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Mean Profiles of the NEO Personality Inventory

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Abstract

The Revised NEO Personality Inventory (NEO-PI-R) and its latest version, the NEO-PI-3, were designed to measure 30 distinctive personality traits, which are grouped into Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness domains. The mean self-rated NEO-PI-R scores for 30 subscales have been reported for 36 countries or cultures in 2002. As a follow-up, this study reports the mean scores of the NEO-PI-R/3 for 71,870 participants from 76 samples and 62 different countries or cultures and 37 different languages. Mean differences in personality traits across countries and cultures were about 8.5 times smaller than differences between any two individuals randomly selected from these samples. Nevertheless, a multidimensional scaling of similarities and differences in the mean profile shape showed a clear clustering into distinctive groups of countries or cultures. This study provides further evidence that country/culture mean scores in personality are replicable and can provide reliable information about personality dispositions.

Keywords

Personality, five-factor model, cross-cultural research, traits, country mean scores, NEO-PI-R, NEO-PI-3

Introduction

The Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) was designed to measure 30 distinctive personality traits which are grouped into the so-called Big Five independent dimensions of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. A slightly revised version, the NEO-PI-3, was developed to improve

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readability of the items (McCrae, Costa, & Martin, 2005). Because the NEO-PI-R/3 is one of the most widely used and comprehensive instruments for measuring the Five Factor Model (FFM) of personality, it has been translated into many different languages by enthusiastic colleagues (McCrae & Allik, 2002). As the pattern of covariation between the 30 traits has transcended languages and cultures, there is a good reason to suggest that these five factors of personality may be a human universal (Allik, Realo, & McCrae, 2013; McCrae & Costa, 1997).

Mean self-rated NEO-PI-R scores were initially reported for 26 countries, territories, or cultural groups (McCrae, 2001) and subsequently for 36 countries (McCrae, 2002, Appendix 1). Although the mean self-report NEO-PI-R scores for Conscientiousness are already available for 42 countries/cultures (Mõttus, Allik, & Realo, 2010), there has been no update for all traits since 2002. For various reasons, collecting NEO-PI-R/3 observer ratings has been both more systematic and prolific than accumulating self-reports across different countries and cultures. For instance, the members of the *Personality Profiles of Cultures Project* collected data from 11,985 participants from 50 countries/territories who each rated an adult or college-aged man or woman whom they knew well using the NEO-PI-R (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). Following the same study plan, Allik and colleagues (2009) had 7,065 participants from 33 administrative areas of the Russian Federation rate an ethnically Russian adult or college-aged man or woman whom they knew well using the Russian observer-rating version of the NEO-PI-3. For the study of personality in early adolescence, De Fruyt et al. (2009) had 5,109 participants of the *Adolescent Personality Profiles of Culture Project* in 24 different cultures rating adolescents aged 12 to 17 years. Compared with these coordinated efforts, the accumulation of self-report NEO-PI-R/3 data has been more sporadic. Nevertheless, available data from 29 cultures where both self- and observer-reports were collected suggested that the mean profiles from internal and external perspectives are very similar (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005) although there is a small but a cross-culturally replicable pattern of differences between these two perspectives (Allik et al., 2010; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005).

With a sufficiently large number of countries or cultures, it became possible, for the first time, to examine the worldwide distribution of personality profiles (Allik & McCrae, 2004). Although 36 countries or cultures was a relatively small number and continents were represented unevenly, Allik and McCrae (2004) noted that geographically or culturally proximate samples often had similar personality profiles, and there was a clear contrast between different world areas (Allik & McCrae, 2004). These regularities in the worldwide distribution of personality traits were confirmed and extended by other studies, which used alternative measures of the FFM (Rentfrow, 2014; Rentfrow, Gosling, & Potter, 2008; Schmitt et al., 2007). There is something fascinating in geography; both laypersons and scientists take an interest in rankings of countries on all possible grounds, ranging, for example, from personal savings (Hirsh, 2015) to happiness (Helliwell, Layard, & Sachs, 2015). These rankings, however, make sense only if the aggregate scores represent an accurate statistical summary of how much people managed to save from their incomes and how trustworthy are their self-reported happiness scores. For example, if we talk about self-reported information, then people may see themselves differently from how they are perceived by others, leading to inaccurate descriptions (Allik et al., 2010; Vazire, 2010). Despite these concerns, the 36 country/culture means reported by McCrae (2002) have been used in a large number of studies from which only a small fraction can be named here (e.g., Bartram, 2013; Church, 2016; Gelade, 2013; Hofstede & McCrae, 2004; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005; Meisenberg, 2015; Mõttus et al., 2010; Schmitt et al., 2007). The range of topics for which these aggregate scores have been used is rather impressive, including happiness (P. Steel & Ones, 2002), innovation (G. D. Steel, Rinne, & Fairweather, 2012), corruption (Connelly & Ones, 2008), spread of pathogens (Schaller &

Murray, 2008), and national intelligence (Dunkel, Stolarski, van der Linden, & Fernandes, 2014). Thus, the NEO-PI-R mean scores have already played a prominent role in testing theories and addressing various problems.

Although deriving the NEO-PI-R mean scores for 36 countries/cultures represented a significant progress, this was still a desperately small number of countries/cultures. This has inhibited validation of these scores with other culture-level variables. For example, when Heine and colleagues tried to find a link between pace of life and personality dispositions in different places (Heine, Buchtel, & Norenzayan, 2008), they could only identify a small number of countries for which both pace of life and trait scores were available. In a well-known article, Levine and Norenzayan (1999) compared the pace of life in large cities from 31 countries around the world. They measured average walking speed in downtown locations, the speed with which postal clerks completed a simple request (work speed), and the accuracy of public clocks. Unfortunately, there were only 10 countries out of these 31 for which the NEO-PI-R self-ratings were also available (Heine et al., 2008). This is an obvious reason why it is desirable to enlarge the number and scope of countries for which NEO-PI-R/3 mean scores are available.

One additional obstacle to progress has been the discovery that country rankings on aggregate personality traits sometimes looked implausible. For instance, counter intuitively, Mõttus, Allik, Realo, Pullmann, et al. (2012) found that rankings on Conscientiousness suggested that the most disciplined and methodical people live in Benin and Burkina Faso, whereas the most lackadaisical and easygoing people live in Japan and Korea. To take another example, even cultural experts were perplexed by the fact that people living in Norway, Sweden, and Denmark average very high on E6: Positive Emotions—a subscale of Extraversion in the NEO-PI-R/3—while people in Hong Kong, Portugal, and Italy average among the lowest countries on this personality trait (McCrae, 2001, 2004; McCrae & Terracciano, 2008). These and other puzzling rankings led some researchers to question the trustworthiness of national mean scores in general (Heine et al., 2008; Heine, Lehman, Peng, & Greenholtz, 2002; Perugini & Richetin, 2007). Although the frame-of-reference explanation—the tendency for people to respond to subjective self-report items by comparing themselves with implicit standards from their culture—found a little support when it was tested directly (Mõttus, Allik, Realo, Rossier, et al., 2012), there are more fundamental reasons why accurate ranking of countries on all personality traits is difficult to establish. One reason out of many potential ones is that all cultural or national differences in personality are small relative to individual variation within each culture or nation. Indeed, a preliminary observation indicated that the standard deviation of personality trait scores at the country (aggregate) level is about 3 times smaller than the standard deviation of individual-level scores within countries or cultural groups (Allik, 2005). This means that, on average, cultural or national differences are approximately 9 times smaller than individual differences on the same traits within these cultures or nations. One obvious implication of this result is that the sample sizes used in these studies may be too small for reliable ranking of countries or territories (Allik & Realo, 2016).

In this article, we have several goals. First, we will extend the initial list of 36 countries/territories or cultural groups (McCrae, 2002) for which mean self-rated NEO-PI-R/3 scores are available. Many researchers are interested in the use of national mean scores of the NEO-PI-R/3 for examining various theories about the relationship between culture and personality. However, the credibility of these explanations rests on the completeness of personality data, which should be accurate and representative of most of the world. Second, we are particularly interested in replication of the mean scores in two or more independent samples, which is one of the main criteria for the trustworthiness of the data.

Finally, one of our goals is to examine the relation between country-level variance and individual-level variance within each country or culture group. If the variance between countries is small in relation to the variance between individuals within country, then it means that

establishing accurate ranking of countries on aggregate personality scores is a difficult task, and may require larger samples than usually used.

Method

Samples

We started with the 36 NEO-PI-R self-rated mean profiles, expressed in *T*-scores, reported in McCrae's paper (McCrae, 2002, Table 1). The original list included the mean scores from Australians, Belgians (Flemish), Black South Africans, Canadians, Chinese, Czechs, Danes, Estonians, Filipinos, French, Germans, Hispanic Americans, Dutch, Hong Kong Chinese, Hungarians, Indonesians, Italians, Japanese, Koreans, Malaysians, Marathi Indians, Norwegians, Peruvians, Portuguese, Russians, Serbians, Zimbabweans, Spaniards, Swedes, Swiss Germans, Telugu Indians, Turks, Americans, and White South Africans samples (McCrae, 2002, Table 1). Information on these samples is reproduced in its original form in the first section of our Table 1. Normative NEO-PI-R data for the USA (1992) served as a reference for other samples, which is why all their *T*-scores are equal to 50. The Hispanic American sample was quite small (N = 73) and was omitted. Although Korea and Norway were each represented by two translations and samples, they were combined (McCrae, 2002, Appendix 1). Similarly, German data were separately available for Eastern and Western parts (Angleitner & Ostendorf, 2000), but due to the absence of substantial differences, combined scores were presented. After these omissions and merges, there were data for 24,121 participants from 36 countries/cultures (including USA norms).

The second section of Table 1 shows data from countries/cultures, which are new entries. These data were obtained either from published sources or from individuals who kindly sent their data. For instance, Jerome Rossier and his colleagues collected new entries from several French-speaking African countries: Benin, Burkina Faso, Congo, Democratic Republic of Congo, Mali, Mauritius, Senegal, and Tunisia (Zecca et al., 2013). We also searched the *Web of Science*, *PsycINFO*, *Google Scholar*, and other databases. New translations of the NEO-PI-R/3 became available for several languages: Basque (Gorostiaga, Balluerka, Alonso-Arbiol, & Haranburu, 2011), Bulgarian (Costa & McCrae, 2007), Greek (Fountoulakis et al., 2014), Icelandic (Jonsson & Bergthorsson, 2004), Latvian (Van Skotere & Perepjolkina, 2011), Lithuanian (Žukauskiene & Barkauskiene, 2006), Romanian (Ispas, Iliescu, Ilie, & Johnson, 2014), and Tigrigna (or Tigrinya; Bahta & Laher, 2013). Although an earlier version of NEO-PI was translated into Finnish (Pulver, Allik, Pulkkinen, & Hämäläinen, 1995), data for Finnish version of the NEO-PI-R were collected for a more recent project (Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007), which mean values were provided by Jan-Erik Lönnqvist. In several cases, the mean scores were not reproduced in the published papers but the authors of these papers kindly sent them to us on our requests. Repeated translations appeared for Swedish (Källmen, Wennberg, Andreasson, & Bergman, 2016; Källmen, Wennberg, & Bergman, 2011), Norwegian (Martinsen, Nordvik, & Eriksen Østbø, 2011), and Spanish (Sanz & García-Vera, 2009) versions of the NEO-PI-R. The Italian version of the NEO-PI-R was administered to a large, founder population sample (N = 5,669) from the Ogliastra, an isolated region within Sardinia, Italy (Costa et al., 2007).

In addition, some authors of this paper provided new unpublished data. For example, NEO-PI-R/3 data have been added for Mexico (Church et al., 2011; Ortiz et al., 2007). In Czechia and Estonia, the authors initially collected new NEO-PI-R data and more recently NEO-PI-3 self-report data, enabling us to observe how much the new version replicate the previous one.

Because 1992 norms for the United States were used to compute *T*-scores, we decided to use the Baltimore Longitudinal Study of Aging, where the age of 1,994 participants ranges from 20

Table 1. Characteristics of the Samples.

Code	Country/territory/culture	Language	*n*	Source/reference
McCrae (2002, Table 1)				
AUT	Austria	German	536	F. Ostendorf
BEL	Belgium	Flemish	1,119	F. De Fruyt
CAN	Canada	English	848	K. Jang
CHN	China	Chinese	201	Yang et al. (1999)
CRO	Croatia	Croatian	722	Marusic et al. (1997)
CZE	Czech Republic	Czech	570	M. Hřebíčková
DNK	Denmark	Danish	1,213	E. L. Mortensen
EST	Estonia	Estonian	1,037	J. Allik
FRA	France	French	1,066	Rolland (1998)
DEU	Germany	German	3,730	F. Ostendorf
HKG	Hong Kong	Chinese	122	McCrae, Yik et al. (1998)
HUN	Hungary	Hungarian	312	Z. Szirmak
IDN	Indonesia	Indonesian	181	L. Halim
ITA	Italy	Italian	67	G. V. Caprara
JPN	Japan	Japanese	681	Shimonaka et al. (1999)
KOR	South Korea	Korean	2,353	Lee (1995)
KOR	South Korea	Korean	593	R. L. Piedmont
MYS	Malaysia	Malay	451	Mastor et al. (2000)
IND(M)	India	Marathi	214	Lodhi et al. (2002)
NLD	The Netherlands	Dutch	1,305	Hoekstra et al. (1996)
NOR	Norway	Norwegian	92	H. Nordvik
NOR	Norway	Norwegian	358	Ø. Martinsen
PER	Peru	Spanish	439	Cassaretto (1999)
PHL(E)	Philippines	English	388	A. T. Church
PHL(F)	Philippines	Filipino	509	G. del Pilar
PRT	Portugal	Portuguese	458	M. P. de Lima
RUS	Russia	Russian	117	T. Martin
ZAF(B)	S. Africa–Black	English	65	W. Parker
ZAF(W)	S. Africa–White	English	209	W. Parker
SRB	Yugoslavia	Serbian	619	G. Kneñevic
ESP	Spain	Spanish	196	M. Avia
SWE	Sweden	Swedish	720	H. Bergman
CHE(G)	Switzerland	German	107	F. Ostendorf
TWN	Taiwan	Chinese	544	Chen (1996)
IND(T)	India	Telugu	259	V. S. Pramila
TUR	Turkey	Turkish	260	S. Gülgöz (2002)
USA	The United States	English	1,389	Costa and McCrae (1992)
USA[a]	The United States	Spanish	73	PAR (1994)
ZWE	Zimbabwe	Shona	71	R. L. Piedmont
New entries				
DZA	Algeria	French	203	Zecca et al. (2013)
AUS2	Australia	English	338	PAR (2008)
ESP(B)	Basque (Spain)	Basque	1,790	Gorostiaga, Balluerka, Alonso-Arbiol, and Haranburu (2011)
BEN	Benin	French	210	Zecca et al. (2013)
BGR	Bulgaria	Bulgarian	1,000	Costa and McCrae (2007)
BFA	Burkina Faso	French	717	Zecca et al. (2013)
BFA2	Burkina Faso	French	470	Rossier, Dahourou, and McCrae (2005)

(continued)

Table 1. (continued)

Code	Country/territory/culture	Language	*n*	Source/reference
COG	Congo	French	220	Zecca et al. (2013)
COD	Democratic Republic of the Congo	French	220	Zecca et al. (2013)
CZE2	Czechia (NEO-PI-R)	Czech	2,288	M. Hřebíčková
CZE3	Czechia (NEO-PI-3)	Czech	1,639	M. Hřebíčková
ERI	Eritrea	Tigrigna	436	Bahta and Laher (2013)
EST2	Estonia (NEO-PI-R)	Estonian	7,292	A. Realo & J. Allik
EST3	Estonia (NEO-PI-3)	Estonian	3,345	A. Realo & J. Allik
FIN	Finland	Finnish	271	J.-E. Lönnqvist
GRC	Greece	Greek	734	Fountoulakis et al. (2014)
ISL	Iceland	Icelandic	655	Jonsson and Bergthorsson (2004)
IND(E)	India	English	188	Piedmont and Braganza (2015)
ITA(R)	Italy	Italian	690	Costa et al. (2007)
ITA2	Italy	Italian	569	Costa et al. (2007)
LVA	Latvia	Latvian	933	Van Skotere and Perepjolkina (2011)
LTU	Lithuania	Lithuanian	317	Žukauskiene and Barkauskiene (2006)
MLI	Mali	French	240	Zecca et al. (2013)
MUS	Mauritius	French	236	Zecca et al. (2013)
MEX	Mexico	Spanish	775	Church et al. (2011)
RUS(N)	Nenets (Russia)	Russian	80	Draguns, Krylova, Oryol, Rukavishnikov, and Martin, (2000)
NZL	New Zealand	English	284	Black, (2000)
NOR2	Norway	Norwegian	620	Martinsen, Nordvik, and Eriksen Østbø (2011)
PHL(F2)	Philippines	Filipino	252	Church et al. (2011)
POL	Poland	Polish	324	Siuta (2007)
ROU	Romania	Romanian	2,200	Ispas, Iliescu, Ilie, and Johnson (2014)
ITA(S)	Sardinia (Italy)	Italian	5,669	Costa et al. (2007)
SEN	Senegal	French	328	Zecca et al. (2013)
ESP2	Spain	Spanish	682	Sanz and García-Vera (2009)
SWE	Sweden	Swedish	676	Källmen, Wennberg, and Bergman (2011)
SWE2	Sweden	Swedish	766	Källmen et al. (2011)
SWE3	Sweden	Swedish	536	Källmen, Wennberg, Andreasson, and Bergman (2016)
CHE(F)	Switzerland	French	1,090	Rossier et al. (2005)
CHE(F2)	Switzerland	French	1,787	Zecca et al. (2013)
TUN	Tunisia	French	240	Zecca et al. (2013)
GBR	The United Kingdom	English	1,150	Lord (2007)
USA(B)	The United States, Baltimore Longitudinal Study of Aging	English	1,944	Terracciano, McCrae, Brant, and Costa (2005, Appendix B)

Note. PAR = Psychological Assessment Resources.
[a]Omitted from further analyses.

to 100 years (Terracciano, McCrae, Brant, & Costa, 2005, Appendix B), as a replication study for the United States.

In total, data reported in this article are based on the self-descriptions of 71,870 participants from 76 samples and 62 different countries or cultures and 37 different languages.

Standardization and Equivalence

McCrae (2002) presented mean scale values as *T*-scores: From each raw mean score, the mean value of the scale in the American normative sample (Costa & McCrae, 1992) was subtracted and the obtained difference was divided by the standard deviation. These standard scores were multiplied by 10 and added to 50 to yield *T*-scores. Because of systematic age and sex differences, different norms were used for males and females dependent on their age group. Data of college-age (18-21 years old) respondents were normalized separately from adults over 21. An unweighted average of these four separately standardized scores represented each sample. The same procedure was used to convert the new data for each county/culture to *T*-scores, again using 1992 American NEO-PI-R norms.

NEO-PI-3 data were available from Czechia and Estonia; it is meaningful to include them in these analyses only if the NEO-PI-3 is equivalent to the NEO-PI-R. Eleven of 30 facet scales are unaltered, and thus must be equivalent. McCrae, Costa, & Martin (2005) reported small raw score differences (0.17-1.19 points) between NEO-PI-R and NEO-PI-3 for 14 of the 19 revised scales. De Fruyt and colleagues (2009) compared means across the two version in a multinational study ($N = 5{,}109$) of observer ratings. The median absolute difference for the 16 facet scales that showed significant effects was $d = .08$. These results suggest that version differences are minor in magnitude and that data from the NEO-PI-R and NEO-PI-3 can be regarded as equivalent for the purpose of comparing mean profiles. Indeed, the correlation between NEO-PI-R and NEO-PI-3 mean scores for Czechia and Estonia was .96 in both the cases indicating that the shape of profiles changed only slightly. However, we retained NEO-PI-R and NEO-PI-3 data as separate samples in subsequent analyses.

Results

Size of Cultural Differences

We started our analysis with the observation that personality differences across countries and cultures are surprisingly small. Out of 2,280 subscale *T*-scores (30 subscales by 76 samples), only 40 (1.75%) were smaller than 40 or larger than 60. This means that in more than 98% of all cases, the differences from the 1992 American norms were smaller than one standard deviation. We also computed the standard deviation of the mean values across all 76 samples. The smallest cross-cultural variation (2.57) of the mean values was on E2: Gregariousness and the largest was on O6: Values (5.53). The average standard deviation across all 30 subscales was 3.46 or about one third of the within-sample standard deviation, which for *T*-scores is equal to 10. This is very close to a previous observation that the standard deviation of personality trait scores at the country (aggregate) level is about 3 times smaller than the standard deviation of individual-level scores within countries or cultural groups (Allik, 2005). It is important to mention that sizes of the standard deviations of the NEO-PI-R/3 subscales are generalizable across countries/cultures (Allik et al., 2010). Thus, it is irrelevant which sample's standard deviation we are talking about. To get the ratio in terms of variances, we need to square the standard deviations. The observed variance between samples were approximately 8.5 times (100:11.8) smaller than variances within each sample. This signifies that differences in personality between countries or cultures are small relative to interindividual variation.

Are there differences in the cross-culture variance across the five factors? We found that the standard deviations of the sample mean values were approximately in the same range from 3.1 for Extraversion to 3.8 for Agreeableness. An ANOVA revealed that differences in variance between the five factors were insignificant: $F(4, 25) = 1.83$, $p = .135$.

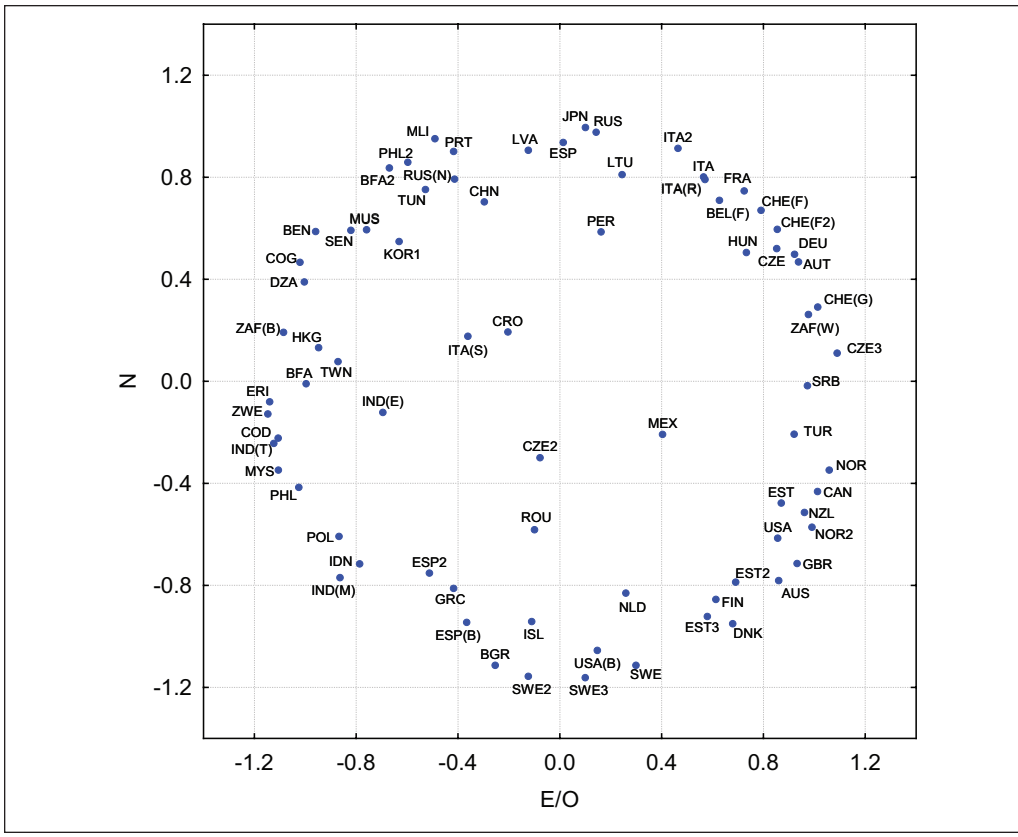

Figure 1. Multidimensional scaling plot of 76 samples.

Geographical Patterning of Personality Profiles

Figure 1 shows the multidimensional scaling plot for the personality profiles reported in the appendix. Labels for the countries are according to three-letter country codes (ISO 3166-1) with suffixes if it is necessary to differentiate various versions or languages. The correspondence between country codes and respective samples is given in Table 1. Before computing similarities between profiles, the data presented in the appendix were normalized one more time. Each mean across all 75 samples was put equal to zero with standard deviation one. To replicate the previous study (Allik & McCrae, 2004), similarities between personality profiles was defined as 1 − Pearson's *r*, where the correlation was computed across normalized scores for all 30 facets. The matrix of similarities was analyzed with a nonmetric multidimensional algorithm which attempts to reproduce the rank-ordering of the input similarities (Guttman, 1968). Although two dimensions were not enough (stress was .23) for representing all similarities between profiles, the first two dimensions still represented the largest portion of variance that could be explained. The configuration of the first two dimensions did not change substantially when additional dimensions were added. The coordinates of the plot were rotated into a position in which the horizontal axis correlated $r = .68$ with the scores of Extraversion (also with Openness $r = .71$) and vertical axis with Neuroticism ($r = .72$). Thus, as a mnemonic, "North" in the figure is associated with N (Neuroticism) and "East" with E (Extraversion) in addition to O (Openness).

To observe how addition of new samples affected coordinates of previous entries (Allik & McCrae, 2004), we compared coordinates of the previous entries (36 − 1) with and without these

41 new samples. The spatial configuration of the previous samples did not change very much after adding 41 new samples because the horizontal and vertical coordinates before and after addition were highly correlated .99. Thus, we are apparently talking about relatively universal coordinates which are able to accommodate all 76 samples.

Previous studies have shown that when individuals are compared based on their genetic similarities, the genetic plot often accurately mirrors the geographic distribution of individuals. For example, the map of Europe can be deduced from genetic similarities of Europeans (Nelis et al., 2009; Novembre et al., 2008). However, it is obviously impossible to reproduce a geographic map of the people's habitat based on similarities between personality profiles alone. Nevertheless, the plot of countries in Figure 1 replicates our previous configuration in many relevant details. As we demonstrated above, the initial samples (Allik & McCrae, 2004) retained their positions on the plot. For example, Croatians and Peruvians still gravitated toward the center of the circle and Americans are very close to Canadians as Germans are to Austrians. Analysis of the initial set of 36 countries/cultures suggested a clear contrast between European cultures (including North-Americans) on one hand, and African and Asian cultures on the other. At large, European cultures tend to score high on Extraversion and Openness (E/O) while African and Asian cultures gravitate toward the opposite pole, Introversion and Closeness. After adding a substantial number of African cultures and some new European cultures to the present analysis, the original distinction was preserved in the new plot, however, with some exceptions. Although Asian and African countries/cultures leaned toward the left hemifield, few European countries such as Poland (POL), Greece (GRC), and the new Spanish version (ESP2) also landed on the left side of the plot.

It is important to remember that similarities/differences shown in Figure 1 are computed based on the distinctive profiles (Allik, Borkenau, Hrebícková, Kuppens, & Realo, 2015; Borkenau & Zaltauskas, 2009; Cronbach, 1955; Furr, 2008). They show how much the mean of each sample is above or below the average score of all 75 samples on each trait. Besides the contrast between European and African Asian countries/cultures, it is possible to notice lesser groupings. For example, all English-speaking countries such as Australia, Canada, Great Britain, and New Zealand are located in the lower right (low N and high E) corner of the plot. Their neighbors are Scandinavian countries—Denmark, Finland, Iceland, Norway, and Sweden. In addition to Anglophonic and Nordic countries, three other countries belong to this cluster. It is perhaps not surprising to discover the Netherlands in the same cluster, but it was unexpected to see Bulgaria and Estonia also close to this group. President Toomas-Hendrik Ilves of Estonia set the goal for his country in his prominent speech at the Swedish Institute of Foreign Affairs on December 14, 1999.[1] He called for Estonia to become a "boring Nordic country." Although locations of Estonian samples—EST, EST2, and EST3—have changed over time (EST3 data were collected most recently), they are still intermingled with Scandinavian countries. We have no good explanation why Bulgaria is closer to Anglophonic and Scandinavian rather than other Slavonic nations such as Serbia or Croatia. However, it is remarkable that Bulgarian data were collected, unlike many others, from a randomized representative sample.

All German-speaking countries are located in the upper right (high N and high E) quadrant together with Czechs, Hungarians, Italians, and Frenches. Interestingly, all new entries from Africa—Benin, Burkina Faso, Congo, Democratic Republic of Congo, Mali, Mauritius, Senegal, and Tunisia—occupied positions in the high-left (high N and low E) quadrant close to other African countries. Although Tigrigna (ERI) translation had low reliability of some translated scales and the factor structure only vaguely reproduced the original one (Bahta & Laher, 2013), its location was still close to other African personality profiles. Interestingly, like Peru (PER) from the initial set of samples, Mexico (MEX) occupied an intermediate position in the center of

the circle of countries/cultures slightly gravitating toward European and other North American countries.

There were also three waves of data collection for Czechia—CZE, CZE2, and CZE3——which are located close to an area occupied by Germany, Austria, Belgium, Switzerland, and France. The second sample from Norway (NOR2) landed on a position that is not very far from the first sample (NOR). Interestingly, Latvia and Lithuania, two newcomers, landed on the map very close to Russia. Although in the national character stereotypes they oppose themselves to Russians (Realo et al., 2009), their objectively assessed personality traits show very little differences from the average personality traits of Russians. The personality profile of Sardinians—ITA(S)—was closer to the center of the circle than the location of other Italian samples.

Unexpectedly, Poland's position was not in vicinity of its geographic or linguistic neighbors but in the neighborhood of rather distant countries such as Philippines and India. New data from Spain (ESP2; Sanz & García-Vera, 2009) were located in a considerable distance from the position of the previous Spanish version, much closer to the position which is occupied by the Basque version of the NEO-PI-R (Gorostiaga et al., 2011). As a matter of fact, the distance between the first (ESP) and the second (ESP2) Spanish samples is one of the largest among all possible distances in the plot. How to explain disparity between these two versions? The authors of the new Spanish adaptation of the NEO-PI-R (Sanz & García-Vera, 2009) maintain that previous commercially available translations were developed in the personnel selection context. Unlike previous adaptations, this new one recruited volunteers from the Spanish general population who expectedly scored significantly higher on Neuroticism and lower on Conscientiousness subscales than previous participants who were possibly influenced by socially desirable responding (Sanz & García-Vera, 2009, Table 4). If sampling can explain significant disparity in locations of these two adaptations, then it serves as an illustration of how small, procedural differences are more substantial than cross-cultural differences themselves.

Discussion

When McCrae, Terracciano and 79 Members of the Personality Profiles of Cultures Project (2005) represented other-rated NEO-PI-R profiles across the 51 cultures on a two-dimensional plot of similarities-dissimilarities of the profile's shape (see Figure 2 in that study), the observed configuration resembled in general those reported by Allik and McCrae (2004, Figure 2) for self-ratings across 36 cultures. The horizontal (Extraversion) coordinates of 26 overlapping countries/cultures were strongly related ($r = .69$, $p < .001$), but the vertical (Neuroticism) coordinates did not reach statistical significance. In part, this appears to be due to the shift of the three German-speaking cultures from the top of the self-report plot to the bottom of the observer-rating plot (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005). It is not clear why German-speaking people would perceive themselves as higher in N than they perceive their compatriots. Studies have shown that the other-perspective is only slightly different from the self-perspective and if these differences exist, they are universal (cf. Allik et al., 2010). However, this study confirmed that after addition of some new countries/cultures, German-speaking participants still stand higher on N than, for example, English-speaking cultures.

It is generally agreed that the world's happiest people live in Denmark, Switzerland, and Iceland (Helliwell, Layard, & Sachs, 2016). How do we know this? Because, among other things, a large number of people in a variety of countries were approached and asked to answer questions such as, "How happy are you?" After that, answers were aggregated and the mean value across these answers was computed for each country. It is generally believed that these country averages represent more or less accurately how happy people are in their respective countries. Analogously we can determine religiousness of people by asking, "How important is God in your life?" Once

again, we expect that mean scores of these answers represent average religiousness of each country or cultural group reasonably well.

Personality questionnaires such as the NEO-PI-R/3 ask likewise about people's feelings, thoughts, habits, and values. When all personality ratings are aggregated, the country mean scores on personality traits are found. Unlike measures of happiness and religiousness, as stated above, personality averages are often treated with suspicion (Heine et al., 2008; Meisenberg, 2015; Perugini & Richetin, 2007). Indeed, some country rankings on personality traits look very puzzling (Allik & Realo, 2016) and they correlate with some external variables in a paradoxical manner (Heine et al., 2008; Mõttus et al., 2010). Perhaps personality questionnaires have limited reliability and validity when used at the level of country averages (Meisenberg, 2015), this new analysis of NEO-PI-R/3 aggregate scores provides another explanation. Cross-country and cross-cultural differences in personality are very small compared with within-sample differences. Differences in personality between aggregate personality scores of countries/cultures are about 8 times smaller than differences between any two individuals randomly selected from the same sample. Because differences are small, it is difficult to establish "true" ranking of these countries/cultures on these traits. To establish stable rankings considerably larger samples than usual are required. The situation is probably similar to the field of genetics, where genome-wide association studies require much larger sample sizes than previously supposed to achieve adequate statistical power (Hong & Park, 2012).

It could be argued that observed human differences, including those for neo-personality variables, are small in general. However, this view is unsupported because, for example, country-level mean differences in psychometrically measured intelligence and educational attainment are substantial and they share a common positive manifold (Lynn & Vanhanen, 2006; Rindermann, 2007). As another example, the *World Value Survey* (WVS; 2005-2008), which collected answers from 82,992 participants in 57 different countries asked among other questions, "How happy are you?" and "How important is God in your life?" (World Values Survey Association, 2014). Interestingly, differences between countries in their happiness were 7.6 times smaller than the typical interindividual variance of happiness within each sample. It is not very surprising that happiness question behaves like a personality item because positive emotions seem to form a core of one of the basic personality traits—Extraversion (Lucas, Diener, Grob, Suh, & Shao, 2000). In contrast, differences between countries in the perceived importance of God are huge compared with personality traits and happiness. The ratio of country-level variance to the mean within-country variance is only 1.28. This indicates that differences between means of any two randomly selected countries in the importance of God in people's life is practically as large as the difference between any two individuals who are living in the same country. Thus, there could be substantial differences between countries on some constructs—but personality traits are not among them.

The relatively small size of cross-cultural differences in personality may be a nuisance for researchers, who attempt to establish these differences, but it is good news for clinical psychologists and test developers. The development of culture-specific norms for a proper psychological assessment of both normal and psychiatric samples is a laborious task. However, the relatively modest size of cross-cultural differences may imply that personality is indeed universal, and that culture has a relatively small impact on the mean scores. It may be so that a reasonable equivalence of personality scores across cultures can be achieved with less efforts than it was initially thought (Allik, 2005).

Considering all possible sources of error—translation, sampling, response biases, and so on—it is perhaps surprising that despite the overlap, we replicated several features of the original geographic patterning (Allik & McCrae, 2004, Figure 2). New and replication samples landed, in most cases, on positions that could be expected based on the previous studies.

Although a clear contrast of European and American cultures with Asian and African cultures, which was conspicuous in the initial sample of 36 cultures, was more blurred, a general clustering was largely preserved. As was noted above, it seems that Scandinavian and Anglophonic countries (in addition to Dutch and Estonians) occupy territory in the plot, reflecting low Neuroticism but high Extraversion (−N+E). If we use Eysenck's rules on how to translate an ancient temperament typology—choleric, melancholic, phlegmatic, and sanguine—into personality trait terminology (Brand, 1997), then we are obliged to conclude that this particular group of countries can be characterized as sanguine. Following the same logic, all German speakers and Turks should be classified, on average, as choleric (+N+E) but most African cultures—such as Benin, Congo, and Senegal—are characteristically melancholic (+N−E). Although melancholy has been suggested as a national trait of Russians (Allik et al., 2011), they are not located in that quadrant. After these examples, the relevance of Eysenck's typology seems to be problematic, at the country level of analysis at least. Very few researchers, for instance, would consider Germans, Swiss, and Austrians as exemplary choleric. Besides, even experts in cross-cultural psychology were unable to judge the ranking of countries or cultures on objectively measured personality traits (McCrae, 2001). Even the collective wisdom of a large number of lay people is not helpful in this regard because national character stereotypes rarely converge with assessed personality traits (Allik, Alyamkina, & Meshcheryakov, 2015; McCrae, Terracciano, Realo, & Allik, 2007; Realo et al., 2009; Terracciano, Abdel-Khalek, et al., 2005).

Although the personality map (Figure 1) resembles Inglehart–Welzel's cultural map (Inglehart, Basanez, Diez-Medrano, Halman, & Luijkx, 2004; Welzel, 2013) in some details, their similarity is far from certain. For instance, Anglophonic countries tend to group into a single cluster in the cultural map; personality profiles of English-speaking countries do the same. However, what is completely absent in the personality map is the distinction between Protestant and Catholic Europe. Even Baltic countries do not form a coherent group based on their personality profiles. Latvians and Lithuanians locate closer to Russia and Japan while Estonians are more similar to Scandinavian personality profiles. According to the mean personality profiles, it is impossible to differentiate African profiles from Asian ones. There is also no clear borders between Muslim and Buddhist personality profiles. Summarizing, the clustering of personality profiles seems to be unlikely inspired by cultural differences as they are captured in the cultural map produced by Inglehart and Welzel. In any case, it opens, one more time, an intriguing question—how are personality and cultural dimensions linked to each other (Hofstede & McCrae, 2004)?

One indicator of the validity of country/culture level mean scores is the correlations found between rankings of samples on the principal axes of N and E/O and various socioeconomic indices (GDP, Human Development Index, Gini index) or, as we already said above, cultural (Hofstede's or Inglehart–Welzel value dimensions) variables (Allik & McCrae, 2004, Table 2). For example, the ranking of 36 countries on the horizontal (E) axis was strongly correlated with their ranking on Hofstede's individualism dimension and the Human Development Index while the ranking on the vertical (N) axis was correlated with Hofstede's uncertainty avoidance ranking (Allik & McCrae, 2004, Table 2). These correlations suggest that personality profiles and cultural dimensions may be related to each other (Allik & McCrae, 2004). However, we deliberately abstained from testing how socioeconomic or cultural variables are related to the extended set of profiles and their two-dimensional representation in the present analysis. All mean values of 30 NEO-PI-R/3 subscales for 62 countries/cultures and 37 languages are now available in the appendix and interested colleagues can use these data for testing their own theories.

Appendix

The Mean Normalized NEO-PI-R/3 Scores for 76 Samples.

CODE	N1	N2	N3	N4	N5	N6	E1	E2	E3	E4	E5	E6	O1	O2	O3	O4	O5	A1	A2	A3	A4	A5	A6	C1	C2	C3	C4	C5	C6	N	E	O	A	C
AUT	52.5	51.6	50.7	51.8	50.7	53.4	48.9	52.2	48.5	49.2	44.1	53.0	58.1	58.0	55.8	54.1	54.0	46.0	43.0	45.6	46.3	46.4	53.8	47.2	47.4	46.7	49.4	43.7	47.6	52.9	48.4	59.1	48.2	46.7
BEL(F)	52.4	50.6	54.9	50.8	51.0	53.0	43.3	52.7	46.7	48.8	47.9	50.5	52.8	52.8	50.2	49.3	48.6	47.7	48.9	44.7	46.4	53.6	53.8	43.8	47.2	48.7	48.5	46.1	49.1	53.0	47.7	51.8	50.0	46.6
CAN	50.4	49.4	50.5	50.8	50.7	48.9	50.4	50.2	49.7	51.3	51.3	52.5	52.0	51.6	51.9	49.5	50.4	51.6	52.4	53.7	50.1	48.9	52.5	50.7	49.3	49.8	47.5	48.3	50.8	50.5	51.7	51.6	51.9	49.2
CHN	49.7	54.1	54.0	54.9	47.2	56.3	45.7	53.2	46.4	49.3	46.8	45.3	45.8	53.6	44.7	43.1	47.6	50.0	48.4	41.7	40.9	47.2	54.2	44.0	47.7	50.5	49.7	47.2	57.2	53.1	44.5	48.3	47.8	50.3
CRO	50.5	52.2	52.1	51.8	46.7	50.5	43.0	49.6	45.3	51.7	44.7	48.0	48.9	53.2	47.7	44.5	49.7	45.5	46.2	47.6	47.0	48.5	50.6	47.6	50.2	51.5	54.6	48.5	51.8	52.8	45.1	49.0	47.5	53.2
CZE	51.1	51.3	51.9	49.0	52.0	59.9	50.5	48.3	47.9	47.8	42.4	52.3	52.4	52.0	51.6	53.7	49.8	41.0	51.7	48.3	48.1	51.0	50.1	40.3	47.7	50.1	49.7	45.2	49.8	54.2	47.4	52.3	50.7	47.5
DNK	46.4	44.9	49.2	48.4	49.8	47.6	49.5	55.9	48.0	56.8	47.1	52.2	47.6	46.8	47.4	51.5	46.4	54.2	52.7	48.6	50.6	51.2	51.5	48.2	48.7	50.6	48.5	49.4	48.5	46.5	52.8	46.5	52.0	47.5
EST	49.0	45.7	49.9	48.7	50.1	44.8	49.1	48.0	51.5	52.0	50.3	51.3	54.4	53.4	53.9	49.3	50.1	52.1	46.8	45.0	46.9	55.3	56.6	44.6	50.3	52.4	50.2	49.6	50.6	49.7	49.9	52.6	50.8	49.6
FRA	55.1	51.2	54.6	52.1	51.9	53.7	48.1	49.2	46.7	50.5	45.4	49.0	54.1	52.7	50.9	53.8	52.7	43.0	50.1	48.9	49.8	55.4	54.7	42.1	48.3	49.2	48.2	44.7	48.0	55.4	47.3	54.1	52.1	47.4
DEU	51.6	50.8	51.3	52.4	50.7	54.1	47.2	51.1	48.4	49.9	41.5	51.4	54.7	56.9	54.3	54.9	50.9	46.2	44.8	44.7	48.1	46.7	54.1	45.3	48.7	46.7	48.2	44.6	47.0	52.8	47.3	56.7	49.1	46.7
HKG	53.1	48.4	52.8	55.2	46.0	59.2	45.0	43.7	43.9	45.5	36.5	40.1	45.6	52.1	43.6	47.0	46.6	48.6	55.4	40.7	57.4	48.1	52.4	40.3	48.6	48.6	48.7	48.7	53.4	53.3	37.6	49.2	54.6	49.2
HUN	49.8	50.6	53.7	51.1	50.4	53.9	46.2	50.2	47.4	51.0	48.6	49.1	53.3	56.4	53.4	48.9	52.6	45.6	47.0	48.4	47.2	49.3	47.0	42.5	51.8	51.2	50.3	45.8	49.5	53.8	47.1	53.7	47.9	50.0
IND(M)	48.9	44.9	49.3	48.1	39.1	47.2	44.7	47.1	43.1	46.8	37.0	50.5	40.8	57.9	47.4	48.9	53.2	54.7	56.7	47.1	54.2	47.7	56.2	47.7	55.5	54.0	55.0	48.8	55.1	49.1	40.7	51.4	56.7	55.7
IND(T)	47.9	50.7	55.2	50.9	40.8	53.8	45.9	50.0	41.8	48.8	48.4	44.4	34.6	54.0	40.9	44.5	50.9	51.6	54.5	47.1	53.9	52.2	60.5	43.8	52.7	52.2	53.6	49.0	56.6	52.3	43.5	44.0	55.9	54.0
IDN	48.3	45.2	49.2	49.1	45.5	52.6	46.6	48.8	46.8	46.6	45.0	47.6	46.5	53.9	45.8	51.2	49.6	52.2	52.1	44.8	52.3	50.7	46.3	42.0	52.1	49.2	54.3	45.9	56.4	48.6	43.3	49.9	51.9	50.3
ITA	55.1	53.8	53.8	50.1	52.4	55.4	47.6	50.8	48.2	52.6	44.3	46.8	54.1	56.4	49.8	49.9	49.2	44.6	52.9	48.1	43.6	49.8	48.9	44.1	45.0	51.3	49.3	48.2	51.9	55.6	46.6	52.6	48.9	50.4
JPN	56.0	52.4	56.7	53.5	52.3	62.6	41.3	47.2	45.3	45.4	44.5	46.0	52.2	52.6	48.4	51.2	49.2	47.9	49.7	35.9	51.2	46.4	44.7	34.9	45.6	43.2	45.9	39.8	48.0	55.3	41.7	51.7	47.7	42.6
KOR1	53.1	50.0	54.6	56.7	45.9	57.3	41.3	48.5	46.0	45.6	40.3	43.0	48.4	52.9	46.5	47.3	48.7	51.2	52.1	43.2	50.4	46.7	53.3	42.1	47.6	52.8	47.9	44.9	52.5	53.6	40.0	51.4	52.3	48.8
MYS	52.3	46.4	53.0	57.6	46.0	51.5	45.1	45.9	46.9	45.1	38.6	47.8	42.2	49.3	43.8	52.1	49.9	51.1	54.6	46.5	57.4	53.0	64.6	44.9	56.3	53.2	55.0	44.5	56.9	54.2	42.5	46.6	58.5	54.2
NLD	48.5	45.5	50.9	47.9	48.6	48.2	43.9	49.3	46.9	47.6	40.1	49.3	51.4	54.1	50.5	54.2	51.0	51.5	51.9	45.5	51.5	54.0	57.9	45.6	48.7	52.5	49.6	50.0	51.2	48.6	43.9	55.7	54.6	48.6
NOR	47.3	46.5	49.6	47.7	54.7	47.7	47.5	56.6	50.7	53.1	50.7	54.4	52.9	50.7	50.1	53.2	49.6	51.5	50.1	48.6	48.5	49.7	52.8	47.8	48.2	49.0	48.8	45.8	48.6	47.4	53.6	51.5	49.9	45.7
PER	53.5	47.7	51.5	49.5	48.9	52.8	45.0	48.7	49.6	46.7	45.8	48.7	50.6	52.3	45.4	47.0	49.6	45.5	48.1	45.4	49.6	46.0	51.9	47.8	46.5	49.4	53.1	44.8	50.9	50.8	45.5	50.0	48.6	49.0
PHL	50.4	47.4	51.4	53.4	46.7	51.7	45.8	48.7	49.6	45.7	44.3	48.0	46.0	54.8	46.4	51.5	52.3	49.5	50.4	46.9	54.9	49.7	53.6	47.1	50.7	49.0	52.4	49.4	54.7	50.8	43.8	51.8	52.9	51.5
PRT	56.9	51.0	54.5	52.8	49.8	54.8	47.2	48.8	45.7	47.3	50.0	46.0	49.1	54.0	47.4	51.1	47.6	46.1	47.1	45.6	52.3	52.9	52.9	44.9	50.8	50.2	51.7	46.4	51.4	55.5	46.3	49.2	51.2	50.3
RUS	51.7	51.8	54.1	54.0	49.5	58.6	45.9	48.8	47.6	48.0	46.4	47.2	49.8	53.6	47.4	50.6	46.8	47.0	43.2	41.3	46.9	49.6	46.0	40.6	50.2	46.0	46.8	43.8	50.3	53.7	45.1	49.0	46.7	46.5
SRB	49.7	49.6	48.8	47.1	50.5	49.3	47.6	52.5	46.9	51.2	47.1	49.0	53.5	59.1	54.5	51.2	53.9	47.1	49.5	48.9	46.4	46.0	49.5	46.9	50.3	51.3	54.2	47.7	51.0	51.1	47.6	56.0	48.4	51.7
ZAF(B)	49.0	49.3	53.3	52.4	44.5	50.3	44.7	48.0	46.6	43.6	42.8	46.3	45.0	50.7	42.0	48.2	49.9	44.9	48.4	41.9	54.8	49.9	50.2	44.2	48.9	45.7	48.1	47.0	53.5	49.1	41.4	47.7	50.4	47.9
ZAF(W)	49.1	50.4	53.1	51.6	50.7	49.9	49.2	48.6	48.1	48.8	47.0	49.5	52.4	54.6	53.3	52.7	52.3	47.5	52.7	48.1	50.7	52.1	52.3	45.4	46.8	48.5	47.3	47.1	50.1	51.9	47.2	54.4	52.2	47.9
ESP	58.6	50.1	56.5	54.0	52.0	57.6	43.3	50.6	45.6	50.1	48.3	49.2	52.4	51.1	47.7	44.6	45.4	47.0	43.8	45.8	44.8	53.1	57.2	44.6	48.1	47.8	51.4	44.3	51.8	57.1	48.3	48.0	49.4	48.3
SWE	45.6	45.5	49.8	46.3	47.8	49.6	47.8	54.8	46.9	46.1	45.0	53.4	48.4	45.6	48.4	49.7	43.9	52.9	51.8	51.7	52.7	54.6	59.1	48.8	49.8	52.7	42.7	47.0	54.5	46.3	50.6	46.0	56.5	45.7
CHE(G)	51.0	50.6	50.1	53.1	51.6	53.4	47.3	51.1	49.8	52.8	46.2	52.5	57.0	57.3	56.4	55.4	54.8	46.0	44.7	46.5	45.1	46.7	51.5	48.9	50.6	48.6	50.6	45.6	48.7	53.2	48.5	58.9	47.0	49.6
TWN	51.1	46.4	52.6	53.9	45.4	56.0	46.1	46.5	45.6	43.4	41.4	46.8	46.2	54.7	47.4	47.3	46.2	50.4	51.3	45.4	56.9	45.6	53.1	42.5	47.3	48.9	49.7	45.7	54.4	51.5	42.0	50.2	54.5	48.1
TUR	47.9	50.7	50.9	53.1	49.0	51.6	47.7	52.8	48.8	50.7	50.2	53.1	49.8	53.0	50.5	52.0	47.4	47.2	53.5	51.6	45.5	44.3	48.0	49.5	47.3	50.2	52.0	48.2	51.4	50.9	50.3	50.8	48.5	50.4
USA	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
ZWE	48.5	49.5	53.4	51.2	44.0	53.9	42.4	48.9	46.3	48.4	43.8	48.2	41.5	50.7	41.0	55.2	48.1	44.6	52.0	40.1	54.5	48.7	56.2	40.9	53.1	49.3	55.3	48.1	55.2	50.9	42.3	47.0	51.0	51.8
DZA	54.3	53.9	56.2	54.0	46.7	54.2	44.5	46.2	46.0	49.8	47.0	45.3	45.7	51.3	45.6	48.5	50.3	44.6	52.0	40.1	54.5	48.7	56.2	40.9	53.1	49.3	55.3	48.1	55.2	54.2	45.0	45.4	50.7	49.9
AUS	43.2	42.0	43.9	43.4	47.4	39.3	55.8	54.8	58.2	53.7	52.3	57.3	48.9	49.2	51.1	58.1	54.8	40.6	53.3	50.7	50.6	51.5	56.0	43.1	51.0	49.9	52.7	46.8	53.9	41.0	57.9	53.9	54.0	57.0
ESP(B)	54.0	49.9	51.2	52.6	45.1	55.7	44.9	53.5	46.0	52.4	46.9	50.9	50.9	48.1	47.2	47.8	45.6	54.5	51.7	56.6	51.8	50.4	51.3	57.2	52.7	55.7	56.9	55.7	54.0	51.9	48.8	47.3	52.5	47.4

(continued)

Appendix (continued)

CODE	N1	N2	N3	N4	N5	N6	E1	E2	E3	E4	E5	E6	O1	O2	O3	O4	O5	A1	A2	A3	A4	A5	A6	C1	C2	C3	C4	C5	C6	N	E	O	A	C
BEN	52.5	52.6	55.7	57.2	44.9	51.1	45.9	52.3	45.7	44.0	49.6	48.0	43.3	54.9	45.0	54.1	52.2	47.7	55.1	46.2	51.5	50.2	59.7	43.9	49.1	49.1	48.4	46.1	51.3	53.1	47.0	47.8	49.5	52.0
BGR	45.3	42.2	44.2	48.2	38.3	42.3	51.4	54.5	50.8	53.1	43.5	47.8	40.9	54.3	45.3	48.4	49.4	39.8	49.6	46.2	55.3	49.4	59.5	46.2	53.4	49.4	54.5	47.5	57.0	41.4	50.4	46.6	53.6	59.5
BFA	58.4	56.2	59.0	59.8	48.2	58.3	45.3	50.5	45.6	44.3	48.7	43.8	47.0	53.9	43.3	52.2	51.7	53.2	53.9	53.8	51.9	53.2	47.3	52.4	56.1	59.3	58.9	57.7	57.9	59.2	44.9	47.8	48.1	47.2
BFA2	57.6	55.0	58.3	59.3	47.4	57.2	45.8	50.5	45.5	44.3	48.4	44.1	46.5	53.2	43.2	51.8	52.1	39.4	46.5	45.5	51.9	51.3	59.6	39.9	49.1	46.6	53.5	43.9	52.9	58.1	45.0	47.6	49.4	48.1
COG	50.9	52.6	55.5	54.2	43.8	50.7	46.3	49.0	51.5	45.8	46.2	46.3	44.1	51.2	41.9	52.1	51.0	40.4	47.6	46.0	52.9	52.0	60.1	40.7	49.9	47.7	53.8	44.7	53.6	51.9	46.7	45.6	51.2	52.9
COD	49.7	52.6	53.4	53.6	43.6	49.9	43.8	50.2	50.9	46.4	44.1	43.9	43.7	49.4	39.0	49.4	49.8	42.0	51.9	47.7	54.8	50.4	58.1	47.0	53.9	50.1	55.7	47.8	58.3	50.9	45.3	42.9	47.4	52.9
CZE3	50.2	48.9	50.0	47.8	51.2	51.0	51.6	48.1	51.1	48.9	42.2	51.3	51.5	50.6	50.6	55.1	50.7	41.4	51.1	46.0	47.5	50.5	49.5	39.3	47.5	48.1	50.0	44.5	48.8	49.8	48.3	52.2	47.1	49.1
CZE2	51.3	51.1	52.7	49.5	51.8	54.6	49.9	49.3	49.4	48.2	42.9	52.5	51.9	51.9	50.0	53.8	49.1	41.5	50.0	46.2	54.4	46.3	50.8	50.0	53.5	48.5	54.5	48.2	59.4	49.8	48.1	51.4	46.5	45.3
ERI	47.1	46.6	53.0	53.8	40.1	53.2	41.1	44.7	41.8	40.9	46.9	47.4	38.9	51.1	40.9	46.5	48.5	44.2	50.0	41.6	55.9	54.2	53.7	39.7	54.8	50.9	53.3	44.6	56.4	48.8	40.9	40.5	50.1	50.2
EST3	51.0	51.6	48.1	51.1	48.9	42.2	51.3	51.5	50.6	50.6	55.1	50.7	51.0	42.3	52.3	50.2	46.9	54.8	44.7	53.3	51.5	48.9	49.0	51.7	53.3	51.5	48.9	49.0	51.7	50.2	48.9	50.0	47.8	51.2
EST2	47.7	47.3	48.6	48.8	49.3	46.1	49.3	50.9	52.3	50.7	48.0	48.2	46.5	49.2	48.4	44.8	46.1	42.3	52.3	50.2	46.9	48.8	48.3	43.7	50.9	51.0	50.1	48.2	51.4	50.1	47.8	50.7	49.4	49.7
FIN	48.4	45.8	48.5	49.9	50.4	46.8	47.1	49.6	49.6	52.1	46.6	50.0	52.0	50.4	45.7	54.3	48.4	54.8	50.2	44.4	52.6	47.2	48.5	51.7	52.7	48.7	49.6	49.8	47.4	47.7	48.8	50.1	49.7	50.0
GRC	53.3	50.2	50.7	50.2	46.4	52.8	45.4	50.9	48.9	51.3	42.6	46.5	45.4	50.0	45.5	47.7	45.6	48.3	43.7	50.9	51.0	50.1	48.2	51.4	55.6	53.0	48.1	48.9	53.5	50.9	46.6	45.1	48.8	51.5
ISL	47.6	50.5	50.4	50.8	50.9	50.7	47.9	51.9	45.8	51.0	42.4	50.9	47.9	50.0	47.8	46.5	46.7	43.7	51.5	47.6	50.8	48.8	53.3	45.2	53.1	51.6	52.9	50.1	53.0	50.2	47.6	46.5	55.5	48.9
IND(E)	53.0	52.9	55.8	48.7	47.7	55.7	45.2	48.1	47.4	48.2	47.3	48.5	45.1	55.0	46.9	49.4	48.7	52.1	53.7	50.8	57.9	54.3	52.2	44.0	47.8	55.2	49.9	48.1	50.3	53.3	46.3	47.9	46.6	47.7
ITA(R)	55.1	53.8	53.8	50.1	52.5	55.4	47.6	50.8	48.2	52.6	44.3	46.9	54.1	56.4	49.8	49.9	49.2	44.6	52.9	48.0	43.6	49.8	48.8	44.1	44.9	51.3	49.3	48.2	51.9	55.5	46.6	52.6	48.9	50.4
ITA2	55.8	51.5	54.1	50.2	51.0	56.1	46.0	51.3	47.6	50.7	46.1	46.5	55.3	54.8	49.2	50.7	49.9	42.6	47.9	46.6	43.7	48.8	53.5	42.8	46.0	48.9	48.9	47.9	50.7	55.0	46.9	52.1	48.1	48.7
LVA	54.3	51.4	53.5	52.7	50.5	56.0	44.4	49.5	48.5	48.9	43.8	45.9	50.5	51.1	48.7	47.0	46.0	44.4	49.8	43.6	49.1	46.1	54.4	43.2	49.3	46.4	50.6	48.6	51.8	54.1	45.6	47.3	42.9	46.5
LTU	51.2	51.1	53.3	52.1	47.0	54.9	44.9	50.3	47.3	50.2	47.6	49.3	50.2	52.7	46.3	46.7	45.5	46.1	45.0	41.5	47.1	45.1	47.2	43.3	51.1	46.6	49.5	45.2	47.9	52.2	47.5	47.2	46.5	46.2
MLI	53.6	53.2	53.9	55.4	46.2	53.7	46.9	54.0	48.7	47.9	48.4	46.1	43.0	51.6	43.0	50.2	52.1	48.1	47.9	42.7	47.9	48.3	51.0	41.3	48.9	49.1	47.6	44.9	50.1	53.7	48.3	44.6	46.6	51.5
MUS	53.9	52.7	54.9	51.8	48.3	53.7	46.2	46.6	48.0	50.8	48.0	47.4	47.2	50.7	47.3	48.3	50.5	43.0	46.5	44.7	49.7	48.1	56.4	46.9	49.7	49.5	55.0	48.5	56.6	53.7	46.8	46.9	49.9	49.2
MEX	50.6	49.3	49.2	48.0	48.1	52.0	44.9	51.9	51.5	48.3	54.3	53.1	51.4	53.6	47.5	46.4	52.7	41.5	52.4	45.9	52.1	51.3	57.1	45.2	50.7	49.4	51.9	47.1	52.6	49.4	51.2	50.2	42.4	50.3
RUS(N)	53.4	54.6	54.7	58.6	48.8	59.1	42.7	46.9	44.8	49.5	49.4	43.8	48.9	53.5	41.9	48.1	46.5	44.5	43.7	45.9	46.0	43.0	48.8	48.2	47.1	51.9	54.0	47.3	53.0	56.5	42.3	45.0	40.6	45.6
NZL	46.9	39.5	45.5	47.2	45.1	43.3	54.4	52.4	51.6	52.6	47.7	55.8	43.6	46.8	50.9	55.8	47.7	42.0	39.3	38.3	41.6	49.0	47.2	40.5	52.4	42.8	47.4	45.3	49.2	42.9	53.6	48.9	60.2	55.3
NOR2	48.8	44.7	50.2	46.9	52.9	47.9	48.3	54.0	51.4	56.3	45.9	52.3	51.0	53.4	50.6	55.9	48.9	54.2	53.9	49.2	51.7	50.2	50.4	49.0	48.8	49.0	49.8	48.8	47.7	48.1	52.0	53.3	52.6	48.5
PHL2	55.5	50.5	54.3	56.4	48.7	54.6	45.2	52.5	50.1	46.7	51.3	49.0	49.7	53.7	51.9	54.5	51.7	44.6	45.5	44.8	52.0	47.8	55.9	46.9	50.4	49.1	55.6	47.9	55.2	54.6	49.0	49.3	47.2	51.2
POL	53.6	50.1	55.3	54.9	46.7	56.1	45.4	48.7	45.0	51.7	41.7	45.0	46.1	49.8	44.3	48.4	46.5	55.3	58.4	56.7	58.5	55.5	54.5	52.9	52.3	56.2	54.1	55.7	54.0	53.9	44.5	44.7	47.4	48.0
ROU	49.5	49.9	50.3	50.7	44.6	49.3	46.4	50.0	49.7	50.3	44.2	45.4	46.5	50.6	45.8	48.3	49.2	46.9	49.1	43.3	49.6	52.3	47.5	42.9	51.5	49.6	50.8	47.2	48.0	48.9	46.7	46.7	46.2	50.8
ITA(S)	54.1	50.7	52.9	50.8	47.6	55.1	47.5	53.1	47.0	50.2	46.1	46.0	49.5	50.8	44.9	52.0	45.0	45.9	49.4	44.2	49.2	46.8	49.6	46.0	51.7	50.3	52.1	50.4	52.2	53.2	47.5	46.5	49.7	49.8
SEN	53.6	50.9	54.2	53.5	44.5	49.3	47.7	48.3	47.7	48.8	44.4	46.6	45.9	52.1	43.3	49.1	54.4	44.8	48.7	46.9	45.0	51.6	53.4	42.7	48.6	50.0	50.2	49.2	53.5	51.6	46.2	47.6	54.8	55.0
ESP2	54.2	46.8	51.7	50.2	48.5	51.4	46.0	47.9	48.4	49.6	38.4	49.6	48.6	50.9	46.1	47.2	46.6	49.8	48.8	46.6	50.6	54.0	56.8	46.9	49.6	52.5	52.0	48.8	53.3	50.7	45.1	47.3	51.7	50.7
SWE2	44.7	45.0	49.4	45.6	45.5	48.6	46.6	51.4	46.8	47.4	39.9	50.9	45.9	45.4	47.4	48.8	43.8	53.2	53.8	51.4	54.1	57.0	59.2	49.6	51.3	56.0	44.2	50.3	55.0	45.4	45.9	45.0	57.3	51.3
SWE3	44.8	44.5	50.0	43.6	43.9	47.7	48.1	50.9	49.5	46.3	40.2	54.5	48.5	44.6	50.6	51.2	48.1	52.4	54.4	55.4	52.5	54.6	56.7	53.5	53.1	57.4	47.4	51.5	55.2	53.7	52.2	50.7	52.2	50.0
CHE(F)	55.0	50.8	53.4	51.9	51.9	52.3	48.4	47.4	46.7	50.9	43.8	50.6	54.7	53.0	51.4	53.0	50.5	46.2	51.3	48.0	52.0	53.2	55.6	42.4	47.6	49.8	49.1	46.5	47.8	53.5	47.0	53.6	51.7	46.4
CHE(F2)	54.6	50.5	53.5	52.0	51.8	52.4	49.2	48.4	47.0	51.4	44.3	51.5	54.4	52.9	51.6	52.7	50.7	46.2	51.4	48.2	51.8	53.5	55.9	42.3	47.6	49.8	49.1	46.4	47.8	53.4	47.9	53.4	52.3	46.4
TUN	51.7	52.5	54.1	54.0	47.7	53.8	45.4	48.3	47.5	48.9	48.8	47.8	46.6	52.3	45.3	48.2	48.8	46.6	52.1	49.3	52.0	53.4	56.0	43.0	47.6	49.7	49.3	46.3	47.5	53.1	46.8	45.5	48.0	48.3
GBR	44.3	40.7	43.0	41.7	43.6	38.7	53.1	53.9	58.9	59.0	45.9	54.4	48.3	52.7	52.4	62.7	55.0	39.5	52.4	49.8	48.2	47.8	56.2	42.8	49.7	48.9	53.7	45.2	51.1	39.4	56.1	56.8	54.0	57.6
USA(B)	48.3	48.7	48.0	48.5	48.9	48.4	50.4	50.6	52.8	51.2	48.1	49.9	51.2	53.5	50.6	50.9	51.8	56.6	50.5	53.3	55.1	50.1	50.0	57.0	50.8	56.8	58.9	57.3	53.9	47.8	49.2	53.3	50.3	50.0

Note. N = Neuroticism; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness.

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1. http://vm.ee/en/news/estonia-nordic-country

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