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ORIGINAL RESEARCH

Does uncertainty avoidance keep charity away? comparative research between charitable behavior and 79 national cultures

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Abstract Prosocial behavior and the motivation behind it have been dominant topic and core concern of numerous studies across array of different social science disciplines. Nevertheless, the prevailing research approach is still mainly focused on prosocial behavior observed in terms of situational and individual aspects and less in terms of cultural and group tendencies and orientations. This research tried to explain prosocial behavior among 79 different countries focusing on cultural dimension of uncertainty avoidance. According to Hofstede, uncertainty avoidance (UAI) reflects how society deals with the uncertainty that future brings and with the level of anxiety brought by the outcome of this ambiguity. The amount to which the participants of a culture feel threatened by ambiguous or unfamiliar situations and shape views and institutions to avoid them are reflected in UAI score. Since charity is closely intertwined with economic, social and personal resources which in turn are closely linked with uncertainty avoidance, we successfully postulated how lower uncertainty avoidance is related with higher prosocial behavior which we ultimately supported by our research results.

Keywords Uncertainty avoidance · UAI · Prosocial behavior · Charity · National culture

Irrespective of universality of prosocial tendencies, the extent to which they are practiced in different cultures tends to vary significantly (CAF WGI 2014) and the identification of the determinants of charitable conduct is particularly important element in the process of increasing charitable giving.

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So why do countries differ in their engagement in prosocial behavior? Even though there is extensive empirical work related to the matter, as it's largely grounded at individual level of analysis and almost completely lacking data for country level analysis, it can still be seen as relatively limited (DiPietro 2013). In this paper we seek to lengthen our comprehension of the impact of national culture on the dimension of prosocial behavior. Furthermore we seek to establish whether we can use cultural construct of uncertainty avoidance (Hofstede 1980) to predict the frequency of prosocial occurrences defined as donating money, volunteering time and helping a stranger.

Cross cultural variations in prosocial behavior

Based on the available academic literature, most commonly mentioned determinants of charitable behavior are religion, income and wealth (Bekkers and Wiepking 2011). Active religious engagement and higher levels of religious dogmatism at country level seem to be positively related with charitable giving (Reitsma et al. 2006). Likewise, wealth and income seem to be positively related with total sum donated to charity (Auten et al. 2002; Steinberg 1990; Roodman and Standley 2006). According to DiPietro's (2013) cross country regression analysis: income, religiosity, perceptions of corruption and the "perceived degree of control over future economic conditions" are significant determinants of charitable giving (DiPietro 2013). Additionally, Winterich and Zhang (2014) suggest higher power distance (PD) leads toward weaker perceptions of responsibility to help others, which in turn decreases charitable behavior. According to their study, high PD cultures do not feel obliged to help those less fortunate since the inequalities, charity organizations try to minimize, are accepted by these cultures as normal condition within society. Their research data also support the idea that charitable giving is more common in countries that score higher on individualism than collectivism (Winterich and Zhang 2014). The individualism/collectivism cultural variation received the greatest attention in this field and so far has produced inconsistent data. Whereas some argue that collectivism enhances cooperation and individualism weakens prosocial motivation by endorsing self-interest (Carlo et al. 2001; Mullen and Skitka 2009) others debate that individualism enhances individual responsibility and civic commitment (Eisenberg et al. 2006; Kemmelmeier et al. 2006).

The importance of charitable behavior for modern society is increasingly highlighted as it contributes a lot in balancing the allocation of social resources (Henderson et al. 2012). This is especially evident in the wake of natural catastrophes and disasters like when Wenchuan earthquake struck China in 2008 and the region received immediate global donations worth over 76 billion RMB (Chinese Ministry of Civil Affairs No. 135 Announcement 2009). Interestingly, this was the year when money donating in China was at its highest peak. Similarly, Japan observed the same phenomena following the natural calamities that struck the country in March, 2011. Both countries since then had registered decline in donating money, even though Japan has registered increase in volunteering time.

According to latest Gallup's Worldview World Poll data, the percentage of people donating money is less than 10 % in Greece, Morocco and Russia, compared to over 70 % in Myanmar, Canada and United Kingdom. Similarly, the percentage of people that volunteer is less than 10 % in Italy, China, and Turkey, compared to over 50 % in Myanmar, Sri Lanka and Turkmenistan. In terms of helping a stranger, less than 30 % of people coming from Japan, Cambodia and Croatia are likely to do so, compared to 70 % those from Trinidad and Tobago, USA and Jamaica. One thing all cultures have in common is helping a stranger being the most popular mode of aiding. Previously, giving money was the leading prosocial tendency in Oceania, but over the years trend changed conforming to the rest of the world. Nevertheless, even with consensus on the dominant prosocial tendency, the continents still vary in their charitable patterns. In the countries of Americas, Asia and Europe, aiding a stranger is about twice as common as volunteering, and donating money is somewhere in between the two. In African countries, aiding a stranger is about three times as common as both volunteering and donating money to charitable organization (CAF WGI 2014). Contrary to general assumption that prosperous countries might be more willing to share, prosperous economy does not necessarily mean more charitable giving. This is evident from the example of BRIC countries where only China showed some increase in donating money since last year (CAF WGI 2014).

This data illustrate that regardless of the universality of the prosocial tendencies, the way they are manifested in different countries varies considerably. This is also consistent with the idea we are proposing in this work: the individual nature of a country is central to driving charitable behavior, and more precisely it's central to the mechanisms behind culture's attitude towards uncertainty.

Uncertainty avoidance and prosocial behavior

A country-level trait closely related to uncertainty is uncertainty avoidance (UAI). This cultural construct was established by Geert Hofstede as exemplary estimation of cultural behavior and it was consequently incorporated by Global Leadership and Organizational Behavior Effectiveness (GLOBE) studies (Carl et al. 2004) as one of cultural competencies.

Hofstede defined uncertainty avoidance, as "a society's tolerance for uncertainty and ambiguity" that represents the degree to which participants of a society try to cope with anxiety by reducing uncertainty. Cultures that score high on UAI dimensions are risk adverse with individuals that are generally more sensitive to the environmental uncertainty, less willing to accept personal risk, more aggressive (Hofstede 1980), more likely to feel stressed and anxious (Hofstede 1983; Hofstede and Bond 1984), more conservative in investment (Vishwanath 2003) and more resistant to change (Leung et al. 2005). Hofstede and Hofstede (2005) furthermore argued that individuals from cultures with high uncertainty avoidance have higher levels of prejudice toward what is different given different equals dangerous, and in terms of policymaking they feel inept in relation to authorities and establishments.

Governmental involvement in free market system is highly probable as well as valued by nations with high uncertainty avoidance index (Shah 2012) and it might just be one of the reasons why certain countries engage more in charitable behaviors than some other. For instance, Netherlands and France with UAI scores respectively 53, 86 (http://www.geert-hofstede.com/) hold a strong belief that government rather than charities should provide for social needs, whereas in US (UAI = 46) and especially in UK (UA = 35) charities have imperative role in aiding weakest social groups (CAF 2006). Since countries with high UAI scores by definition put lot of trust in their government (Hofstede 1980) and since this kind of activity usually falls under the service areas of different governmental agencies, it is logical to conclude that these countries might record lower involvement in prosocial behavior. This is in line with Brooks and Lewis's (2001) national research study suggesting individual charitable giving and volunteering rises as individual trust in government drops. It is also consistent with the notion that governments may impact levels of charity giving from their citizens via various tax policies (Feldstein and Taylor 1976; Clotfelter 1985; Schiff 1990; Greene and McClelland 2001; Gilbert 2005). Recent laboratory research data show that as the government increases the obligatory tax aid for public welfare, the private charity donation reduces (Andreoni 1993; Chan et al. 2002; Eckel and Grossman 2005; Isaac and Norton 2013; Vesterlund et al. 2008). According to Roodman and Standley (2006), states whose members trust their government to create relevant policies with society's best interest in mind are more prone to accept higher taxes that in turn allow the state to deliver more relevant services. These states and corresponding governments are also not very likely to encourage private citizens to take initiative in helping the needy ones, since societies that have great deal of confidence in public institutions and correspondingly are more ready to pay higher taxes, rely on their government to sustain these relationships and to deliver necessary social services and public goods (Roodman and Standley 2006).

Charitable behavior is quantitatively significant for both social and economic outcomes (Meier 2006a, b). According to economic theorists, charitable giving market largely revolves around governments, benefactors and charitable organizations. Governments are responsible for making tax policies, for giving subsidies to different charitable groups and for providing different public goods. Benefactors donate to charities, and lastly charitable organizations create various strategies to obtain donations and attract participants (List 2011). Volunteering is a form of symbolic consumption, which consumers use to demonstrate to relevant social groups who they are and what they stand for (Wymer and Samu 2002). Volunteering can also be compared with consumer behavior in terms of"trading" spare time for volunteering at the expense of some other leisure activity(Mowen and Sujan 2005). Helping a stranger loosely resembles consumer behavior. It includes relative costs where higher costs lower probability of undertaking the helping behavior (Meier 2006a, b). Perceived risk in consumer behavior is consumer's level of uncertainty regarding the outcome of potentially adverse consumption (Bauer 1960; Kogan and Wallach 1964; Mitchell 1999). It is a combination of a number of risk categories which include: performance, physical, financial, psychological, social and time loss risk (Kaplan et al. 1974; Roselius 1971; Stone and Gronhaug 1993, Hoyer and

Macinnis 1997, Dholakia 2001). All of these risk categories hypothetically can find their application in prosocial behaviors of donating money, volunteering time and helping a stranger. E.g. with reference to volunteering, existing literature identifies time risk (Blake and Jefferson 1992; Omoto and Snyder 1993), psychological risks like exhaustion, nervousness or even depression (Capner and Caltabiano 1993; Haski-Leventhal 2005; Mitchell et al. 2004), and social risk stemming from associating with potentially controversial groups (Omoto and Snyder 1993). Furthermore perceived risk may negatively affect donating behavior if the donor is unaware or uncertain whether his contribution will be used as promised and if making contribution is the right way to satisfy the beneficiary needs in the first place (Hibbert and Horne 1996). A common finding is that possible benefactors give less if there are insinuations about their donations being less effective or having very low impact. Another way risk negatively affects prosocial behavior is when potential benefactors use it as an excuse not to give at all (Exley 2014). Perception of risk and general attitude toward risk have been proposed to explain observed cross cultural differences in risky financial behaviors (Bontempo et al. 1997). These differences have also been identified in health and safety related contexts (Slovic 1991, Kleinhesselink and Rosa 1991), both of which hypothetically relate to prosocial activities of volunteering (Capner and Caltabiano 1993; Haski-Leventhal 2005; Mitchell et al. 2004) and helping a stranger. Helping a stranger, for example, has proven to be lower in embedded cultures (Knafo et al. 2009) which hypothetically may relate to social risk and violation of group norms (Hofstede 1981; Markus and Kitayama 1991; Terry and Hogg 1996). It also stands in support of "cultural theory of risk" initially proposed by Douglas and Wildavsky (1982). The main idea of the theory is that judgements about potential risk and danger are not shaped separately from social context but by the nature of social groups and the degree to which people identify with bigger social groups (Tansey and O' Riordan 1999). Risk perception research traditionally viewed individuals as units separated from social system. This was changed with psychometric (Slovic 1987, 2000) and cultural theories (Dake 1992; Douglas and Wildavsky 1982) that saw risk as rooted in social context and social exchanges amongst individuals, groups, and institutions (Scherer and Cho 2003). Substantial body of literature advocates that groups are a key promoter of prosocial activities (Cnaan et al. 2006; Wilson 2005; Haski-Leventhal and Cnaan 2009). E.g. the more one feels as part of a collective, the more he might volunteer for his in-group causes (Simon et al. 2000).

Cross cultural differences in prosocial acts of volunteering and helping a stranger might further on be explained by communication anxiety. General obstacle in initiating a communication with strangers is lack of security and lack of relevant data, which in turn lead toward uncertainty and anxiety (Ball-Rokeach 1973; Duronto et al. 2005). As a consequence, managing uncertainty and anxiety becomes a focal process governing this type of interpersonal communication. Existing research literature advocates that anxiety and uncertainty are strongly associated with stranger avoidance in contexts of same and different cultures (Berger and Calabrese 1975; Stephan and Stephan 1985; Gudykunst and Hammer 1987; Duronto et al. 2005). Anxiety in general was found to be negatively related with prosocial behavior (Eisenberg et al. 2006). Handy and Cnaan (2007) found that people with

higher levels of social anxiety are less willing to volunteer (Handy and Cnaan, 2007). The idea was also supported with novel findings in the field of social neuroscience. Stoltenberg et al. (2013), revealed that genetic variation in the serotonin receptors and prosocial behavior was mediated by anxiety. According to their data, if the individual carrying genotype associated with higher social anxiety, perceives prosocial behavior of helping as uncertain and/or potentially risky, he might opt for less risky decision under uncertainty (Stoltenberg et al. 2011). Since these individuals might experience higher arousal levels they might also be more risk adverse in general (Stoltenberg et al. 2013), and financially risk aversive in particular (Crisan et al. 2009; Kuhnen and Chiao 2009). This is in line with growing body of research advocating one's psychological tendency may result from genetic and environmental interactions. More precisely these genotypes may be related to greater plasticity or environmental exposure (Belsky et al. 2007, 2009; Obradovic and Boyce 2009; Way and Taylor 2010) which in turn "foster a more culture-specific way of behaving" (Ishii et al. 2014).

From the presented theoretical framework it is observable that prosocial behavior can involve certain risks, stresses and uncertainties, and yet more so for individuals primed for uncertainty by cultural context. With this idea in mind we seek to lengthen our comprehension of UAI cultural measure to the dimension of prosocial behavior and to establish whether we can use this cultural construct to predict the frequency of prosocial occurrences. In doing so, we assume that the relationship between prosocial behavior and uncertainty avoidance is negative one, i.e., the countries that score high on uncertainty avoidance will participate less in charity giving.

Method

Overview

The relative data for charitable giving on national level were retrieved from World Giving Index for 2011 Charities Aid Foundation database (CAF 2011). Uncertainty avoidance scores were taken from Hofstede et al. (2010) and the GLOBE Project (House et al. 2004). The unit of analysis was country unit and the total number of included countries was 79. Databases were established following standard sampling procedures and in strict compliance with study criteria.

Variables

Charitable giving

In this research we use data from Gallup's Worldview World Poll, so accordingly we define prosocial behavior in terms of giving money, volunteering time and helping a stranger. The World Giving Index, annual testimony of charitable behavior worldwide issued by the Charity Aid Foundation (CAF) is calculated based on the data from Gallup's Worldview World Poll (http://www.worldview.gallup.com) and

in year 2011 it comprised 153 countries and about 95 % of the world's population. Nationally representative data were obtained via multistage sampling procedure and the sampling frame was representative of the whole, non—institutionalized population, aged 15 and above. Gallup's Worldview World Poll for 2011 measured for charitable behavior by presenting respondents with the questions about following three charitable acts: (a) donated money to an organization, (b) volunteered time to an organization, (c) helped a stranger, or someone they didn't know who needed help. After the measuring was finalized, the relevant data were obtained for each country and each behavior, and were expressed in percentages. The correlations between the three set of data are displayed in Tables 1 and 2. Subsequently, World Giving Index (WGI) was produced by calculating an average of the three measures which then resulted in overall country score. This study relies on the relevant scores for all the observed behaviors as well as on WGI as dependent variable in the study.

Uncertainty avoidance index

In order to make study results more convincing, we used two independent but content-relevant databases as the sources for uncertainty avoidance values: Hofstede's (Hoftede et al. 2010; www.geert-hofstede.com) and the GLOBE project data (House et al. 2004). The Hofstede edition we used in this study includes the scores for 83 countries, among which 79 had data relating to the World Giving Index 2011 which were relevant units for our study. GLOBE database encompasses 62 countries/cultures and the significant data relating to World Giving Index 2011 were available for 41 countries. Also, since GLOBE cultural dimensions encompass societal practices (''As Is'') and values (''Should Be'') we based our study on uncertainty avoidance societal values as relevant UAI cultural dimension. This study relies on both Hofstede's and GLOBE' sets of UAI data as the independent variable.

Control variables

The following economic indicators and cultural dimensions were included as control variables: Gross National Income per capita (GNI), Gini Coefficient, individualism/collectivism (IDV) and power distance (PDI). Gross National Income per capita (GNI) (http://www.hdr.undp.org/en/statistics) per each country was made available from the 2011 Human Development Report database while each countries' Gini Coefficient, illustration of the wealth distribution among population, was obtained mostly from the UNU–WIDER World Income Inequality Database (WWID) version 2.0c (http://www.wider.unu.edu), and partially from the Organization for Economic Co-operation and Development (OECD) Stat Extracts database (http://www.stats.oecd.org/Index.aspx?QueryId=26068) since some countries' information were not available in WIID 2. The correlations between economy indicators and WGI are displayed in Tables 1 and 2. The relevant data for individualism and power distance variations were obtained following the same principle we used to obtain UAI data and referring to Hofstede's cultural dimensions and GLOBE project. Since GLOBE project studies encompass the cultural dimensions

Table 1 Correlations coefficients values (Spearman's rho) between economic indexes, cultural dimensions and charitable behaviors (Hofstede's database)

	M	SD	GINI	gini	IDV	PDI	UAI	Giving money	Volunteering time	Helping stranger	WGI
GNI	18974.05	14607.99									
gini	37.95	9.33	−.547[b]								
IDV	40.13	22.90	.535[b]	−.460[b]							
PDI	62.73	21.51	−.428[b]	.392[b]	−.636[b]						
UAI	66.89	22.47	−.129	.046	−.189	.223[a]					
Giving money	36.47	19.86	.487[b]	−.285[a]	.387[b]	−.449[b]	−.356[b]				
Volunteering time	20.27	9.90	.292[b]	.371[b]	−.053	−.348[b]	−.196	.496[b]			
Helping stranger	47.30	11.97	.048	.139	.185	−.279[a]	−.326[b]	.381[b]	.582[b]		
WGI	34.68	11.30	.387[b]	−.130	.398[b]	−.461[b]	.379[b]	.865[b]	.788[b]	.746[b]	

[a] Correlation is significant at the .05 level (2-tailed)

[b] Correlation is significant at the .01 level (2-tailed)

Table 2 Correlations coefficients values (Spearman's rho) between economic indexes, cultural dimensions and charitable behaviors (GLOBE database)

	M	SD	GINI	gini	IDV	PDI	UAI	Giving money	Volunteering time	Helping stranger	WGI
GNI	18974.04	14607.99									
gini	37.95	9.33	−.547[b]								
IDV	4.75	.51	−.316[a]	.339[a]							
PDI	2.73	.41	.091	−.116	−.470[b]						
UAI	4.60	.62	−.736[b]	.642[b]	.343[a]	−.032					
Giving money	36.47	19.86	.487[b]	−.285[a]	−.050	.141	−.416[b]				
Volunteering time	20.27	9.90	.292[b]	−.053	.090	−.069	−.388[b]	.496[b]			
Helping stranger	47.30	11.97	.048	.139	.142	.044	−.219	.381[b]	.582[b]		
WGI	34.68	11.30	.387[b]	−.130	.044	.079	−.433[b]	.865[b]	.788[b]	.746[a]	

[a] Correlation is significant at the .05 level (2-tailed)

[b] Correlation is significant at the .01 level (2-tailed)

of UAI and power distance as well as four collectivism values—institutional values and in group values in relation of "what is" and "what should be"; we used in-group collectivism societal value as representative measure of individualism in this study. The correlations between the two cultural dimensions and World Giving Index are also displayed in Tables 1 and 2.

Results

Correlations

Across the sample of 79 countries three charitable behaviors: donating money, volunteering time and helping strangers shown to be significantly correlated ($r = .496$, $r = .381$, $r = .582$, respectively; $p < .01$ for all). These correlations resulted strong enough to suggest that the three prosocial acts are all closely reflective of the same core behavioral orientation, and thus can be merged with their respective scores into one charity indicator.

Preliminary testing of our hypothesis included examination of zero-order correlations between World Giving Index and economic indicators (GNI per capita and Gini coefficient) and cultural dimensions of uncertainty avoidance, individualism and power distance. The country- charity level resulted positively correlated with countries' wealth ($r = .387$, $p < .01$), while Gini coefficient resulted negatively correlated with donating money ($r = -.285$, $p < .05$). The examined cultural dimensions also proved to have significant relations with charitable behavior, so Hofstede's power distance dimension had a negative correlation with WGI ($r = -.461$, $p < .01$), while Hofstede's individualism was positively correlated to WGI ($r = .398$, $p < .01$).

The most important cultural dimension for the presented study UAI, revealed negative correlation for both Hofstede's and GLOBE databases analyzed, suggesting that countries with lower UAI tend to have higher propensity toward charitable giving ($r_1 = -.379$, $p_1 < .01$,

$r_2 = -.433$, $p_2 < .01$; respectively). In detail, data from Hofstede's cultural dimensions revealed negative UAI correlation with donating money ($r = -.356$, $p < .01$) and helping strangers ($r = -.326$, $p < .01$). Similarly, data from GLOBE societal values showed negative UAI correlation with donating money ($r = -.416$, $p < .01$) and volunteering ($r = -.388$, $p < .01$).

Predicting the effects of UAI

Taking in consideration the correlated nature of three cultural dimensions and trying to control the effects of confounding factors, we conducted regression analyses on each of the four relevant variables: GNI per capita, Gini coefficient, cultural dimensions of individualism and power distance which were added to regression equation as control variables. We proceeded by examining the predictive power of UAI in relation to money donating, volunteering and helping stranger, respectively. The multiple regression analyses have been carried for both sets of data, Hofstede's

and GLOBE's. As expected, UAI stably and significantly predicted charitable behavior, even after controlling for listed effects. For Hofstede's data (see Table 3) UAI negatively predicted WGI ($\beta = -.435$, $p < .001$), money donating ($\beta = -.406$, $p < .001$), volunteering ($\beta = -.307$, $p < .01$) and helping strangers ($\beta = -.349$, $p < .01$). For GLOBE societal values (see Table 4) UAI also negatively predicted WGI ($\beta = -.516$, $p < .05$), volunteering ($\beta = -.513$, $p < .05$) and helping strangers ($\beta = -.532$, $p < .05$). The obtained results stand in support of our hypothesis that UAI can be interpreted as a valid indicator of charitable giving at country level.

Control variables revealed to have certain effect on individual charity indicators. Hofstede's data sustained GNI per capita as effective predictor of country-level charity. The more money people make, it is more likely they will engage in prosocial behaviors of donating money ($\beta = .384$, $p < .05$) and time ($\beta = .648$, $p < .001$). Also according to both Hofstede's and GLOBE's data, Gini coefficient could serve as effective predictor of positive charitable behaviors. This might be explained in terms of the wider gap between the rich and the poor which in turn drives the society toward more balanced distribution of social resources via charitable giving. In terms of cultural dimensions and societal values, cultural dimension of individualism appeared to be a negative predecessor of charity, with only GLOBE data ($\beta = -.415$, $p < .01$) demonstrating significant prediction power. Additionally, the power distance's effects on charity proved to be contradictory amongst two databases examined, calling for further research into it. Finally, according to results of this study, uncertainty avoidance revealed to be more robust predictor of country-level charity than other examined factors.

Figure 1 shows a scatter plot with uncertainty avoidance on the horizontal axis and charity on the vertical axis, based on the dataset that was used for the analysis presented in this study. The dots in the plot represent all 79 countries included in the

Table 3 Standardized betas, Hofstede's uncertainty avoidance index as predictor of WGI, donation, volunteering, helping strangers, controlling for GNI per capita, Gini coefficient, Hofstede's individualism and power distance (N = 57)

	WGI	B donating	Volunteering	Helping
Model 1				
GNI per capita	.19	.21	.52***	−.23
Gini Coefficient	.21	.01	.33*	.34*
IDV	−.19	−.08	−.12	.33[ɨ]
PDI	−.40**	−.35*	−.14	−.48**
Model 2				
GNI per capita	.38*	.38*	.65***	−.08
Gini coefficient	.19[ɨ]	−.01	.31*	.32**
IDV	−.02	−.12	−.03	.16
PDI	−.28*	−.25[ɨ]	−.05	−.39*
UAI	−.44***	−.41***	−.31**	−.35**

[ɨ] $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4 Standardized betas, GLOBE's uncertainty avoidance values as predictor of WGI, donation, volunteering, helping strangers, controlling for GNI per capita, Gini coefficient, GLOBE's individualism and power distance values (N = 41)

	WGI	*B* donating	Volunteering	Helping
Model 1				
GNI per capita	.80***	.58**	.82***	.75***
Gini Coefficient	.23	.01	.32[ɪ]	.42**
IDV	.35*	.26	.28[ɪ]	.39**
PDI	.31*	.22	.25[ɪ]	.34**
Model 2				
GNI per capita	.41[ɪ]	.31	.43[ɪ]	.34
Gini Coefficient	.28ɪ	.04	.38*	.48**
IDV	.42**	.31[ɪ]	.34*	.45**
PDI	.28*	.21	.22	.31*
UAI	−.52*	−.35	−.51*	−.53*

[ɪ] $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < .001$

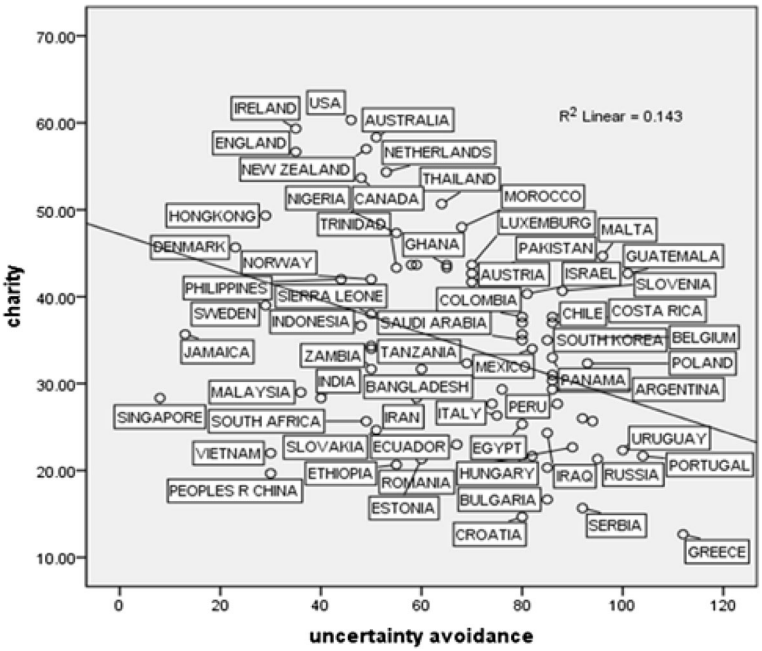

Fig. 1 Scatter plot of correlation between uncertainty avoidance and charity at country level of analysis

dataset. The negative association between charitable giving and uncertainty avoidance as found in this research study is evidently reflected in this scatter plot. As the most exemplary countries we can single out Italy and New Zealand which are

very comparable with reference to general wealth and income inequality, and yet are very different with reference to their charitable behaviors and uncertainty avoidance attitudes. Whereas New Zealand scores high on charitable giving and relatively low on uncertainty avoidance, Italy scores high on uncertainty avoidance and relatively low on charitable giving.

Discussion and conclusion

Prosocial behavior is an intricate phenomenon that can be examined at various levels of analysis including individual, cultural and cross cultural levels. Prior research in the field have thoroughly examined individual prosocial behavior somewhat overlooking its macro level aspects. In our study we focused on the country—level analysis impact of uncertainty avoidance with respect to prosocial behavioral tendencies. Our study encompassed 79 countries and has resulted with confirmation of our initial hypothesis demonstrating negative correlation between UAI and prosocial behavior, meaning the individuals in the nations with higher UAI were less likely to donate their money and time to help strangers than their lower UAI counterparts.

According to our knowledge this is the first research directed toward understanding of the impact of UA on prosocial behavior on cross cultural level of analysis. We find it innovative and important since this study differentiates itself from existing literature by shedding a new light on apprehension of very important social issue. Quite often the cultural psychology research studies focus on individualism and collectivism as main cultural variation (e.g., Kashima et al. 1995; Kim et al. 1994; Triandis 1995), mostly represented in showcasing the differences between western and eastern cultures. In fact it's so broadly used in explanation of numerous cultural phenomena (Triandis et al. 1988) that commonly gets identified as synonym for Hofstede's cultural framework, prevailing over other cultural components. As stated by Vandello and Cohen (1999) the dimension of individualism-collectivism has been "one of the most useful and actively researched constructs to emerge from cultural social psychology". Uncertainty avoidance index is less popular cultural variable; it's somewhat marginal and is usually incorporated within research topic as one of the cultural indicators, just as envisioned by Hofstede's cultural framework. With our research we have revealed how apparently secondary values might play a crucial role in countries' attitudes if they tap into the pertinent behavioral sphere; in this case prosocial behavior which has significant associations with risk aversion and uncertainty, which in turn perfectly fit with the illustrative domain of the UAI.

What implications do these results have for the study of prosocial charitable behavior? Our research data may be relevant for more complete and informed understanding of complex and intricate relations between individual countries and acts of charitable behavior. The link we were able to reveal with the results of our research may lead toward more sophisticated comprehension of the prosocial tendencies on a cultural level analysis. We demonstrated how individual nature of a country might be central to driving charitable behavior and also might be central to

the mechanisms behind culture's attitude towards uncertainty. Uncertainty exists as a cognitive state in situations that appear to be unfamiliar, complex, ambiguous, or simply unclear (Babrow et al. 2000; Babrow et al. 1998; Brashers 2001). Individuals differ in their tolerance for uncertainty thus uncertainty may be intolerant for some people and of no importance whatsoever to others (Kramer 1999). Elementary psychological processes such as cognition, judgement and evaluation, or emotion can be systematically influenced by culture (Kitayama and Uskul 2011). Following the same approach we can conclude how culture influences social judgement by activating relevant cognitive representations (Kitayama and Uskul 2011), in this case, higher or lower tendency toward uncertainty avoidance. Previous research on cognitive uncertainty avoidance have proved how UAI can significantly influence choices of uncertain and certain options, being much more useful in predicting gain —framed situations than in loss—framed situations (Fletcher and Clark 2008).

According to current research in cultural psychology there are two ways in which culture can be altered: production and adaptation of new values and practices. Novel practices might get produced in the circumstances of desperate need for them due to some existential threat to current system (Kitayama et al. 2010; Kitayama and Uskul 2011). However when there is no major threat to cultural identity, adoption of existing practices from other groups is motivated by social competition for status within original cultural group. Adaptation is usually very straightforward and fast process, especially for simply imitable cultural aspects. Problem with changes of cultural values is that sometimes they can be extremely stable, especially the ones that have been dominating cultures for 20 years or longer (Inglehart and Baker 2000), the kind of stability that can be identified in uncertainty avoidance variations. These kinds of cultural values are harder to adopt, firstly for them not being so obvious to observe, and then more importantly for the strong need of exposure to the same via long term socialization processes (Keller 2007).

From an economic perspective, charitable giving is big business. From a social perspective, charitable contributions permit social responsiveness, thru allocating services that are not sufficiently provided by either corporate or governmental sector (Kotler 1979). To prosper in such an environment, a charity should develop effective promotional policy: a precise, cohesive communications program to present itself and its services to potential benefactors (Engel et al. 1994). Promotion of prosocial behaviors in cultures that score high on UAI should occur through exhaustive knowledge and understanding of national cultural features, via well-designed and adapted schemes that would encourage and enable charity lowering the levels of anxiety related to the same. People do encounter costs and thus uncertainty, when engaging in prosocial activities like donating money or volunteering time. Given how prosocial behavior is noticeably important for economic and societal outcomes, having better understanding of the national character and relevant cultural features, might be useful for all entities pertaining to charitable sector when designing appropriate institutions and operational policies, since otherwise the same ones might fail to reach their intended goals (Meier 2006a, b). Culture is the "software of the mind" (Hofstede et al. 1991) where formal institutions are themselves "products of the dominant cultural value systems" (Hofstede 2001). Consequently, the very same institutions that are present in

cultures with dissimilar cultural values can generate different economic outcomes (North 1990). Reducing the anxiety and ambiguity present in environments closely related and involved with donating money, volunteering time and providing help in the countries that score high on UAI, might actually help increase charitable behavior in these same countries.

Our research results established positive relationship between country- charity level and countries' wealth confirming level of prosperity might be determining factor of the absolute amount of money people are commonly willing to donate (CAF 2006; Madden and Scaife 2008). Furthermore, Gini coefficient resulted negatively correlated with donating money suggesting that the higher inequality within the country is related to the lower prosocial behavior. This is in line with existing research literature on income inequality, social trust and social participation (Lancee and Van de Werfhorst 2012; Fairbrother and Martin 2013). The examined cultural dimensions also proved to have significant relations with charitable behavior, so Hofstede's power distance dimension had a negative relation with WGI, which was consistent with existing research data (Winterich and Zhang 2014), while 's individualism was positively related to WGI supporting the idea that more individualist countries engage in prosocial activities more frequently, which was coherent with the research study results obtained in USA (Kemmelmeier et al. 2006).

Limitations and future research

Every day, variety of helping acts takes place in all cultures and societies. Nevertheless we still know relatively little about the degree to which mechanisms and behaviours related to helping are comparable or dissimilar across cultures (Aydinli et al. 2013). Our definition of prosocial behavior and charitable tendencies was based on three charitable acts that were used as general framework for definition of prosocial behavior and in turn were applied as a relevant measure in multicultural context. This might be somewhat "imprecise" given the complexity of cultural environment as well as convolution and intricacy of prosocial behavior and moral reasoning. It is logical to conclude that the same way different cultural entities differ in their prosocial engagement, it might well be that different cultures define prosocial behavior and charity in different ways and via different helping gestures. Another potential issue is the fact that data included in our research framework were initially obtained via self-reports designed to assess the prosocial behavior, where reported behavioral tendencies can significantly vary from actual real life behavior (Schwartz 1973). These shortcomings might potentially be surpassed by systemic examination of individual character of cultural entities particularly focusing on antecedents of helping (van de Vijver et al. 2011) and their formation, which in turn are shaped by relative factors that fundamentally vary across cultures (Kagitcibasi 1997, 2013).

Our available data bases allowed us to conduct analyses on the example of 79 cultural entities, which might be viewed as somewhat limited sample given the number of current sovereign countries in global context according to latest data from UN (http://www.unstats.un.org) amounts to 206. Since our research method

was based on specific set of data which unfortunately were available for the included sample; this limitation can be surmounted only by further causational or relevant correlational studies that would replicate our initial findings.

Given that the nature of research we conducted here was correlational, prevalent limitation i.e. absence of causal inference is self –imposed. For the reason that this study is correlational, it is possible that prosocial tendencies were influenced by factors such as income inequality or some other cultural variation. However after including an extra control for income and income inequality the prosocial tendencies did not significantly change. Similarly, adding or removing cultural variables from the equation leaves the prosocial value fairly stable. That said, correlational studies are inevitably subject to alternative explanations, such that establishing the causal impact of uncertainty avoidance on prosocial behavior demands the use of experimental methodology, the direction future research should move toward.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical standards The manuscript does not contain clinical studies or patient data.

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