracy index.

### **Method**

The European Social Survey (ESS; [www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)) is an academically-driven social survey that maps long-term attitudinal and behavioral changes in over 20 European countries that has been carried out every 2 years since 2002. The project is directed by the Central Coordinating Team at the Centre for Comparative Social Surveys, City University, London. The ESS provides comparable data for nationally representative samples collected to the highest methodological standards across countries and the data are freely available.

We analyzed data from ESS Round 6, collected from 54,673 respondents in 29 European countries in 2012 (ESS Round 6, 2012). Sample sizes varied from 752 (Iceland) to 2,958 (Germany) individuals per country (see Table 1 for sample characteristics by country). The survey was representative of all persons aged 16 and over (no upper age limit) resident in private households in all participating countries, regardless of nationality, citizenship, or language. Samples were selected by strict random probability methods at every stage and respondents were interviewed face-to-face. Complete answers on social capital and individualism–collectivism measures were available for 50,417 respondents. Participants were 54% females and had a mean age of 48 years ( $SD = 18$ ). On average, respondents had completed 12.5 years of full-time education ( $SD = 4.04$ ). Twenty-three per cent of respondents lived in the downtown area of a large city, 11% in the suburbs or outskirts of a large city, 30% in town or small city, 31% in a country village, and 5% on a farm or in a home in the countryside.

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### Individual-Level Measures

*Social capital.* As argued above, we aimed to capture both core aspects of the concept: generalized social trust and informal social networks. Following research by Beilmann and Lilleoja (2015), Kelly et al. (2009), Poortinga (2006), von dem Knesebeck et al. (2005), and Zmerli and Newton (2008), the Generalized Social Trust index comprised three variables:

(1) Generalized trust: ‘Would you say that most people can be trusted, or that you can’t be too careful in dealing with people?’ (A3: 0 = *You can't be too careful* – 10 = *Most people can be trusted*);

(2) Fairness: ‘Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?’ (A4: 0 = *Most people would try to take advantage of me* – 10 = *Most people would try to be fair*); and

(3) Helpfulness: ‘Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?’ (A5: 0 = *People mostly look out for themselves* – 10 = *People mostly try to be helpful*).

The Generalized Social Trust index was computed as the sum of the three items. The overall standardized alpha of the 3-item measure was .77, with an average inter-item correlation of .53. The mean scores and Cronbach alphas of the Generalized Social Trust index are shown in Table 1. We used structural equation modeling to test the measurement invariance (MI) of the Generalized Social Trust Index across countries. We set up a structural equation model where the items of generalized trust, fairness, and helpfulness were used as observed indicators for the latent variable Generalized Social Trust Index. The MI analysis showed that scalar measurement invariance criteria were met across countries,  $\chi^2 = 355.85$  ( $df = 56$ ), RMSEA = .055; CFI = .992.

The *Informal Social Networks* was measured with a single question ‘How often do you meet socially with friends, relatives or work colleagues?’ (C2: 1 = *Never* – 7 = *Every day*) as

there were no other relevant items in the ESS that could be used to form a coherent index of informal social networks.

In a majority of countries, there was a small but statistically significant positive correlation between the two social capital indices (Table 1). The only exceptions are Kosovo and Portugal, where we found insignificant negative correlation between the two indices.

*Individualism–Collectivism.* As noted above, we use Schwartz’s Openness to Change–Conservation value dimension, measured with the PVQ21, as a proxy for individualism–collectivism. The PVQ21 is derived from the 40-item Portrait Values Questionnaire (Schwartz et al., 2001), for use when space or time limitations require a sizeable reduction in the number of items. The PVQ21 includes short verbal portraits of 21 different people in terms of the goals and aspirations important to them (Schwartz, 2007). Respondents report how similar each of the people portrayed is to themselves (see Appendix 1 for the list of items). Similarity judgments are made on a 6-point numerical scale ranging from 1 (*very much like me*) to 6 (*not like me at all*). The PVQ21 has demonstrated configural and metric invariance, allowing researchers to study the relationships among values and other variables across countries (Davidov et al., 2008).

All respondents who had six or more missing values on the human values module, were eliminated from the analysis, as suggested by Schwartz et al. (2012).<sup>1</sup> The remainder of the missing values was imputed using the Multiple Imputation (Predictive Mean Matching) procedure in SPSS 20. To avoid the possibility that differing response tendencies across countries would affect the results, the analysis was conducted with ipsatized data: for each participant, we subtracted the average of the items from each item, thereby removing differences in scale use.

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<sup>1</sup> According to Schwartz (2012), it is reasonable to impute the missing values for the respondents who have up to five missing values in PVQ21 when using higher order values and cultural dimensions (e.g. openness to change vs. conservation) in research.



In order to obtain the scores for the Openness to Change–Conservation value dimension, we conducted a confirmatory factor analysis on the ipsatized data. Based on Schwartz’s theory (Schwartz, 2004a) and prior findings (e.g., Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009), we ordered a two-dimensional value structure. The first factor corresponds to Schwartz’s Openness to Change–Conservation dimension, with the Self-Direction and Stimulation values having negative loadings, and the Tradition and Security values having positive loadings. The second factor corresponds to Schwartz’s Self-Enhancement–Self-Transcendence values dimension, with Power and Achievement having negative loadings, and Universalism and Benevolence having positive loadings. We used Schwartz’s Openness to Change–Conservation dimension factor scores as a proxy for individualism–collectivism, with negative scores indicating higher Openness (i.e., individualism) and positive scores higher Conservation (i.e., collectivism).

At the individual level of analysis, post-stratification weight (including design weight) adjustments were applied.

### **Culture-Level Measures**

*Human Development Index (HDI)*. HDI scores were provided in the ESS multilevel dataset. We used the HDI scores for 2012 (Table 1), as this reflects the time period in which the ESS Round 6 data collection occurred (2012). A higher HDI score indicates higher human development, and a lower score a lower level of human development, of a given country. Most of the countries in the study have very high human development, except for the Russian Federation, Bulgaria, the Ukraine, and Albania. Norway has the highest HDI ranking across the 27 ESS countries, as well as globally.

*GDP per capita (GDP)*. GDP data were provided in the ESS multilevel dataset. We used GDP per capita at 2012 market prices (Table 1), reflecting the time period of the ESS Round

6 data collection (2012). Among the countries in the study, Norway, Switzerland, and Denmark have the highest GDP per capita, and Kosovo, the Ukraine, and Albania the lowest.

*Democracy Index.* Scores were received from The Economist Intelligence Unit's homepage. Again, we used scores from 2012 (Table 1). A higher number indicates fuller democracy; the smaller the number, the more incomplete the democracy is in a given country. According to the categorization provided by The Economist Intelligence Unit, some of the countries in the study are full democracies (Norway, Sweden, Iceland, Denmark, Switzerland, Finland, the Netherlands, Ireland, Germany, United Kingdom, Czech Republic, Belgium, and Spain), some are flawed democracies (Portugal, France, Slovenia, Italy, Estonia, Israel, Slovakia, Cyprus, Lithuania, Poland, Hungary, and Bulgaria), two are hybrid regimes (the Ukraine and Albania), and one is an authoritarian regime (Russian Federation).

The three country-level variables were all highly correlated with each other:  $r_s = .79$  (GDP and Democracy Index),  $.83$  (HDI and GDP), and  $.85$  (HDI and Democracy Index), all significant at  $p = .0001$ .

## Results

In order to analyze cross-national variation in the relationship between social capital and Openness to Change–Conservation, we used hierarchical linear modelling (HLM 6.02; Raudenbush & Bryk, 2002). Analyses were conducted at two levels – individuals (Level 1) nested within 29 countries (Level 2). Analyses for the indicators of social capital (i.e., Informal Social Networks and General Social Trust) were conducted separately, by adding them into subsequent HLM models as outcome variables<sup>2</sup>. For both of these variables, we first calculated the intra-class correlation coefficients (ICC; Raudenbush & Bryk, 2002, p. 24) on basis of the simplest (unconditional) models without any predictors (i.e., Model 0). The ICC measures the proportion of variance in the outcome that is between Level-2 units. Thereafter,

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<sup>2</sup> However, as the data was cross-sectional, no causal inferences can be made.

we added individual level control variables (gender, age, education level, and domicile) as predictors of Informal Social Networks/General Social Trust to Level-1 of the models (i.e., Model 1). Next, Openness to Change–Conservation was added as a predictor into the models in addition to the statistically significant control variables from previous analyses (i.e., Model 2). And finally, country-level moderators (GDP, HDI, and Democracy Index) were added separately to Level 2 of the models (i.e., Models 3, 4, and 5, respectively). Thus, the final models were as follows:

$$\text{Level-1: Informal Social Networks / General Social Trust} = \beta_{0i} + \beta_{1j} (\text{Control Variable(s)}) + \beta_{2j} (\text{Openness to Change–Conservation}) + r_{ij}$$

$$\text{Level-2: } \beta_0 = \gamma_{00} + \gamma_{01} (\text{HDI/GDP/Democracy Index}) + u_0$$

$$\beta_1 = \gamma_{10} + u_1$$

$$\beta_2 = \gamma_{20} + \gamma_{21} (\text{HDI/GDP/Democracy Index}) + u_2$$

Here, Openness to Change–Conservation and Control Variable refer to Level 1 predictors,  $\beta_{0j}$  refers to the intercept of Informal Social Networks/General Social Trust in group  $j$  (Level 2),  $\beta_{1j}$  and  $\beta_{2j}$  are the slopes of the relationships between Informal Social Networks/General Social Trust and its Level 1 predictors in group  $j$ , and  $r_{ij}$  refers to the random errors of prediction for the Level 1 equation. At Level 2,  $\gamma_{20}$  refers to the overall regression coefficient, or the Informal Social Networks/General Social Trust—Openness to Change–Conservation slope,  $\gamma_{21}$  is the relationship or interaction between the country-level moderator (GDP, HDI, or Democracy Index) and the Informal Social Networks/General Social Trust—Openness to Change–Conservation slope, and  $u_{2j}$  refers to the error component for the slope. All predictors were added into Level 1 of the models group-mean centered, whereas all Level 2 moderators were added grand-mean centered. At Level 1 of the models, post-stratification weight (including design weight) was applied, and at Level 2 population weight was applied. First the

findings concerning Informal Social Networks will be presented, followed by the results of General Social Trust.

**Informal Social Networks and Openness to Change–Conservation.** Our results from the unconditional models indicated that most of the variance in the Informal Social Networks (93.5%) lies within countries, whereas 6.5% of variance is between countries. In previous studies it has been argued that the hierarchical data structure should not be ignored if the proportion of Level-2 variance is 5% or more (e.g., Ringdal, 2013). Therefore, we continue with examining the association of Informal Social Networks to Openness to Change–Conservation using multilevel analysis.

Adding control variables as individual-level predictors of Informal Social Networks (i.e., Model 1) explained about 3.56% of variance in Informal Social Networks at the individual level (see Raudenbush & Bryk, 2002, p. 79, for the formula). But only age was significantly associated to Informal Social Networks,  $\beta = -0.01$  ( $SE = 0.01$ ,  $t = -3.81$ ,  $df = 28$ ,  $p = .001$ ). Therefore, gender, education level, and domicile were excluded in Model 2, whereas age was retained. Findings from Model 2 (Table 2) indicated that about 2.61% of the individual-level variance in Informal Social Networks is additionally explained by Openness to Change–Conservation, compared to the model with only socio-demographic control variables. The unstandardized coefficient of the Openness to Change–Conservation slope was significant and negative,  $\beta = -0.28$  ( $SE = 0.03$ ,  $t = -9.58$ ,  $df = 28$ ,  $p < .001$ ), meaning that people with more social meetings were also more open to change or more individualistic.

In order to find out, whether the association of Informal Social Networks and General Social Trust to Openness to Change–Conservation significantly varies across countries, the  $\chi^2$  test for the variance in slope was calculated, which indicates whether the variance in the pooled slope departs significantly from zero. It was found that the relationship between Informal Social Networks and Openness to Change–Conservation was indeed significantly

different across countries ( $SD = 0.09$ , variance component = 0.01,  $df = 28$ ,  $\chi^2 = 193.11$ ,  $p < .001$ ). Therefore, we proceeded with analyzing the potential country-level moderators of this relationship by adding the HDI, GDP, and the Democracy Index into Level 2 of the model. Due to multicollinearity-related issues, all country-level variables were entered separately into different models. Results showed that the individual-level relationship between Informal Social Networks and Openness to Change–Conservation was statistically significantly moderated by the countries' GDP ( $\gamma = 0.035$ ,  $SE = 0.015$ ,  $t = 2.28$ ,  $df = 27$ ,  $p = .031$ ), meaning that the negative association between Informal Social Networks and Openness to Change–Conservation is somewhat stronger in countries with lower GDP. The moderating effects of countries' HDI and the Democracy index were not significant (see Models 3, 4 and 5 in Table 2).

**General Social Trust and Openness to Change–Conservation.** In case of General Social Trust, the proportions of within- and between country variances were 91.0% and 9.0%, respectively. Therefore, it was again necessary to proceed with multilevel analyses. After adding control variables as individual-level predictors of General Social Trust, it was seen that these explained about 1.05% of variance in General Social Trust at the individual level. Out of all the control variables only participants' education level was found to be significantly associated to General Social Trust,  $\beta = 0.02$  ( $SE = 0.00$ ,  $t = 4.42$ ,  $df = 28$ ,  $p < .001$ ). Therefore, gender, age, and domicile were excluded from Model 2, whereas education level was retained. The results from Model 2 (Table 3) showed that Openness to Change–Conservation did not explain any additional individual-level variance in General Social Trust, compared to the model with only socio-demographic control variables. However, the unstandardized coefficient of the Openness to Change–Conservation slope was nevertheless significant,  $\beta = -0.13$  ( $SE = 0.05$ ,  $t = -2.75$ ,  $df = 28$ ,  $p < .01$ ), meaning that people with higher levels of social trust were also slightly more open to change. As the association between General Social Trust

and Openness to Change–Conservation was significantly different across countries ( $SD = 0.12$ , variance component = 0.01,  $df = 28$ ,  $\chi^2 = 165.40$ ,  $p < .001$ ), we again proceeded with analyzing the potential country-level moderators of this relationship. However, our findings indicated that the individual-level relationship between General Social Trust and Openness to Change–Conservation was not moderated by the countries' HDI, GDP, or the Democracy index (see Models 3, 4 and 5 in Table 3).<sup>3</sup>

### Discussion

Social capital has been shown to be an extremely useful resource, at both the individual and country levels (see Halpern, 2005 for a review). However, social capital tends to be unequally distributed between individuals, groups, and countries (Lin, 2000; Lin & Erickson, 2008; Meulemann, 2008a; Putnam, 2002; Wuthnow, 2002). That, of course, raises the question of what are the sources and determinants of social capital at the individual as well as group levels which could explain these inequalities.

A strong positive association between individualism and social capital has been observed at the cross-national level in previous research (Realo & Allik, 2009), and, therefore, it is also one of the possible determinants of social capital at the individual level. The relationship between individualism–collectivism and social capital at the individual level has also been found to be positive (Gheorghiu et al., 2009), but weaker and rather multi-faceted (Beilmann

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<sup>3</sup> In order to attest our results, we produced a summary model for both indicators of social capital (i.e., Informal Social Networks and General Social Trust). This model included all variables from two previous separate HLM models (i.e., at Level 1 the predictor variables was Openness to Change–Conservation together with control variables gender, age, education level and domicile, and at Level 2 the moderators of the Level-1 association between social capital indicators and Openness to Change–Conservation were countries' HDI, GDP, and the Democracy Index). The results of these two models showed that, at the individual level, the variable Informal Social Networks was statistically significantly associated with Openness to Change–Conservation,  $\beta = -0.27$  ( $SE = 0.03$ ,  $t = -8.63$ ,  $df = 25$ ,  $p < .001$ ), and with the control variable age. General social trust was also significantly related to Openness to Change–Conservation,  $\beta = -0.13$  ( $SE = 0.05$ ,  $t = -2.44$ ,  $df = 25$ ,  $p < .05$ ), and to control variables education and age. At the country level, both the association between Informal Social Networks and Openness to Change–Conservation, as well as the association between General Social Trust and Openness to Change–Conservation was moderated by the Democracy Index ( $\gamma = 0.04$ ,  $SE = 0.02$ ,  $t = 2.28$ ,  $p < 0.05$ , and  $\gamma = 0.05$ ,  $SE = 0.01$ ,  $t = 4.21$ ,  $p < 0.001$ , respectively). Thus, it appears that the individual-level associations between the two social capital indicators and Openness to Change–Conservation were in the same magnitude as was found using two separate models, but there were some changes in statistically significant country-level moderator effects. However, it is not advisable to use all three country-level indicators in one model because of multicollinearity issues.

et al., 2014; Beilmann & Realo, 2012). Our analyses using the ESS Round 6 data from 29 countries show that there is indeed a statistically significant and positive relationship between individualism (operationalized by the Openness to Change–Conservation value dimension) and social capital (measured by the indices of Generalized Social Trust and Informal Social Networks) at the individual level that remains significant even when individual age, gender, education level, and domicile are controlled for. Thus, our findings show that the positive relationship between social capital and individualism that has been found at the cultural level (see Allik & Realo, 2004; Realo et al., 2008) also holds at the individual level: people who emphasize independent thought, action, and readiness to change are not only more willing to believe that most people can be trusted and are honest (cf. Gheorghiu et al., 2009), but are also more involved in informal social networks. The relationship is, nevertheless, very weak, with Openness to Change–Conservation and sociodemographic variables (i.e., age, gender, education, and domicile) explaining about 1 per cent of the individual-level variance in Generalized Social Trust and less than 4 per cent of the individual-level variance in Informal Social Networks. Thus, although previous research (Halpern, 2005; Lin, 2000; Lin & Erickson, 2008; Meulemann, 2008a; Putnam, 2000 & 2002) has shown that age, gender, education, and settlement type all influence social capital accumulation at the individual level, our findings suggest that there is something else that explains individual differences in the degree of social capital at the individual level.

If the ‘usual suspects’ for social capital indicators do not explain the individual level variation in generalized social trust, what could an alternative explanation for the individual level differences be? Let us take a look at generalized social trust and informal social networks separately for further possible clarification.

According to Uslaner (1999, 2000), trust is more closely associated with individual features of personality than with sociodemographic characteristics (e.g., age, gender,

education level, domicile, occupational status, income, etc.). Based on his theories, it can be hypothesized that core personality characteristics (e.g., the Big Five personality traits, optimism) lead some people to trust other people and others to be more careful when dealing with others. This view, however, was recently questioned by Van Lange and colleagues (2014; 2015), who showed that genetic influence on generalized trust is virtually absent and that, instead, generalized trust appears to be ‘deeply rooted in social interaction experiences (that go beyond childhood), networks, and media’ (Van Lange, 2015, p. 71).

It is perhaps more reasonable, thus, to conceptualize social trust as a property of societies rather than of individuals. According to this view, individuals learn to trust by participating in a trusting culture and a high level of generalized social trust is actually a reflection in people of the trustworthiness of the society around them (Newton, 2001; Putnam, 2000). While this theory seems to offer an explanation for the relationship between differences in generalized social trust across individuals and nations, it is also quite conceivable that different regions within countries have very different social capital levels. Even within the same city, people in some districts may experience those around them, including neighbors, co-workers, and passers-by, to be trustworthy, whereas people in a nearby district in the same city may have very different everyday experiences. In the end, these regular experiences of social interaction may result in very different generalized social trust levels within the same country or the city. Unfortunately, we were not able to test for the existence of such lower-level, regional differences in this study because of data constraints. Indeed, regional differences within countries would also partly explain our finding that social capital variation across European countries is rather small: it may be that the regional differences inside these countries are bigger than differences between them.

Regional differences affect not only the generalized social trust levels but also the scope and composition of people’s informal social networks. Van der Meer and colleagues (2008)



demonstrated that a lack of a sense of safety, for example, has a negative effect on social participation. Furthermore, it has been suggested that our physical and social surroundings determine, at least to some extent, how much and with whom we socialize. It has also been proposed that state and local government institutions are implicated in levels of social participation as they have a facilitating role in creating places where social participation can take place (van der Meer, Scheepers & Grotenhuis, 2008). Therefore, the regional differences inside the countries are likely to be bigger than differences between them regarding the scope and strength of informal social networks.

We also found that the strength of the relationship between Openness to Change–Conservation and social capital indicators significantly varied across the different European countries. The relationship between Openness to Change–Conservation and Informal Social Networks, however, was statistically significantly moderated only by the countries' wealth, and the relationship between Openness to Change–Conservation and Generalized Social Trust was not moderated by any of the three country-level variables – national differences in wealth and the level of democracy and human development – that have repeatedly been shown to be associated with both individualism–collectivism and social capital (e.g., Coleman, 1988; Hofstede, 2001; Neira et al., 2010; Uslaner, 2002; von dem Knesebeck et al., 2005; Whiteley, 2000; Zmerli & Newton, 2008). This is, however, hardly surprising, considering that most of the variance (91%) in social capital measures lies between individuals within the 29 European countries rather than between those countries, and that Openness to Change–Conservation only explained 0.64% of the variance in the Generalized Social Trust index at the individual level. Thus, as less than 10% of total variance in the outcome variables (in our case, Generalized Social Trust and Informal Social Networks indicators) is between Level 2 units (i.e., countries), as suggested by Lee (2000), this difference can be considered trivial, and examining multilevel contextual effects would be neither meaningful nor necessary.

Furthermore, recent findings by Beilmann and Lilleoja (2015) suggest that, not only individualism–collectivism, but also a more general value structure, may be possible explanatory factors behind country-level differences in social capital. Their results indicate that congruence between a personal value structure and a country-level value structure is more important in generating individual-level generalized social trust in countries where the overall levels of social trust are higher. Therefore, it seems that, in some countries, there must be something in the general value structure that favors the generation of social capital and individualism–collectivism may constitute only a small fraction of this broader value structure that makes people more receptive towards social trust, norms of reciprocity, and cooperation.

It is also important not to forget about the different historical experiences across countries, especially because political regimes seem to have a strong effect on social capital levels, and a dictatorship can very effectively destroy social capital by making it very difficult or even dangerous to trust strangers and cooperate or socialize with people you do not know very well. The long-lasting consequences of the historical experience of Soviet rule on social capital levels in Eastern Europe demonstrate that political and institutional contexts play an important role in eroding social capital (Halpern, 2005).

### **Limitations and Conclusions**

Broadly speaking, our results confirm earlier, mostly culture-level, findings that people who emphasize independence of thought and action, as well as readiness for change, are more willing to trust and cooperate with people beyond their nuclear family and kinship group (cf. Gheorghiu et al., 2009; Realo et al., 2008), and they are more engaged in informal social networks. However, our research focused only on Europe, which, on a global scale, is a rather homogenous region, both in terms of human development and individualism–collectivism. Therefore, it is unclear whether the results we obtained would have been more robust (or even evident at all) if the study had included samples from other world regions.

Another limitation of our study lies in the fact that our measures of social capital comprise just two facets of the construct – that is, generalized social trust and informal social networks. Given the research findings that social capital is a multifaceted phenomenon, and that the different dimensions of social capital do not manifest a uniform relationship with the same phenomena (Guillen et al., 2011; Halman & Luijkx, 2006; Kaasa, 2009; Saxton & Benson, 2005), it is possible that the relationship between individualism–collectivism and participation in civic society, for instance, is different to the associations revealed by the present study. Unfortunately, the data from the ESS Round 6 (2012) do not allow us to estimate the strength and the scope of formal social networks. Future studies should, thus, examine the relationship between additional social capital dimensions and individualism–collectivism by using different datasets that allow more components of the multifaceted phenomenon of social capital to be captured. However, it is a strength of our study that it examines the relationship between individualism–collectivism and two social capital dimensions, because previous studies have analyzed the relationship with only one social capital dimension, be that generalized social trust (Gheorghiu et al., 2009) or informal social networks (Beilmann et al., 2014).

Another shortcoming of this study is measurement of Informal Social Networks with a single question which does not allow us to draw any conclusions on the size of person's social networks. Unfortunately ESS questionnaire items do not permit the composition of informal social network indexes with satisfactory psychometric characteristics. We exhausted all possible combinations of questionnaire items to come up with an index which would have at least had metric invariance across countries, but these efforts were to no avail. It has previously been acknowledged that researchers face many difficulties in measuring social relations and cooperation, because communities and nations can have quantitatively and qualitatively different forms of social capital, and expressions of social capital are, therefore,

often dissimilar across countries and regions (Halpern, 2005). Thus, it is a strength of our informal social networks indicator that it has a significant positive relationship with the other social capital dimension measure, generalized social trust. Therefore, we decided to include the informal social network indicator in our analyses despite it relies on single measure, as we strongly believe that social networks form an essential part of social capital and should not be left out when measuring the phenomenon. Hopefully, new social capital measures can be integrated into the ESS questionnaire in the future that would allow better measurement of both informal and formal social networks.

In sum, we found support for our hypothesis that more individualistically minded people are more willing to trust people beyond their close circle of friends and family, and they are more involved in informal social networks. However, our results suggest that Openness to Change–Conservation and sociodemographic factors, such as age, gender, education, and domicile, explain only a small fraction of individual differences in social trust and informal social network levels. Therefore, there must be other, more powerful factors that explain why some people are more willing than others to cooperate with and trust other people. As social capital is a resource that often makes other resources available to the individual (Adler & Kwon, 2002), and this resource is unevenly distributed, it is crucial to find out more about the determinants of social capital to avoid further growth in inequality.

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**Table 1***Sample Characteristics and Descriptive Statistics of the Generalized Social Trust Index and Openness to Change-Conservation for 29 Countries in ESS**Round 6*

Country	Individual-Level Measures								Culture-Level Measures		
	<i>N</i>	Mean Age ( <i>SD</i> )	% Female	Generalized Social Trust <i>M</i> ( <i>SD</i> )	Generalized Social Trust $\alpha$	Informal Social Network <i>M</i> ( <i>SD</i> )	Correlation between Social Capital Measures	Openness- Conservation <i>M</i> ( <i>SD</i> )	HDI 2012	GDP 2012	Democracy Index 2012
Albania	1,079	43 (18)	53	3.83 (2.17)	.53	3.57 (1.90)	.039	1.80 (0.82)	.749	4,406	5.67
Belgium	1,852	47 (19)	51	5.14 (1.63)	.70	4.07 (1.40)	.147**	-0.17 (0.91)	.897	44,828	8.05
Bulgaria	2,013	54 (17)	57	3.61 (2.00)	.78	3.75 (1.74)	.070**	0.55 (1.14)	.782	7,198	6.72
Cyprus	1,040	47 (18)	57	3.75 (1.95)	.77	3.37 (1.70)	.190**	0.15 (1.00)	.848	26,352	7.29
Czech Republic	1,745	47 (17)	50	4.67 (2.00)	.83	3.68 (1.62)	.057*	0.19 (1.03)	.873	19,670	8.19
Denmark	1,583	48 (19)	49	6.81 (1.46)	.72	4.30 (1.32)	.073**	-0.45 (0.98)	.901	57,636	9.52
Estonia	2,224	49 (19)	58	5.47 (1.76)	.72	3.25 (1.55)	.062**	0.01 (0.93)	.846	17,102	7.61
Finland	2,138	49 (19)	51	6.42 (1.46)	.73	4.02 (1.38)	.118**	-0.32 (1.00)	.892	47,224	9.06
France	1,884	51 (18)	55	4.97 (1.60)	.64	4.17 (1.45)	.124**	-0.32 (0.98)	.893	40,908	7.88
Germany	2,904	49 (18)	50	5.33 (1.63)	.68	3.80 (1.44)	.117**	-0.27 (0.99)	.920	43,932	8.34
Hungary	1,863	47 (18)	55	4.92 (1.95)	.82	2.46 (1.67)	.078**	0.00 (0.84)	.831	12,784	6.96
Iceland	692	44 (19)	51	6.32 (1.55)	.69	4.39 (1.40)	.058	-0.69 (1.02)	.906	44,222	9.65
Ireland	2,509	47 (18)	53	5.64 (1.87)	.76	3.59 (1.59)	.150**	0.01 (0.96)	.916	48,391	8.56
Israel	2,208	44 (19)	54	5.19 (1.87)	.69	4.37 (1.52)	.100**	0.00 (0.89)	.900	32,515	7.53

Italy	851	47 (18)	52	4.57 (1.92)	.71	3.99 (1.57)	.084*	0.37 (0.95)	.881	35,132	7.74
Kosovo	1,138	42 (17)	51	4.11 (2.08)	.68	3.97 (1.76)	-.062*	0.36 (0.70)		3,597	
Lithuania	1,777	47 (18)	59	5.15 (1.83)	.79	3.05 (1.67)	.100**	0.27 (1.04)	.818	14,172	7.24
Netherlands	1,782	51 (18)	53	6.01 (1.44)	.71	4.46 (1.24)	.121**	-0.43 (0.87)	.921	49,128	8.99
Norway	1,595	46 (18)	47	6.54 (1.42)	.70	4.50 (1.31)	.077**	-0.20 (0.97)	.955	99,636	9.93
Poland	1,745	46 (19)	52	4.25 (1.81)	.64	3.11 (1.57)	.123**	0.53 (0.97)	.821	12,876	7.12
Portugal	1,826	52 (19)	60	4.10 (1.82)	.76	4.83 (1.47)	-.043	0.10 (0.75)	.816	20,773	7.92
Russian Federation	2,022	45 (18)	62	4.72 (2.06)	.70	3.46 (1.75)	.077**	0.31 (0.96)	.788	14,091	3.74
Slovakia	1,719	49 (16)	60	4.15 (2.01)	.82	3.81 (1.63)	.060*	0.47 (1.02)	.840	17,151	7.35
Slovenia	1,226	48 (19)	54	4.93 (1.94)	.74	3.67 (1.55)	.091**	0.15 (0.91)	.892	22,488	7.88
Spain	1,752	47 (18)	51	5.13 (1.69)	.68	4.24 (1.49)	.049*	0.08 (1.04)	.885	28,993	8.02
Sweden	1,816	48 (19)	49	6.20 (1.57)	.73	4.55 (1.33)	.068**	-0.54 (1.00)	.916	57,134	9.73
Switzerland	1,454	47 (19)	50	5.90 (1.55)	.66	4.09 (1.33)	.137**	-0.34 (0.94)	.913	83,295	9.09
Ukraine	1,783	48 (19)	63	4.48 (2.20)	.85	3.42 (1.62)	.078**	0.34 (1.00)	.740	3,873	5.91
United Kingdom	2,197	52 (19)	58	5.65 (1.57)	.72	3.82 (1.60)	.058**	-0.04 (0.97)	.875	41,054	8.21
All Groups	50,417	48 (18)	54	5.14 (1.97)	.77	3.84 (1.62)	.116**	0.01 (1.01)			

Note. \*\*  $p < .001$  \*  $p < .005$



**Table 2**

*The Association between Informal Social Networks and Openness to Change–Conservation: Results from Hierarchical Linear Modelling*

	Fixed Effects		Variance Components	
	Coefficient (SE)	T-ratio	SD; Variance Component	$\chi^2$
<b>Model 0: The Unconditional Model of Informal Social Networks</b>				
Intercept of Social Network, $\gamma_{00}$	3.82 (0.10)	37.66***	0.42; 0.17	5467.64***
<b>Model 1: The Within-country Association between Social Network and Socio-Demographic Control Variables</b>				
Intercept of Informal Social Networks, $\gamma_{00}$	3.82 (0.10)	36.58***	0.42; 0.17	5523.94***
<i>Predictors of Informal Social Networks at LI:</i>				
Gender, $\beta_1$	-0.02 (0.03)	-0.63	0.09; 0.01	197.88***
Age, $\beta_2$	-0.01 (0.00)	-3.81**	0.01; 0.00	3054.91***
Education, $\beta_3$	-0.00 (0.00)	-0.13	0.01; 0.00	111.81***
Domicile, $\beta_4$	-0.03 (0.05)	-0.62	0.14; 0.02	162.13***
<b>Model 2: The Within-country Associations of Informal Social Networks to Age and Openness to Change–Conservation</b>				
Intercept of Informal Social Networks, $\gamma_{00}$	3.82 (0.11)	35.48***	0.42; 0.17	5791.21***
<i>Predictors of Informal Social Networks at LI:</i>				
Age, $\beta_1$	-0.01 (0.00)	-3.77**	0.01; 0.00	1708.12***
Openness to Change–Conservation, $\beta_2$	-0.28 (0.03)	-9.58***	0.09; 0.01	193.11***
<b>Country-level Moderators of the Association between Informal Social Networks and Openness to Change–Conservation</b>				
<b>Model 3: Countries' GDP</b>				
Intercept of Informal Social Networks, $\gamma_{00}$	3.86 (0.07)	58.94***		
<i>For Informal Social Networks intercept:</i> GDP, $\gamma_{01}$	0.39 (0.08)	5.14***	0.31; 0.10	4025.04***
<i>For Openness to Change–Conservation slope:</i>	0.04 (0.02)	2.28*	0.09; 0.01	153.34***

GDP,  $\gamma_{11}$

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**Model 4: Countries' HDI**

Intercept of Informal Social Networks, $\gamma_{00}$	3.84 (0.06)	63.99***		
<i>For Informal Social Networks intercept:</i> HDI, $\gamma_{01}$	0.31 (0.06)	5.52***	0.31; 0.10	4521.03***
<i>For Openness to Change–Conservation slope:</i> HDI, $\gamma_{11}$	0.03 (0.02)	1.37	0.09; 0.01	171.20***

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**Model 5: Countries' Democracy Index**

Intercept of Informal Social Networks, $\gamma_{00}$	3.92 (0.07)	54.01***		
<i>For Informal Social Networks intercept:</i> Democracy Index, $\gamma_{01}$	0.21 (0.04)	5.09***	0.33; 0.11	4437.72***
<i>For Openness to Change–Conservation slope:</i> Democracy Index, $\gamma_{11}$	0.02 (0.01)	1.96	0.09; 0.01	157.64***

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*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; SE = standard error; SD = standard deviation; L1 = Level 1 or within-country level of the model; L2 = Level 2 or between-country level of the models. Post-stratification weight (including design weight) was applied at Level 1, and population weight was applied at Level 2.

**Table 3**

*The Association between General Social Trust and Openness to Change–Conservation: Results from Hierarchical Linear Modelling*

	Fixed Effects		Variance Components	
	Coefficient (SE)	T-ratio	SD; Variance Component	$\chi^2$
<b>Model 0: The Unconditional Model of General Social Trust</b>				
Intercept of General Social Trust, $\gamma_{00}$	4.94 (0.12)	39.93***	0.58; 0.33	10,905.84***
<b>Model 1: The Association between General Social Trust and Socio-Demographic Control Variables</b>				
Intercept of General Social Trust, $\gamma_{00}$	4.95 (0.12)	40.21***	0.57; 0.33	10,683.42***
<i>Predictors of General Social Trust at L1:</i>				
Gender, $\beta_1$	0.04 (0.06)	0.61	0.17; 0.03	108.95***
Age, $\beta_2$	0.00 (0.00)	0.60	0.00; 0.00	177.64***
Education, $\beta_3$	0.02 (0.00)	4.42***	0.02; 0.00	261.43***
Domicile, $\beta_4$	-0.05 (0.10)	-0.47	0.23; 0.05	109.23***
<b>Model 2: The Association between General Social Trust and Openness to Change–Conservation</b>				
Intercept of General Social Trust, $\gamma_{00}$	4.95 (0.12)	41.17***	0.57; 0.33	10,857.21***
<i>Predictors of General Social Trust at L1:</i>				
Education level, $\beta_1$	0.02 (0.00)	4.62***	0.01; 0.00	214.98***
Openness to Change–Conservation, $\beta_2$	-0.13 (0.05)	-2.75**	0.12; 0.01	165.40***
<i>Country-level Moderators of the Association between Informal Social Networks and Openness to Change–Conservation</i>				
<b>Model 3: Countries' GDP</b>				
Intercept of General Social Trust, $\gamma_{00}$	5.01 (0.11)	46.24***		
<i>For General Social Trust intercept: GDP, <math>\gamma_{01}</math></i>	0.58 (0.09)	6.62***	0.38; 0.14	4264.33***
<i>For Openness to Change–Conservation slope: GDP, <math>\gamma_{11}</math></i>	-0.02 (0.03)	-0.70	0.12; 0.02	185.70***
<b>Model 4: Countries' HDI</b>				

Intercept of General Social Trust, $\gamma_{00}$	4.97 (0.12)	41.08 <sup>***</sup>		
<i>For General Social Trust intercept:</i> HDI, $\gamma_{01}$	0.38 (0.09)	4.27 <sup>***</sup>	0.46; 0.21	5968.85 <sup>***</sup>
<i>For Openness to Change–Conservation slope:</i> HDI, $\gamma_{11}$	-0.03 (0.03)	-1.14	0.12; 0.01	184.42 <sup>***</sup>
<hr/> <b>Model 5: Countries' Democracy Index</b>				
Intercept of General Social Trust, $\gamma_{00}$	5.06 (0.13)	39.75 <sup>***</sup>		
<i>For General Social Trust intercept:</i> Democracy Index, $\gamma_{01}$	0.23 (0.11)	2.18 <sup>*</sup>	0.50; 0.25	7178.40 <sup>***</sup>
<i>For Openness to Change–Conservation slope:</i> Democracy Index, $\gamma_{11}$	-0.01 (0.02)	-0.84	0.12; 0.02	183.24 <sup>***</sup>

*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; SE = standard error; SD = standard deviation; L1 = Level 1 or within-country level of the models. Post-stratification weight (including design weight) was applied at Level 1, and population weight was applied at Level 2 (i.e., the between-country level of the models).

## APPENDIX 1

### The List of Human Values Items in European Social Survey Questionnaire

- (1) Important to think up new ideas and be creative
- (2) Important to be rich, have money and expensive things
- (3) Important that people are treated equally and have equal opportunities
- (4) Important to show abilities and be admired
- (5) Important to live in secure and safe surroundings
- (6) Important to try new and different things in life
- (7) Important to do what is told and follow rules
- (8) Important to understand different people
- (9) Important to be humble and modest, not draw attention
- (10) Important to have a good time
- (11) Important to make own decisions and be free
- (12) Important to help people and care for others' well-being
- (13) Important to be successful and that people recognize achievements
- (14) Important that government is strong and ensures safety
- (15) Important to seek adventures and have an exciting life
- (16) Important to behave properly
- (17) Important to get respect from others
- (18) Important to be loyal to friends and devoted to people close
- (19) Important to care for nature and environment
- (20) Important to follow traditions and customs
- (21) Important to seek fun and things that give pleasure