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5 Happiness around the World: A Combined Etic-Emic Approach across 63 Countries

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### **Abstract**

What does it mean to be happy? The vast majority of cross-cultural studies on happiness have employed a Western-origin, or “WEIRD” measure of happiness that conceptualizes it as a self-centered (or “independent”), high-arousal emotion. However, research from Eastern cultures, particularly Japan, conceptualizes happiness as including an interpersonal aspect emphasizing harmony and connectedness to others. Following a combined emic-etic approach (Cheung, van de Vijver & Leong, 2011), we assessed the cross-cultural applicability of a measure of independent happiness developed in the US (Subjective Happiness Scale; Lyubomirsky & Lepper, 1999) and a measure of interdependent happiness developed in Japan (Interdependent Happiness Scale; Hitokoto & Uchida, 2014), with data from 63 countries representing 7 sociocultural regions. Results indicate that the schema of independent happiness was more coherent in more WEIRD countries. In contrast, the coherence of interdependent happiness was unrelated to a country’s “WEIRD-ness.” Reliabilities of both happiness measures were lowest in African and Middle Eastern countries, suggesting these two conceptualizations of happiness may not be globally comprehensive. Overall, while the two measures had many similar correlates and properties, the self-focused concept of independent happiness is “WEIRD-er” than interdependent happiness, suggesting cross-cultural researchers should attend to both conceptualizations.

### 41 **Happiness around the World: A Combined Etic-Emic Approach across 63 Countries**

42 What does it mean to be happy? The answer might depend, at least in part, on cultural  
43 context. Laypeople, scientists, and even governments seek to assess the happiness of nations  
44 around the world. Some investigators ask which countries have the happiest people, while others  
45 seek predictors of happiness at the country or individual level. However, almost all international  
46 studies of happiness rely on measures developed in the West, which may impose inappropriate  
47 conceptualizations, styles, or values (Delle Fave et al., 2016; Diener, Oishi, & Ryan, 2013; Oishi,  
48 2018; Oishi & Gilbert, 2016; Uchida, Norasakkunkit, & Kitayama, 2004). Moreover, empirical  
49 research exploring cultural distinctions in happiness beyond just a few countries (usually two) –  
50 is sorely lacking. The present article, following a combined etic-emic approach (Cheung, van de  
51 Vijver, & Leong, 2011), assesses two measures of happiness, developed in the United States and  
52 Japan, across 63 countries on all of the inhabited continents of the world.

53 Early cross-cultural research usually tested the generalizability of established  
54 psychological measures, almost always developed in the United States, in other cultures. For  
55 example, researchers have assessed the universality of the Big Five personality traits across  
56 multiple countries (De Raad et al., 2010; McCrae et al., 2005). This method is known as the etic  
57 approach. However, the etic approach often overlooks important aspects of a particular culture  
58 because they are not included in the original measure, typically developed within Western  
59 contexts. The emic approach to cross-cultural psychology attempts to compensate for this  
60 problem by developing measures of concepts deemed important to a particular culture, including  
61 non-Western contexts, using a bottom-up approach. While the emic approach is crucial for  
62 comprehensive assessments of cultural attributes, it often emphasizes cultural uniqueness and  
63 lacks widespread applicability outside of the cultural context (Cheung, van de Vijver, & Leong,

64 2011). The combined etic-emic approach attempts to utilize the benefits of both approaches, by  
65 assessing the generalizability of multiple measures of a similar construct across multiple groups  
66 in culturally distinctive contexts.

### 67 **Cross-Cultural Research on Happiness**

68         The vast majority of research on happiness has originated in WEIRD countries (Western,  
69 Educated, Industrialized, Rich, and Democratic; Henrich, Heine, & Norenzayan, 2010), most  
70 frequently the United States (while many authors distinguish among terms such as happiness,  
71 well-being, positive affect, and life satisfaction, here we incorporate all of these terms under the  
72 common construct of happiness for a more comprehensive review of the literature). Accordingly,  
73 the prevailing conceptualization of happiness is consistent with a historically Protestant, self-  
74 centered worldview that emphasizes personal worthiness and hard work to obtain positive  
75 outcomes (Uchida & Ogiwara, 2013), and sees happiness as a personal achievement rather than  
76 the result of good fortune or context (Uchida & Kitayama, 2009; Uchida, Norasakkunkit, &  
77 Kitayama, 2004). This view further assumes the self is largely independent of others, and thus  
78 one's happiness is independent of others. Additionally, people in Western societies, most notably  
79 in America, apparently enjoy higher levels of emotional arousal (Tsai, Knutson, & Fung, 2006),  
80 which may also reflect historical and modern Christian influences (Tsai, Miao, & Seppala,  
81 2007).

82         In contrast, the East Asian worldview has been described as one in which the self is more  
83 entwined with others, such that personal happiness depends on positive connections in social  
84 relationships (Uchida, Norasakkunkit, & Kitayama, 2004). For example, one study found that  
85 Koreans are more likely than Americans to spontaneously mention the word "family" when  
86 asked what they typically associate with the word "happiness" (Shin, Suh, Eom, & Kim, 2017).

87 Additionally, the Eastern view of happiness prioritizes a lower level of emotional arousal (Tsai et  
88 al., 2006). Lower arousal can encompass both positive and negative emotions, with balance and  
89 harmony being more valued than a high ratio of positive to negative affect (Gotise & Upadhyay,  
90 2018; Uchida & Kitayama, 2009).

91         Previous studies have also found cultural distinctions in predictors and consequences of  
92 happiness (Stavrova, 2019). Self-esteem is often the strongest predictor of happiness in Western  
93 cultures, but this relationship is generally weaker in East Asian cultures (Myers & Diener, 1995).  
94 Relational self-esteem, such as being proud of one's family, is a stronger predictor of subjective  
95 well-being for Chinese students than is personal self-esteem (Du, King, & Chi, 2017). Other  
96 predictors of happiness that vary by culture are contextual events, such as positive daily life  
97 experiences, which are stronger predictors of well-being for East Asians than for Westerners  
98 (Oishi et al., 2007). Lastly, interventions designed to increase happiness can have different  
99 results in different cultures (Shin & Lyubomirsky, 2017). For example, practicing gratitude is  
100 typically associated with increased positive emotions for Americans but may lead to mixed  
101 feelings for Koreans, such as feeling guilt or indebtedness along with love (Layous, Lee, Choi, &  
102 Lyubomirsky, 2013).

103         Overall, evidence from cross-cultural studies on the differences in definitions,  
104 associations, and consequences of happiness suggests previous Western-centered  
105 conceptualizations of happiness are far from universal. Additionally, if the concept of happiness  
106 varies cross-culturally, the method of measuring happiness across cultures must also vary  
107 accordingly. For example, the Eastern conceptualization of happiness as more intertwined with  
108 others may be masked from researchers who only assess happiness using measures developed

109 with a Western, independent focus. Thus, the evidence of cross-cultural differences in happiness  
110 point to a greater need for incorporating more culturally sensitive measures of happiness.

### 111 **Independent vs. Interdependent Measures of Happiness**

112 Despite the widespread acknowledgement of cultural distinctions in the concept of  
113 happiness and the evident need for a measure developed in a non-WEIRD country, emic  
114 (indigenous) measures developed outside of the West have become available only recently. One  
115 such measure, the Interdependent Happiness Scale (IHS), developed by researchers in Japan  
116 (Hitokoto & Uchida, 2014), was designed to encompass the main components of happiness  
117 based on the outlook of individuals in East Asia, specifically Japan. The IHS assesses three main  
118 components: relationship orientation, quiescence, and embeddedness in the ordinariness of  
119 others. Relationship orientation means that one's own happiness is dependent upon the happiness  
120 of others - an important aspect of this dependency comes from interpersonal harmony.  
121 Quiescence comes from an Eastern belief that part of happiness is the absence of negative events  
122 or potential for social disruptions that may hinder a peaceful existence. Embeddedness in the  
123 ordinariness of others comes from the Eastern preference for normality in the sense that everyone  
124 is on an equal level in their success and accomplishments.

125 The Interdependent Happiness Scale (IHS) differs from traditional Western measures of  
126 happiness in both its ideal level of affect and in its lesser emphasis on comparisons with others.  
127 For example, one common measure of happiness developed in the West, the Satisfaction with  
128 Life Scale (SWLS: Diener, Emmons, Larsen, & Griffin, 1985), asks individuals how much they  
129 agree with the statement "The conditions of my life are excellent," implying a high level of  
130 affect intensity. In contrast, the IHS asks if individuals have "any concerns or anxieties" with the  
131 absence of negative affect indicating greater well-being. Likewise, another Western measure of

132 happiness, the Subjective Happiness Scale (SHS: Lyubomirsky & Lepper, 1999), asks  
133 participants to compare themselves to others around them and rate if they are “more happy” or  
134 “less happy.” In contrast, the IHS asks participants how much they agree with the statement that  
135 they are “just as happy as others around them,” incorporating the interdependence of others’  
136 happiness into the measure. The Western conceptualizations of happiness can be defined in terms  
137 of independence while the Eastern conceptualizations of happiness can be defined in terms of  
138 interdependence. Thus, from this point forward, we will refer to self-focused, Western  
139 conceptualizations of happiness as *independent* happiness and Eastern conceptualizations of  
140 happiness as *interdependent* happiness.

141         Little is known regarding how well these two conceptualizations of happiness generalize  
142 beyond the East vs. West dichotomy that seems ubiquitous in cross-cultural research (Oishi &  
143 Gilbert, 2016). Non-WEIRD countries encompass a wide range of diverse cultural values,  
144 religious beliefs, political institutions, and even geographic conditions that can all influence  
145 psychological constructs (Oishi, 2014). These overlapping influences could be expected to affect  
146 the extent to which independent or interdependent concepts of happiness generalize cross-  
147 culturally. For example, Latin America societies and East Asians societies are both seen as  
148 collectivistic, valuing close relationships with others, which would suggest an interdependent  
149 view of happiness. However, one study on cultural differences in ideal affect found Mexicans  
150 prefer higher arousal positive emotions while Hong Kong Chinese prefer lower arousal positive  
151 emotions (Ruby et al., 2012), suggesting the quiescence aspect of the Interdependent Happiness  
152 Scale may not apply in Latin American societies. Assessing a wider range of cultures beyond the  
153 most commonly included Western and Eastern countries will help further test the generalizability  
154 of these two concepts of happiness.

## 155 **The Current Study**

156           The purpose of the present study is to compare and contrast the two cultural  
157 conceptualizations of independent and interdependent happiness in many countries around the  
158 world. Using a combined etic-emic approach (Cheung, van de Vijver & Leong, 2011), we  
159 assessed the Western conceptualization of independent happiness using a measure developed and  
160 widely-used in the United States (Subjective Happiness Scale, SHS: Lyubomirsky & Lepper,  
161 1999) and the Eastern conceptualization of interdependent happiness using the Interdependent  
162 Happiness Scale (IHS), developed in Japan (Hitokoto & Uchida, 2014). While the  
163 Interdependent Happiness Scale (IHS) has been assessed in a number of Eastern and Western  
164 countries (e.g., Kryszewski et al., 2019), a large-scale assessment comparing the measure with a  
165 Western measure of happiness across diverse cultural contexts has yet to be reported.  
166 Additionally, previous cross-cultural research on happiness has typically only compared  
167 Westerners (usually in the US or Canada) with East Asians (most commonly Japan), while  
168 neglecting cultures in Africa, Latin America, the Middle East, and Southeast Asia (Oishi &  
169 Gilbert, 2016). We sought to assess the constructs of Eastern interdependent happiness with a  
170 Western measure of independent happiness across a wide range of 63 culturally diverse countries  
171 to determine the generalizability of the measures both within and outside of the Eastern and  
172 Western contexts.

## 173 **Methods**

### 174 **Participants**

175           Participants ( $N = 15,368$ ; 71% female) were recruited by local collaborators from 63  
176 countries (see Table 1) and were members of their local university and college communities  
177 ( $M_{age} = 21.93$ ). The average sample size across all the countries was  $n = 246$  (range: 50 – 1,366).

- 178 Participants either volunteered or received compensation in the form of extra credit, course  
 179 credit, small gifts, or monetary payment for participation.

Table 1

<i>Demographic Information by Country</i>				
Country	Region	Total N	% Female	Mean Age
Argentina	Latin America	140	79	24.28
Australia	English West	196	76	19.84
Austria	Europe	113	81	21.26
Belgium	Europe	50	84	19.14
Bolivia	Latin America	135	58	21.01
Brazil	Latin America	310	72	23.69
Bulgaria	Europe	152	70	25.02
Canada	English West	304	79	21.85
Chile	Latin America	386	66	21.47
China	East Asia	432	48	22.63
Colombia	Latin America	181	74	21.68
Croatia	Europe	218	65	21.46
Czech Republic	Europe	193	81	22.65
Denmark	Europe	246	79	22.92
Estonia	Europe	293	84	25.88
France	Europe	231	84	22.58
Georgia	Europe	140	80	20.29
Germany	Europe	458	74	24.36
Greece	Europe	225	80	22.57
Hong Kong	East Asia	144	58	18.99
Hungary	Europe	178	60	21.76
India	South Asia	221	50	22.38
Indonesia	South Asia	131	52	21.83
Israel	Middle East	173	61	25.42
Italy	Europe	717	65	21.86
Japan	East Asia	243	62	22.56
Jordan	Middle East	141	81	19.87
Kenya	Africa	139	65	21.17
Latvia	Europe	169	83	24.87
Lithuania	Europe	145	78	20.26
Macedonia	Europe	54	74	21.22
Malaysia	South Asia	230	70	21.52
Mexico	Latin America	247	58	23.85
Netherlands	Europe	301	81	20.14
New Zealand	English West	129	86	19.19
Nigeria	Africa	135	33	24.72
Norway	Europe	159	74	23.89
Pakistan	South Asia	114	50	20.61
Palestine	Middle East	295	83	22.17

Peru	Latin America	74	61	22.66
Philippines	South Asia	337	68	19.69
Poland	Europe	234	83	22.35
Portugal	Europe	157	87	21.77
Romania	Europe	177	57	22.84
Russia	Europe	159	78	21.90
Senegal	Africa	635	47	23.31
Serbia	Europe	185	86	19.72
Singapore	South Asia	136	78	20.93
Slovakia	Europe	148	70	22.41
Slovenia	Europe	123	57	20.59
South Africa	Africa	256	66	22.20
South Korea	East Asia	281	58	22.35
Spain	Europe	419	85	19.73
Sweden	Europe	130	70	†
Switzerland	Europe	755	84	22.35
Taiwan	East Asia	162	77	19.71
Thailand	South Asia	196	77	19.27
Turkey	Middle East	329	68	21.09
Uganda	Africa	93	65	22.63
Ukraine	Europe	244	77	20.62
United Kingdom	Europe	136	89	25.64
United States	English West	1366	67	19.86
Vietnam	South Asia	168	77	19.05
World Average		246	71	21.93

Note: † = Data not available.

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## 181 Measures

182           The analyses presented below stem from the International Situations Project (ISP), a  
 183 large cross-cultural study assessing situational experience, daily behavior, and individual  
 184 differences. Other analyses based on this large and diverse data set have been published  
 185 (Baranski et al., in press; Gardiner et al., 2019; Lee et al., in press) or are in progress, but all  
 186 analyses reported in the present article are new and unique. For an overview of the project,  
 187 including all measures and translations, see [situationslab.com/the-international-situations-](https://situationslab.com/the-international-situations-project)  
 188 [project](https://situationslab.com/the-international-situations-project). Only measures included in the present analyses are described in this article, along with

189 country-level variables collected previously and separately by other researchers or obtained from  
190 public databases.

### 191 ***Independent Happiness***

192 The Western measure of happiness was the Subjective Happiness Scale (SHS:  
193 Lyubomirsky & Lepper, 1999). The SHS is one of the most widely used measures of happiness  
194 in studies conducted in the US and Europe. The measure has 4 items to which participants  
195 respond on a 7-point scale (e.g., “Compared with most of my peers, I consider myself...” 1 =  
196 *less happy* to 7 = *more happy*).

### 197 ***Interdependent Happiness***

198 The Eastern measure of happiness was the Interdependent Happiness Scale (Hitokoto &  
199 Uchida, 2015). The IHS was developed in Japan and validated against samples in the United  
200 States, Germany, and South Korea. The measure has 9 items to which participants respond on a  
201 5-point scale (e.g., “I believe that my life is just as happy as that of others around me” 1 =  
202 *strongly disagree*, 5 = *strongly agree*).

### 203 ***Country-Level Variables***

204 The current analyses use several country-level variables obtained from publicly available  
205 databases. Country level variables were chosen to represent a range of socioecological,  
206 geographic, and psychological variables that could be feasibly related to country level  
207 differences in the conceptualizations of happiness (Chen, Lai, He, & Yu, 2020; Oishi, 2014). We  
208 grouped the country level variables into two categories of “objective” variables (statistics  
209 measured by government or other organizations) and “subjective” variables (aggregated from  
210 individual responses to psychological measurements). For a complete list of all country scores  
211 for each of the listed variables, see Supplementary Materials.

212           **Objective country-level variables.** A number of “objective” country level variables  
213 were chosen to reflect basic characteristics of the country as measured by various organizations,  
214 selected based on plausible relevance to happiness and the availability of data for at least 40 of  
215 the countries included in our data. These variables were also chosen to be as independent from  
216 each other as possible, as many country characteristics (e.g., GDP & life expectancy) are highly  
217 correlated with each other and would thus produce redundant results.

218           **Human Development Index (HDI).** The Human Development Index (HDI) is a  
219 composite measure of a country’s development, consisting of life expectancy, educational  
220 opportunities, and standard of living (United Nations, 2017). HDI scores were available for all  
221 ISP countries except Taiwan. Country HDI scores ranged from .49 (Uganda & Senegal) to .95  
222 (Norway), with higher scores indicating greater economic development.

223           **Population density.** Population density is the number of people per sq. km of land area  
224 (The World Bank, 2017). Population density data was available for all ISP countries except  
225 Taiwan; however, both Hong Kong (7,040 people per sq. km) and Singapore (7,916 people per  
226 sq. km) were excluded from analyses because their unusually high density skewed the country-  
227 level results. The remaining population density scores ranged from 3 people per sq. km  
228 (Australia) to 756 people per sq. km (Palestine).

229           **Growth rate.** Population growth rate is the average annual percent change in population  
230 of a country (Central Intelligence Agency, 2017). Growth rate data was available for all ISP  
231 countries except Palestine. Country scores ranged from -1.08 (Latvia) to 3.20 (Uganda), with  
232 positive scores indicating an increase in population size and negative scores indicating a decrease  
233 in population size.

234            ***Suicide rate.*** Suicide rate is the age-standardized suicide rate per 100,000 people,  
235 averaged across sexes (World Health Organization, 2015). Suicide rates were available for 60  
236 ISP countries. Country scores ranged from 2.50 (Pakistan) to 26.10 (Lithuania), with high scores  
237 indicating a higher suicide rate.

238            ***Average temperature.*** Average temperature is the average daily temperature throughout  
239 the entire year in Celsius (WeatherBase, 2019). Because some larger countries have a wide range  
240 of average temperatures depending upon exact location, the average temperature used was that of  
241 the city or cities in which ISP data collection took place. For most countries, only one city was  
242 included in the average daily temperature. Data on average daily temperature was available for  
243 all 63 ISP countries and ranged from 4°C (Russia) to 29°C (Thailand).

244            **Subjective country level variables.** Subjective country level variables were chosen to  
245 reflect the psychological or cultural characteristics of a country.

246            ***WEIRDness.*** *WEIRD* country level scores are a measure of cultural distance from the  
247 United States (Muthukrishna et al., 2020). As computed by Muthukrishna and colleagues (2020),  
248 the scores reflect a country's overall dissimilarity to the United States on a range of  
249 psychological variables from the World Values Survey (WVS), including personality traits,  
250 cultural values, and tightness/looseness. These psychological variables were selected by the  
251 authors to include all questions from the WVS that were judged to be culturally transmissible.  
252 The United States was chosen as the reference group because of the large American dominance  
253 in the field of psychology. Psychological distance scores were also calculated for China as a  
254 comparison, but were excluded from present analyses because the comparison measure of  
255 interdependent happiness was developed in Japan. Notably, the cultural distance calculated  
256 between the United States and Japan was similar to the cultural distance between China and

257 Japan, meaning the scores computed for China would not be representative of the cultural  
258 similarity to the IHS. For the cultural distance scores presented for the United States, we  
259 reversed the country scores to make higher scores indicate more similarity and thus a higher  
260 level of “WEIRD-ness” as it was originally conceptualized (i.e., more Western, Educated,  
261 Industrialized, Rich and Democratic, similar to the United States). Cultural distance WEIRD  
262 scores were available for 46 ISP countries. The ‘most WEIRD’ countries (most psychologically  
263 similar to the United States) were Canada (.97) and Australia (.97), and the least WEIRD  
264 countries was Jordan (.81).

265 **Cultural Values.** Schwartz’s cultural value orientation scales represent seven distinct  
266 bipolar values assessed in national surveys of students and teachers in 80 countries (Schwartz,  
267 2008). The scales measure *embeddedness* (how embedded people are in their groups),  
268 *intellectual autonomy* (the independent pursuit of ideas and knowledge), *affective autonomy* (the  
269 independent pursuit of pleasure), *harmony* (valuing the group rather than the self), *egalitarianism*  
270 (valuing cooperation and concern for all), *hierarchy* (reliance on structured and hierarchical  
271 social roles), and *mastery* (valuing success through self-assertion). Country scores for all seven  
272 of Schwartz’s cultural values were available for 59 ISP countries.

### 273 **Procedure**

274 Local collaborators (all of whom were psychologists) translated each of the measures into  
275 their local language, which were then back translated into English by an independent translator.  
276 The original English version was then compared with the back-translated measure and  
277 discrepancies were resolved. This method was used to translate all of the research materials into  
278 42 languages. The local collaborators then recruited participants from their college communities  
279 (largely students) to log on to our custom-built website (ispstudy.net) with a unique participant

280 ID. They then completed the informed consent process followed by a series of measures,  
281 including the happiness measures reported here. Upon completing the survey, participants had  
282 the opportunity to receive feedback on their personality trait levels based on their ratings on the  
283 personality measure included in the survey (a complete wireframe of the study's website is  
284 available online at <https://osf.io/jrbt3/>). All procedures were in accordance with the ethical  
285 standards of the University of California, Riverside, Office of Research Integrity, who approved  
286 this study (HS-11-046), and with the 1964 Helsinki declaration and its later amendments or  
287 comparable ethical standards.

### 288 **Data Analytic Strategy**

289 Data analyses were separated into those at the individual level and country level to assess  
290 how the performance of the happiness measures vary cross-culturally. The first set of analyses  
291 were conducted at the individual level, within each country, and results are presented for all 63  
292 countries. These individual level analyses include several internal consistency tests including  
293 general factor saturation ( $\omega_h$ ) and total common variance ( $\omega_t$ ) (Revelle & Condon, 2019).  
294 Additionally, because the two happiness measures have an unequal number of items, we present  
295 the average communality score ( $\bar{h}^2$ ) and the smallest split half reliability ( $\beta$ ) score for each  
296 measure. These tests of reliability were all conducted separately within each country and then  
297 averaged within geographic and cultural regions. To test for the association between the two  
298 happiness measures within each country, we used Structural Equation Modeling (SEM) to  
299 account for measurement error. Readers interested in comparing the mean levels of the happiness  
300 measures across countries may reference the Supplementary Materials, but those scores were not  
301 included in any of the present analyses.



325 each country, considering each as a separate sample, as well as the average across all countries.  
 326 The internal consistency scores for the Subjective Happiness Scale (SHS) are presented in Table  
 327 2 and the internal consistency scores for the Interdependent Happiness Scale (IHS) are presented  
 328 in Table 3. Averages of these countries' scores for both happiness measures within geographic  
 329 regions are presented in Table 4 (see Table 1 for a list of countries and their corresponding  
 330 region).

Table 2

<i>Reliability Measures of the Subjective Happiness Scale (SHS) by Country</i>				
Country	$\omega_t$	$\omega_h$	$\beta$	$\bar{h}^2$
Argentina	.83	.06	.82	.56
Australia	.89	.83	.83	.68
Austria	.86	.83	.83	.63
Belgium	.93	.91	.91	.78
Bolivia	.87	.00	.86	.63
Brazil	.86	.83	.83	.61
Bulgaria	.92	.82	.83	.77
Canada	.89	.87	.87	.69
Chile	.89	.86	.86	.68
China	.83	.04	.78	.57
Colombia	.77	.38	.66	.50
Croatia	.91	.86	.86	.73
Czech Republic	.90	.84	.84	.71
Denmark	.91	.88	.88	.73
Estonia	.88	.00	.87	.65
France	.89	.79	.79	.70
Georgia	.80	.78	.73	.53
Germany	.91	.87	.86	.72
Greece	.85	.82	.81	.60
Hong Kong	.82	.80	.74	.56
Hungary	.86	.82	.82	.62
India	.65	.62	.60	.35
Indonesia	.74	.30	.34	.54
Israel	.76	.07	.70	.50
Italy	.86	.83	.82	.62
Japan	.84	.79	.75	.60
Jordan	.75	.72	.64	.49
Kenya	.72	.01	.66	.43
Latvia	.92	.84	.84	.76

Lithuania	.89	.33	.85	.69
Macedonia	.84	.77	.77	.60
Malaysia	.71	.01	.59	.44
Mexico	.78	.01	.72	.49
Netherlands	.92	.88	.87	.76
New Zealand	.86	.01	.83	.62
Nigeria	.74	.48	.58	.48
Norway	.89	.85	.85	.68
Pakistan	.68	.37	.39	.48
Palestine	.70	.01	.58	.42
Peru	.90	.88	.88	.71
Philippines	.83	.08	.79	.57
Poland	.90	.86	.85	.70
Portugal	.88	.79	.79	.67
Romania	.86	.30	.79	.64
Russia	.87	.85	.85	.64
Senegal	.59	.54	.46	.31
Serbia	.89	.79	.81	.69
Singapore	.89	.85	.83	.68
Slovakia	.86	.78	.81	.63
Slovenia	.87	.83	.83	.64
South Africa	.88	.86	.85	.66
South Korea	.91	.84	.86	.72
Spain	.89	.84	.84	.68
Sweden	.91	.89	.89	.73
Switzerland	.87	.83	.83	.64
Taiwan	.88	.02	.86	.67
Thailand	.89	.02	.86	.67
Turkey	.87	.84	.83	.64
Uganda	.69	.20	.20	.49
Ukraine	.82	.42	.75	.57
United Kingdom	.94	.86	.88	.80
United States	.87	.84	.82	.64
Vietnam	.74	.04	.65	.46
<b>Average</b>	<b>.84</b>	<b>.59</b>	<b>.77</b>	<b>.62</b>
SD	.08	.34	.14	.11

*Note.*  $\omega_t$  = total common variance,  $\omega_h$  = general factor saturation,  $\beta$  = smallest split half reliability,  $\bar{h}^2$  = average communality score.

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Table 3

<i>Reliability Measures of the Interdependent Happiness Scale (IHS) by Country</i>				
Country	$\omega_t$	$\omega_h$	$\beta$	$\bar{h}^2$
Argentina	.81	.56	.58	.44
Australia	.82	.57	.64	.45
Austria	.78	.60	.55	.41
Belgium	.81	.48	.57	.46
Bolivia	.85	.59	.66	.49
Brazil	.84	.69	.65	.47
Bulgaria	.88	.63	.74	.54
Canada	.85	.66	.68	.47
Chile	.87	.74	.73	.50
China	.88	.73	.80	.49
Colombia	.86	.57	.67	.50
Croatia	.84	.60	.65	.46
Czech Republic	.82	.52	.57	.46
Denmark	.85	.61	.65	.49
Estonia	.82	.58	.65	.44
France	.83	.51	.57	.49
Georgia	.83	.55	.62	.46
Germany	.82	.60	.66	.43
Greece	.81	.44	.56	.42
Hong Kong	.88	.61	.76	.53
Hungary	.80	.49	.61	.41
India	.79	.62	.64	.38
Indonesia	.77	.50	.54	.41
Israel	.87	.50	.64	.52
Italy	.80	.54	.55	.44
Japan	.86	.62	.71	.48
Jordan	.89	.59	.69	.57
Kenya	.82	.42	.46	.50
Latvia	.83	.65	.56	.50
Lithuania	.86	.58	.69	.50
Macedonia	.81	.49	.48	.48
Malaysia	.85	.67	.69	.47
Mexico	.83	.59	.63	.47
Netherlands	.84	.67	.67	.46
New Zealand	.89	.74	.77	.55
Nigeria	.86	.52	.60	.52
Norway	.85	.65	.63	.50
Pakistan	.77	.52	.59	.36
Palestine	.83	.64	.59	.45
Peru	.90	.70	.69	.58
Philippines	.85	.59	.66	.48

Poland	.84	.64	.62	.47
Portugal	.81	.32	.63	.44
Romania	.85	.64	.69	.47
Russia	.82	.60	.63	.46
Senegal	.82	.55	.59	.44
Serbia	.89	.64	.73	.56
Singapore	.85	.62	.69	.47
Slovakia	.89	.70	.75	.54
Slovenia	.83	.58	.63	.44
South Africa	.84	.64	.64	.46
South Korea	.89	.75	.79	.55
Spain	.84	.66	.71	.46
Sweden	.89	.63	.68	.57
Switzerland	.82	.56	.61	.44
Taiwan	.85	.77	.67	.48
Thailand	.89	.81	.76	.57
Turkey	.83	.63	.63	.44
Uganda	.74	.41	.47	.37
Ukraine	.80	.54	.56	.43
United Kingdom	.85	.65	.72	.46
United States	.84	.68	.69	.44
Vietnam	.84	.65	.69	.47
<b>Average</b>	<b>.84</b>	<b>.60</b>	<b>.64</b>	<b>.47</b>
SD	.03	.09	.07	.05

Note.  $\omega_t$  = total common variance,  $\omega_h$  = general factor saturation,  $\beta$  = smallest split half reliability,  $\bar{h}^2$  = average communality score.

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Table 4

*Reliability Measures for the Subjective Happiness Scale (SHS) and Interdependent Happiness Scale (IHS) Averaged by Region*

Region	SHS $\omega_t$	IHS $\omega_t$	SHS $\omega_h$	IHS $\omega_h$	SHS $\beta$	IHS $\beta$	SHS $\bar{h}^2$	IHS $\bar{h}^2$	IHSxSHS
West English	.88	.85	.64	.66	.84	.70	.66	.48	.66
Western Europe	.90	.83	.85	.58	.85	.64	.71	.47	.79
Eastern Europe	.87	.83	.64	.59	.82	.63	.65	.46	.85
Southern Europe	.88	.84	.82	.56	.82	.62	.67	.48	.74
Latin America	.84	.85	.43	.63	.80	.66	.60	.49	.82
East Asia	.86	.87	.50	.70	.80	.75	.62	.51	.70
South Asia	.77	.83	.29	.62	.63	.66	.52	.45	.81
Middle East	.77	.86	.41	.59	.69	.64	.51	.50	.83
Africa	.72	.81	.42	.51	.55	.55	.48	.46	.85
<b>Average</b>	<b>.83</b>	<b>.84</b>	<b>.56</b>	<b>.60</b>	<b>.76</b>	<b>.65</b>	<b>.60</b>	<b>.48</b>	<b>.78</b>

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*Note.*  $\omega_t$  = total common variance,  $\omega_h$  = general factor saturation,  $\beta$  = smallest split half reliability,  $\bar{h}^2$  = average communality score.

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335 **Total Common Variance ( $\omega_t$ ).**

336 We first estimated the total reliability of the happiness measures using McDonald's  
337 (1999) omega total ( $\omega_t$ ). This metric is similar to Cronbach's alpha, and can be interpreted along  
338 the same scale, but provides a better estimate of reliability (Revelle & Condon, 2019). Both the  
339 SHS and the IHS had identical average total common variance across countries ( $\omega_t \text{ Mean} = .84$ ).  
340 For the SHS, only four countries had  $\omega_t < .70$ : Senegal ( $\omega_t = .59$ ), India ( $\omega_t = .65$ ), Pakistan ( $\omega_t$   
341  $= .68$ ), and Uganda ( $\omega_t = .69$ ). The countries with the highest SHS total common variance were  
342 the United Kingdom ( $\omega_t = .94$ ) and Belgium ( $\omega_t = .93$ ). Overall, countries in Africa had the  
343 lowest total variance ( $\omega_t \text{ Mean} = .72$ ) while Western Europe had the highest ( $\omega_t \text{ Mean} = .90$ ). For the  
344 IHS, none of the countries had a total common variance score  $\omega_t < .70$ . The countries with the  
345 lowest total common variance were Uganda ( $\omega_t = .74$ ) and Indonesia ( $\omega_t = .77$ ) while the highest  
346 proportion was in Peru ( $\omega_t = .90$ ). Similar to the SHS, the lowest total common variance for the  
347 IHS was found in African countries ( $\omega_t \text{ Mean} = .81$ ) but the highest proportions were in East Asian  
348 countries ( $\omega_t \text{ Mean} = .87$ ). While the total reliability for both happiness measures were lowest in  
349 African countries, the average was higher for the IHS ( $\omega_t \text{ Mean} = .81$ ) than the SHS ( $\omega_t \text{ Mean} = .72$ ).

350 **General Factor Saturation ( $\omega_h$ ).**

351 Next, we estimated the proportion of the variance in the observed happiness scores that  
352 can be attributed to the general latent factor. The general factor saturation of the test was  
353 calculated using McDonald's (1999) omega hierarchical ( $\omega_h$ ) coefficient. Omega hierarchical is a  
354 useful test for assessing the homogeneity of a measure. A low score would indicate that the  
355 observed scores are not accurate predictors of the latent score and the variability in the items may

356 be due to other factors (Revelle & Condon, 2019). Omega hierarchical is useful because, unlike  
357 omega total, the reliability estimates are not a function of test length. This is particularly  
358 important when comparing the reliability of two measures with unequal numbers of items, as is  
359 the case for the two measures of happiness. Both the SHS ( $\omega_{hMean} = .59$ ) and IHS ( $\omega_{hMean} = .60$ )  
360 average coefficients were very similar, however the SHS ( $\omega_{hSD} = .34$ ) varied considerably more  
361 than the IHS ( $\omega_{hSD} = .08$ ). The countries with the lowest SHS general factor saturation  
362 coefficients were Bolivia ( $\omega_h = .002$ ) and Estonia ( $\omega_h = .003$ ) while the countries with the highest  
363 SHS general factor saturation were Belgium ( $\omega_h = .91$ ) and Sweden ( $\omega_h = .89$ ). The region with  
364 the highest average SHS general factor saturation was Western Europe ( $\omega_{hMean} = .85$ ) while the  
365 lowest scores were found in South Asian countries ( $\omega_{hMean} = .29$ ). For the IHS, the countries with  
366 the lowest general factor saturation were Portugal ( $\omega_h = .32$ ) and Uganda ( $\omega_h = .41$ ) while the  
367 highest countries were Thailand ( $\omega_h = .81$ ) and Taiwan ( $\omega_h = .77$ ). The region with the highest  
368 average IHS general factor saturation was East Asia ( $\omega_{hMean} = .70$ ) while African countries had  
369 the lowest average ( $\omega_{hMean} = .51$ ).

### 370 **Smallest Split Half Reliability ( $\beta$ ).**

371 Another assessment of the homogeneity of a test is the smallest split half reliability of the  
372 test, calculated from all possible splits of the items for each happiness measure. The smallest split  
373 half reliability is similar to an alpha or  $\omega_h$ , as it is an estimate of the total reliable variance.  
374 However, similar to  $\omega_h$ , it is not influenced by test length, and thus useful for comparing  
375 measures with unequal items. For interpreting results, a  $\beta$  around .50 would indicate that about  
376 half of test reflects one general factor of happiness (Revelle & Condon, 2019). The SHS had the  
377 highest averaged smallest split half reliability ( $\beta_{Mean} = .77$ ) than the IHS ( $\beta_{Mean} = .64$ ). The worst  
378 lowest split half reliability for the SHS was in Uganda ( $\beta = .20$ ), followed by Indonesia ( $\beta = .34$ )

379 and Pakistan ( $\beta = .39$ ). The best lowest split half reliability scores for the SHS were in Belgium  
 380 ( $\beta = .91$ ) and Sweden ( $\beta = .89$ ). Overall, for SHS, the worst lowest split half reliabilities were in  
 381 African countries ( $\beta_{Mean} = .55$ ) while the best lowest split half reliabilities were in Western  
 382 European countries ( $\beta_{Mean} = .85$ ) and Western English-speaking countries ( $\beta_{Mean} = .84$ ). For the  
 383 IHS, the worst lowest split half reliability was in Kenya ( $\beta = .46$ ) followed by Uganda ( $\beta = .47$ )  
 384 while the best lowest split half reliability scores were in China ( $\beta = .80$ ) and South Korea ( $\beta =$   
 385  $.79$ ). Similar to the SHS, the worst lowest split half reliability scores for the IHS were in African  
 386 countries ( $\beta_{Mean} = .55$ ) but the best lowest split half reliability scores were in East Asian countries  
 387 ( $\beta_{Mean} = .75$ ).

Table 5

Communality scores ( $\bar{h}^2$ ) for the Subjective Happiness Scale (SHS)

Country	Item #1 $\bar{h}^2$	Item #2 $\bar{h}^2$	Item #3 $\bar{h}^2$	Item #4 $\bar{h}^2$	Average $\bar{h}^2$
Argentina	.63	.65	.50	.46	.56
Australia	.84	.75	.73	.40	.68
Austria	.46	.79	.63	.64	.63
Belgium	.69	.79	.87	.75	.78
Bolivia	.81	.67	.56	.47	.63
Brazil	.69	.72	.68	.36	.61
Bulgaria	.84	.78	.84	.63	.77
Canada	.69	.76	.75	.56	.69
Chile	.69	.80	.73	.51	.68
China	.73	.76	.63	.14	.57
Colombia	.72	.74	.42	.12	.50
Croatia	.77	.79	.77	.60	.73
Czech Republic	.83	.76	.70	.55	.71
Denmark	.77	.83	.73	.59	.73
Estonia	.83	.70	.61	.48	.65
France	.76	.75	.77	.53	.70
Georgia	.72	.74	.41	.25	.53
Germany	.83	.78	.68	.60	.72
Greece	.67	.75	.65	.34	.60
Hong Kong	.82	.78	.44	.20	.56
Hungary	.66	.75	.59	.50	.62
India	.41	.45	.32	.22	.35

Indonesia	.79	.62	.49	.28	.54
Israel	.55	.62	.68	.15	.50
Italy	.74	.75	.58	.39	.62
Japan	.77	.76	.46	.40	.60
Jordan	.70	.62	.53	.13	.49
Kenya	.59	.50	.59	.05	.43
Latvia	.87	.86	.76	.56	.76
Lithuania	.79	.85	.80	.34	.69
Macedonia	.72	.83	.40	.46	.60
Malaysia	.61	.74	.39	.03	.44
Mexico	.56	.80	.45	.15	.49
Netherlands	.80	.77	.74	.71	.76
New Zealand	.87	.74	.59	.28	.62
Nigeria	.78	.58	.28	.28	.48
Norway	.77	.76	.70	.49	.68
Pakistan	.87	.64	.38	.02	.48
Palestine	.69	.64	.32	.03	.42
Peru	.81	.76	.71	.58	.71
Philippines	.75	.67	.62	.24	.57
Poland	.80	.81	.70	.48	.70
Portugal	.78	.75	.59	.57	.67
Romania	.74	.72	.80	.29	.64
Russia	.74	.71	.67	.46	.64
Senegal	.46	.46	.22	.11	.31
Serbia	.90	.79	.64	.42	.69
Singapore	.87	.85	.60	.40	.68
Slovakia	.67	.70	.78	.37	.63
Slovenia	.79	.77	.52	.48	.64
South Africa	.77	.80	.70	.37	.66
South Korea	.83	.81	.74	.50	.72
Spain	.70	.73	.67	.64	.68
Sweden	.80	.82	.75	.54	.73
Switzerland	.74	.70	.65	.48	.64
Taiwan	.67	.91	.76	.33	.67
Thailand	.85	.67	.73	.43	.67
Turkey	.74	.75	.61	.47	.64
Uganda	.75	.70	.29	.23	.49
Ukraine	.78	.72	.55	.22	.57
United Kingdom	.85	.88	.78	.70	.80
United States	.78	.77	.68	.32	.64

Vietnam	.79	.60	.40	.07	.46
<b>Average</b>	<b>.74</b>	<b>.73</b>	<b>.61</b>	<b>.39</b>	<b>.62</b>

Table 6

Communality scores ( $\bar{h}^2$ ) for the Subjective Happiness Scale (SHS)										
Country	#1 $\bar{h}^2$	#2 $\bar{h}^2$	#3 $\bar{h}^2$	#4 $\bar{h}^2$	#5 $\bar{h}^2$	#6 $\bar{h}^2$	#7 $\bar{h}^2$	#8 $\bar{h}^2$	#9 $\bar{h}^2$	Avg $\bar{h}^2$
Argentina	.42	.28	.34	.22	.20	.28	.56	.65	1.00	.44
Australia	.29	.48	.81	.21	.68	.15	.57	.37	.51	.45
Austria	.35	.17	.22	.08	.40	1.00	.61	.41	.46	.41
Belgium	.29	1.00	.36	.16	.13	.26	.30	.64	1.00	.46
Bolivia	.83	.40	.39	.32	.32	.37	.59	.71	.48	.49
Brazil	.50	.30	.49	.26	.24	1.00	.63	.45	.40	.47
Bulgaria	.53	.63	.36	.30	.39	1.00	.59	.59	.49	.54
Canada	.33	.67	.38	.35	.45	.30	.57	.40	.82	.47
Chile	.48	.30	.43	.35	1.00	.23	.69	.53	.53	.50
China	.39	.58	.41	.47	.34	.54	.55	.40	.69	.49
Colombia	.58	.22	1.00	.33	.43	.40	.62	.46	.47	.50
Croatia	.32	.42	.40	.44	.49	.32	.57	.47	.70	.46
Czech Republic	.32	.11	1.00	.16	.61	.29	.51	.42	.73	.46
Denmark	.42	.36	.41	.50	.58	.23	.82	.44	.68	.49
Estonia	.39	.42	.45	.10	.74	.30	.39	.50	.65	.44
France	.39	.34	.33	.24	1.00	.25	.69	.53	.60	.49
Georgia	.40	.21	.33	.42	.77	.21	.47	.67	.63	.46
Germany	.31	.42	.66	.11	.69	.27	.46	.32	.66	.43
Greece	.35	.31	.39	.57	.21	.22	.68	.40	.67	.42
Hong Kong	.42	.57	.40	.41	.50	.33	.62	1.00	.52	.53
Hungary	.36	.48	.46	.08	.44	.39	.38	.38	.73	.41
India	.28	.39	.58	.20	.43	.21	.58	.36	.38	.38
Indonesia	.32	.90	.47	.17	.04	.27	1.00	.22	.28	.41
Israel	.52	.77	.65	.34	.29	.30	.76	.67	.42	.52

Italy	.44	.41	.33	.01	1.00	.14	.61	.48	.52	.44
Japan	1.00	.51	.29	.42	.28	.19	.63	.52	.53	.48
Jordan	.54	.54	.61	.51	1.00	.28	.56	.53	.61	.57
Kenya	.31	.30	.40	.40	1.00	.39	.56	.54	.56	.50
Latvia	.23	.13	1.00	.27	.33	.67	.61	.47	.79	.50
Lithuania	.43	.50	.40	.16	1.00	.24	.50	.54	.77	.50
Macedonia	1.01	.07	.09	.84	.22	.14	.52	.64	.80	.48
Malaysia	.52	.37	.29	.54	.32	.16	.58	1.00	.44	.47
Mexico	.95	.25	.25	.34	.20	.43	.63	.51	.65	.47
Netherlands	.45	.35	.71	.18	.50	.17	.72	.49	.55	.46
New Zealand	.49	1.00	.16	.26	.35	.59	.77	.63	.72	.55
Nigeria	.43	.39	.51	.39	.15	1.00	.60	.60	.57	.52
Norway	.27	.87	.32	.27	.59	.24	.68	.61	.62	.50
Pakistan	.28	.51	.28	.20	.18	.33	.63	.41	.45	.36
Palestine	.47	.23	.50	.39	.44	.23	.40	.56	.80	.45
Peru	.73	.40	.54	.40	.54	.46	.76	.74	.63	.58
Philippines	.33	.50	.48	.21	.74	.27	.57	.64	.61	.48
Poland	.33	1.00	.20	.36	.52	.22	.66	.46	.49	.47
Portugal	.37	.48	1.00	.36	.20	.21	.55	.54	.26	.44
Romania	.47	.50	.41	.33	.53	.24	.56	.55	.70	.47
Russia	.29	.47	.30	.12	1.00	.28	.82	.38	.48	.46
Senegal	.35	.39	.33	.37	.22	1.00	.36	.48	.51	.44
Serbia	.53	.45	.53	.33	1.00	.20	.58	.62	.80	.56
Singapore	.36	.43	.44	.58	.31	.32	.64	.47	.69	.47
Slovakia	.38	.71	.51	.37	.52	.31	.61	.64	.76	.54
Slovenia	.47	.69	.06	.34	.46	.22	.55	.56	.62	.44
South Africa	.35	.28	.60	.32	.47	.25	.59	.50	.81	.46
South Korea	.58	.38	.38	.41	.43	1.00	.64	.59	.54	.55
Spain	.46	.33	.36	.24	1.00	.18	.60	.34	.67	.46

Sweden	.33	.69	.54	.46	.60	.40	.54	.56	1.00	.57
Switzerland	.30	.45	.36	.17	.84	.18	.56	.47	.61	.44
Taiwan	.42	.35	1.00	.24	.30	.26	.69	.38	.66	.48
Thailand	.35	.90	.30	.44	1.00	.28	.73	.53	.59	.57
Turkey	.29	.36	.29	.19	.66	.33	.63	.48	.70	.44
Uganda	.50	.36	.11	.33	.59	.13	.38	.68	.27	.37
Ukraine	.39	.58	.35	.18	.46	.26	.41	.50	.71	.43
United Kingdom	.32	.33	.79	.20	.55	.27	.56	.48	.68	.46
United States	.44	.54	.22	.21	.57	.28	.55	.52	.58	.44
Vietnam	1.00	.61	.41	.24	.27	.20	.60	.31	.60	.47
<b>Average</b>	<b>.44</b>	<b>.47</b>	<b>.45</b>	<b>.31</b>	<b>.52</b>	<b>.35</b>	<b>.59</b>	<b>.52</b>	<b>.62</b>	<b>.47</b>

391

392 **Communality Scores ( $\bar{h}^2$ ).**

393 Communality scores are the square of the factor loadings of the item on the latent trait  
394 and represent the percent of variance in the item that can be explained by the latent trait  
395 (Slocum-Gori & Zumbo, 2011). As communality scores are essentially correlation coefficients,  
396 the results can be interpreted similarly (Costello & Osborne, 2005), with scores of less than .40  
397 suggesting the items may not be strongly related to the latent variable. Tables 5 and 6 present the  
398 communality scores for the SHS and IHS across countries, respectively. Because the two  
399 happiness measures do not have an equal number of items, we also calculated the average  
400 communality score for each measure (Revelle & Condon, 2019), presented in Table 4.

401 The bottom row of Table 5 presents the average communality score for each item of the  
402 Subjective Happiness Scale across countries. The first 3 items of the SHS had high communality  
403 scores (ranging from .60 to .70), suggesting a high proportion of their variability could be  
404 explained by the latent independent happiness variable. However, there was a substantial drop in  
405 communality scores for the fourth item on the scale. The communality score for the SHS item #4  
406 was less than .40, suggesting this item may not be as strongly related as the other items. Notably,  
407 item #4 is also the only reversed item on the scale – “Some people are generally not very  
408 happy...To what extent does this characterize you?”. For some countries, such as Kenya,  
409 Vietnam, and Pakistan, the communality scores for the first three items were all acceptable while  
410 the communality score for item #4 was almost zero. Even in the United States, the country of  
411 origin for the measure, the communality score for item #4 might not be considered acceptable.  
412 Overall, this suggests this item should be removed to improve the overall reliability of the  
413 measure.

414 For the Interdependent Happiness Scale, the communality scores for all of the items were  
415 much more consistent. Two of the items (#4 & #6) had average communality scores below .40  
416 but were not substantially lower than the other items that ranged from .40 to .60. These two items  
417 from the IHS pertain to the quiescence component of the scale, regarding the absence of negative  
418 aspects in one's life. However, while these two items were lowest on average, these items were  
419 not consistently low within countries. For example, Austria and Brazil had low (<.30)  
420 communality scores for item #4 but extremely high communality scores for #6. However, in  
421 Japan, the country of origin for the IHS, the communality score for item #6 was considerably  
422 lower. The item with the highest overall average communality score was #9, "I generally believe  
423 that things are going well for me in its own way as they are for others around me," followed by  
424 items #7 and #8. These last three items on the measure pertain to the embeddedness aspect of  
425 interdependent happiness.

426 Each measure's average communality score was calculated as the average of each item's  
427 communality score within each country and then averaged across countries (see Table 4). Across  
428 all countries, the average communality scores for the SHS ( $\bar{h}^2_{\text{Mean}} = .62$ ) were higher than the  
429 average communality scores for the IHS ( $\bar{h}^2_{\text{Mean}} = .47$ ). The countries with the lowest average  
430 communality scores for the SHS were Senegal ( $\bar{h}^2 = .31$ ) and India ( $\bar{h}^2 = .35$ ), while the highest  
431 scores were in the United Kingdom ( $\bar{h}^2 = .80$ ) and Belgium ( $\bar{h}^2 = .78$ ). Overall, the lowest  
432 average communality scores for the SHS were in Africa ( $\bar{h}^2_{\text{Mean}} = .48$ ) while the highest average  
433 communality scores were in Western Europe ( $\bar{h}^2_{\text{Mean}} = .71$ ). For the IHS, the countries with the  
434 lowest average communality scores were Pakistan ( $\bar{h}^2 = .36$ ) and Uganda ( $\bar{h}^2 = .37$ ) while the  
435 highest average communality scores were in Peru ( $\bar{h}^2 = .58$ ) and Jordan, Sweden, and Thailand

436 ( $\bar{h}^2 = .57$ ). Overall, the lowest average communality scores for the IHS were in South Asia  
437 ( $\bar{h}^2_{\text{Mean}} = .45$ ) and the best average communality scores were in East Asia ( $\bar{h}^2_{\text{Mean}} = .51$ ).

#### 438 ***Relationship Between Happiness Measures***

439 To test for the relationship between the two happiness measures we used Structural  
440 Equation Modeling (SEM) to account for differences in the reliability of the measures. For the  
441 Interdependent Happiness Scale (IHS), the 9 items were grouped into 3 corresponding parcels to  
442 decrease the total number of parameters estimated. There were no missing data and thus no  
443 imputation was needed.

444 Given the range of sample sizes across countries, post hoc power analyses were  
445 conducted for estimating the relationship between the two latent variables using the *pwrSEM* app  
446 (Wang & Rhemtulla, 2020). Rather than calculate power estimates for all 63 countries, we tested  
447 the power to detect an effect given the average observed relationships among variables and then  
448 with a combination of the lowest observed relationships among variables. For the first power  
449 analysis, we estimated the factor loadings for the 4 item SHS should be .75, given an average  
450 reliability of .84. The factor loadings for the 3 item IHS with an average reliability of .84 were  
451 estimated at .80. The average correlation between the observed SHS and IHS in the data was  $r =$   
452 .59, which gives an estimated latent variable correlation of .69. Given these estimated parameters  
453 and an average sample size of 246 participants across countries, we estimated the power to detect  
454 an effect between the two latent happiness variables to approach 1.

455 Next, we conducted a power analyses using the lowest observed values, to determine the  
456 minimum power we could expect for any of our countries. The lowest reliability of the SHS was  
457 .59 (Senegal), so the estimated factor loadings were set to .51. For the IHS, the lowest reliability  
458 observed was .74 (Uganda), so the estimated factor loadings were set to .70. The smallest

459 observed correlation between the two happiness measures was  $r = .26$  (Indonesia), so using the  
460 lowest reliabilities we estimated the lowest correlation between the two latent variables to be  $.39$ .  
461 Lastly, power was calculated using these parameter estimates with the smallest sample in our  
462 data of 54 (Macedonia), resulting in power of  $.72$  to detect an effect between the happiness  
463 measures. Given that there would still be reasonable power to detect an effect despite this exact  
464 combination of lowest possible parameters not actually appearing in our data, we concluded all  
465 of our country's sample sizes were sufficient for estimating the latent relationship between the  
466 SHS and IHS.

467         A model with the two latent happiness variables was first fitted using all of the data (see  
468 Figure 1). The first factor loadings for each measure were fixed to 1 and the SHS was set as the  
469 predictor variable. Results indicated overall good fit for the model (RMSEA =  $.06$ , CFI =  $.98$ ).  
470 Unsurprisingly, the SHS was significantly related to the IHS,  $b = .31$ ,  $\beta = .79$ ,  $z = 72.99$ ,  $p <$   
471  $.001$ . Next, the same model was used to calculate the relationship between the SHS and the IHS  
472 within each country. Results are presented in Table 7. The countries with the strongest  
473 standardized relationship between the SHS and the IHS were Hungary ( $\beta = .97$ ), New Zealand  
474 and Romania ( $\beta = .93$ ). The countries with the weakest standardized relationship between the  
475 two happiness measures were Indonesia ( $\beta = .31$ ) and Uganda ( $\beta = .36$ ). Both Western and  
476 Eastern European countries had the highest average association between the happiness measures  
477 ( $\beta_{Mean} = .85$ ) while the lowest associations were found in African countries ( $\beta_{Mean} = .66$ ). Overall,  
478 while the relationship between the two happiness measures varied across countries, there were no  
479 countries in which the two measures were unrelated or negatively associated with each other.

480         *Fig 1.* SEM model displaying the correlation between the happiness latent variables

481 *Note.* IHS = Interdependent Happiness Scale. SHS = Subjective Happiness Scale. Model fit  
 482 statistics: RMSEA = .06, CFI = .98,  $R^2 = .63$ . Estimate between SHS and IHS:  $\beta = .79$ ,  $b = .31$ ,  $z$   
 483 = 72.99,  $p < .001$ . IHS.1 was an average of the first 3 items on the IHS, IHS.2 was an average of  
 484 the next 3 items on the IHS, and IHS.3 was an average of the last 3 items on the IHS.

Country	$\beta$	$b$	$SE$	$R^2$
Hungary	.97	.46	.04	.94
New Zealand	.93	.38	.04	.87
Romania	.93	.42	.04	.86
Belgium	.90	.40	.09	.81
Russia	.90	.36	.04	.81
Croatia	.90	.26	.03	.80
Peru	.89	.46	.06	.80
United Kingdom	.89	.37	.04	.79
Sweden	.89	.38	.05	.78
France	.88	.27	.03	.77
Netherlands	.87	.25	.02	.76
Czech Republic	.86	.27	.03	.74
Macedonia	.86	.22	.06	.74
Latvia	.85	.19	.03	.73
Turkey	.85	.27	.03	.73
Slovakia	.85	.40	.05	.72
Thailand	.85	.27	.03	.72
Jordan	.85	.42	.05	.72
Switzerland	.85	.29	.02	.72
Italy	.84	.34	.02	.71
Poland	.84	.26	.03	.71
Hong Kong	.84	.32	.04	.71
Brazil	.84	.35	.03	.71
Norway	.84	.30	.04	.71
Germany	.84	.29	.02	.70
Singapore	.84	.30	.03	.70
Spain	.83	.36	.03	.69
South Korea	.83	.34	.03	.68
Taiwan	.82	.30	.04	.68
South Africa	.82	.33	.03	.67
Bulgaria	.82	.31	.03	.67
Denmark	.82	.26	.03	.67

Georgia	.81	.28	.04	.66
Austria	.81	.32	.06	.66
Israel	.81	.45	.06	.66
Estonia	.81	.32	.03	.65
Vietnam	.81	.30	.04	.65
United States	.81	.32	.01	.65
Australia	.80	.27	.03	.64
Ukraine	.80	.38	.04	.63
Kenya	.79	.42	.06	.63
Serbia	.79	.31	.03	.62
Argentina	.78	.37	.06	.61
Canada	.78	.27	.03	.60
Slovenia	.77	.27	.04	.60
Palestine	.77	.28	.03	.59
Lithuania	.77	.30	.03	.59
India	.76	.39	.07	.58
Senegal	.76	.29	.03	.57
Chile	.75	.31	.03	.57
Portugal	.75	.19	.03	.56
China	.74	.28	.02	.54
Mexico	.73	.32	.04	.53
Japan	.72	.35	.04	.52
Philippines	.70	.29	.03	.48
Malaysia	.66	.33	.05	.44
Pakistan	.66	.20	.04	.43
Greece	.65	.25	.03	.43
Bolivia	.62	.32	.05	.38
Colombia	.56	.24	.04	.32
Nigeria	.56	.20	.04	.31
Uganda	.36	.11	.05	.13
Indonesia	.31	.06	.03	.09
<b>Average</b>	<b>.79</b>	<b>.31</b>	<b>.04</b>	<b>.64</b>

*Note.* Countries are listed from highest to lowest  $\beta$

485

486 **Country-Level Analyses**

487           The second set of analyses were conducted on the country level, using the results  
488 presented previously as the input data (Tables 2, 3 & 5) as well as country-level data acquired  
489 from sources independent from this study (see Supplementary Materials for these country level  
490 scores). These country level analyses were conducted to help interpret the results previously

491 discussed by attempting to find patterns in the results. This procedure is similar to Multilevel  
 492 Modeling (MLM) that tests for group (Level 2) predictors of individual (Level 1) relationships.  
 493 However, given that many of the relationships involve summaries of individuals within countries  
 494 (e.g., reliability of a measure) rather than individual scores, we could not use the MLM  
 495 framework for analyses. Fortunately, the large number of countries presented here allow for  
 496 correlations to be conducted on the group level, with a total sample size ranging from 45 to 63  
 497 (countries).

#### 498 *Relationship Between Happiness Measure Reliabilities*

499 The previous tests of reliability for the happiness measures resulted in multiple scores of  
 500 internal consistency for each country and for each measure. We were interested to see if the same  
 501 countries with good reliabilities for one happiness measure also produced good reliabilities for  
 502 the other happiness measure. Correlations between the happiness measure reliabilities across  
 503 countries were conducted for the general factor saturation, total common variance, smallest split-  
 504 half reliability, and average communality scores for the items (see Table 8). There was a  
 505 significant positive correlation between the two happiness measures for the total common  
 506 variance  $r(61) = .34, p = .006$ , smallest split half reliability  $r(61) = .38, p = .002$ , and the average  
 507 communality scores  $r(61) = .27, p = .03$ , but not for the general factor saturation  $r(61) = -.03, p =$   
 508  $.82$ .

Table 8

*Correlation between happiness measure reliabilities across countries*

		SHS			
		$\omega_h$	$\omega_t$	$\beta$	$\bar{h}^2$
IHS	$\omega_h$	-.03			
	$\omega_t$		<b>.34</b>		
	$\beta$			<b>.38</b>	

---

 $\bar{h}^2$ **.27**

---

*Note.* N = 63 countries. Correlations significant at the .05 level are **bolded**.  
 $\omega_t$  = total common variance,  $\omega_h$  = general factor saturation,  $\beta$  = smallest split  
 half reliability,  $\bar{h}^2$  = average communality score.

---

509

510 *Country-Level Predictors of Happiness Measure Properties*

511 The last set of analyses attempted to find predictors of the happiness measure reliabilities  
 512 and associations. If there are meaningful patterns in the data for the assessment of happiness  
 513 across countries then these patterns can be predicted from other country-level variables. The first  
 514 set of predictors were objective country level variables obtained from government sources and  
 515 include the Human Development Index (HDI), population growth rate, population density,  
 516 average suicide rate, and average temperature of a country. Full results are shown in Figure 2.  
 517 Across these objective country level variables, the best predictor of happiness measure reliability  
 518 was HDI, and these associations were higher for the SHS than the IHS. HDI was positively  
 519 correlated with all four of the SHS reliabilities (general factor saturation  $r(60) = .48, p < .001$ ,  
 520 total common variance  $r(60) = .76, p < .001$ , lowest split half reliability  $r(60) = .73, p < .001$ , and  
 521 average communality score  $r(60) = .70, p < .001$ ). For the IHS, HDI was significantly correlated  
 522 with two of the reliabilities (total common variance  $r(60) = .27, p = .03$ , lowest split half  
 523 reliability  $r(60) = .33, p = .009$ ). The population growth rate ( $r\omega_h(60) = -.32, r\omega_t(60) = -.66, r_\beta$   
 524  $(60) = -.61, r\bar{h}^2(60) = -.62$ ) and average temperature ( $r\omega_h(60) = -.38, r\omega_t(60) = -.59, r_\beta(60) = -$   
 525  $.51, r\bar{h}^2(60) = -.59$ ) of a country were negatively related to all of the SHS reliabilities but none of  
 526 the IHS reliabilities. Suicide rates were unrelated to any of the happiness measure reliabilities.  
 527 The strongest predictor of the correlation between the two happiness measures was a country's  
 528 HDI  $r(60) = .53, p < .001$ , population growth rate  $r(60) = -.47, p < .001$ , and average daily  
 529 temperature  $r(60) = -.35, p = .005$ .

530 *Fig 2. Country level correlations between objective country level variables and happiness*  
 531 *variable reliabilities.*

532 *Note. IHS = Interdependent Happiness Scale, SHS = Subjective Happiness Scale,  $\omega_t$  =*  
 533 *total common variance,  $\omega_h$  = general factor saturation,  $\beta$  = smallest split half reliability,  $h^2$  =*  
 534 *average communality score, HDI = Human Development Index, PopDensity = population*  
 535 *density, GrowthRate = population growth rate, SuicideRate = suicide rate, AvgTemp = average*  
 536 *daily temperature.*

537 The correlations for subjective country level variables included a measure of WEIRDness  
 538 and Schwartz's values (see Figure 3). Consistent with the objective country level variables, there  
 539 were many more correlates for the SHS reliabilities than the IHS reliabilities. For example, a  
 540 country's WEIRD score was positively correlated with the SHS general factor saturation  $r(43) =$   
 541  $.43, p = .003$ , total common variance  $r(43) = .57, p < .001$ , lowest split half reliability  $r(43) =$   
 542  $.64, p < .001$ , and average communality score  $r(43) = .51, p < .001$  but unrelated to any of the  
 543 IHS reliabilities. Additionally, countries with higher SHS reliabilities also scored higher on the  
 544 values of Affective Autonomy ( $r\omega_h(57) = .39, r\omega_t(57) = .56, r\beta(57) = .49, r\bar{h}^2(57) = .55$ ), and  
 545 Intellectual Autonomy ( $r\omega_h(57) = .37, r\omega_t(57) = .56, r\beta(57) = .55, r\bar{h}^2(57) = .53$ ) and lower on  
 546 the value of Embeddedness ( $r\omega_h(57) = -.43, r\omega_t(57) = -.66, r\beta(57) = -.63, r\bar{h}^2(57) = -.58$ ).  
 547 Consistent with the objective country level correlates, there were substantially far fewer  
 548 significant IHS reliability correlations. The only significant relationship was between the lowest  
 549 split half IHS reliability and higher levels of valuing Mastery  $r(57) = .35, p = .007$ . This cultural  
 550 value was unrelated to any of the SHS reliabilities. The strongest predictors of the correlation  
 551 between the two happiness measures were a country's WEIRD score  $r(43) = .42, p = .004$ , and

552 the values of Intellectual  $r(43) = .46, p < .001$  and Affective Autonomy  $r(43) = .42, p < .001$  and  
553 less Embeddedness  $r(43) = -.47, p < .001$ .

554

555 *Fig 3. Country level correlations between subjective country level variables and*  
556 *happiness variable reliabilities.*

557 *Note.* IHS = Interdependent Happiness Scale, SHS = Subjective Happiness Scale,  $\omega t$  =  
558 total common variance,  $\omega h$  = general factor saturation,  $\beta$  = smallest split half reliability,  $h^2$  =  
559 average communality score. WEIRD scores originally from Muthukrishna et al. (2020), values  
560 scores originally from Schwartz (2008).

561

562

## Discussion

### 563 Reliability of the Independent (SHS) and Interdependent (IHS) Measures of Happiness

564 Multiple tests of measurement reliability revealed that, as might be expected, the  
565 reliability of each measure of happiness was stronger in regions more culturally similar to the  
566 country of the measure's origin. Specifically, the interdependent measure of happiness had the  
567 highest overall reliabilities in East Asian countries, while the independent measure of happiness  
568 had the highest reliabilities in Western Europe. Interestingly, the reliabilities of the two measures  
569 of happiness were highly similar between the United States and Japan, the two countries in  
570 which the SHS and IHS measure were developed, respectively. As can be seen in Tables 2 and 3,  
571 the reliabilities of the measure of independent happiness were only slightly higher in the country  
572 of origin (the United States) than in Japan. The same held true for Japan, where the reliabilities  
573 of the measures of interdependent happiness were only slightly higher than the reliabilities in the  
574 United States. In both countries, the reliabilities of the measure of independent happiness were

575 higher than the reliabilities of the measure of interdependent happiness, although this difference  
576 was less pronounced in Japan. While these subtle differences between the United States and  
577 Japan still align with theoretical predictions, differences in the reliabilities of the happiness  
578 measures become more notable when compared across the remaining 61 countries. For example,  
579 the interdependent measure of happiness performed much better than the independent measure of  
580 happiness in South Asian countries and the Middle Eastern countries. Additionally, the lowest  
581 reliabilities for both happiness measures were found in African countries, suggesting that neither  
582 conceptualization of happiness might be particularly well-suited for those cultures.

583         Additionally, the ranges of reliabilities across countries were different for the two  
584 happiness measures. The range of the reliabilities for the independent measure of happiness  
585 varied drastically while the range of reliabilities for the interdependent measure of happiness  
586 were much smaller. This discrepancy appeared despite the comparable overall averages in  
587 reliabilities across countries, with the SHS performing slightly better than the IHS overall. Thus,  
588 while the SHS has some of the highest reliabilities in certain countries (generally WEIRD ones),  
589 it also had some of the lowest reliabilities in other countries (generally non-WEIRD ones), while  
590 the reliabilities of the IHS varied less. Higher reliabilities of measures are generally considered  
591 better; however, for cross-cultural researchers interested in comparing measures across countries,  
592 the equivalence of a measure's reliability maybe more important than its size, as variations in  
593 reliability can artificially inflate or deflate comparisons between countries (Chen, 2008). Thus,  
594 despite the slightly lower overall reliability of the IHS than the SHS, we believe that in most  
595 cases the IHS would still be a better cross-cultural instrument.

596         The reliability of a measure is also a way to assess its coherence or "schema" in a  
597 particular culture. Higher reliabilities mean participants are responding to each item on the scale

598 in a manner consistent with the putatively underlying latent trait, in this case happiness. A lower  
599 reliability suggests that the latent concept or structure of happiness is not as strong or coherent  
600 for that group, or that the items are assessing multiple aspects of happiness that do not map  
601 equally well onto the underlying construct. Treating reliabilities as an assessment of a construct's  
602 coherence means that we can seek to predict the overall coherence of a measure across countries  
603 using other country-level data. It also suggests that it might be a mistake to "correct" the SHS for  
604 attenuation within countries where it has low reliability, since this may indicate that the SHS is a  
605 less appropriate measure in those countries and any corrections would only mask that fact.

606         The reliability of the SHS was related to many country-level variables, including  
607 economic development and a country's "WEIRDness." Specifically, coherence of the  
608 independent happiness measure was stronger in countries with higher development, less  
609 population growth, and in colder climates. Additionally, several cultural values were related to  
610 the reliabilities, or coherence, of the SHS. Greater coherence of the independent happiness  
611 measure was stronger in countries that value autonomy, both affective and intellectual. These  
612 countries value each individual's uniqueness and, particularly for affective autonomy,  
613 "encourage individuals to pursue affectively positive experience for themselves" (Schwartz,  
614 2007). Additionally, the reliabilities for the SHS were lower in countries that value  
615 embeddedness with others, suggesting less interdependence in general as well as for defining  
616 one's happiness. Thus, it appears that the concept of independent happiness is more coherent in  
617 the more developed, autonomous, WEIRD countries.

618         For interdependent happiness, there were far fewer country-level correlates with the  
619 reliabilities. However, given the more limited range of reliabilities compared to the SHS  
620 reliabilities as previously discussed, it is perhaps unsurprising that we were not able to find as

621 many country level predictors. The IHS reliabilities were weakly related to a country's economic  
622 development and higher in countries that value mastery over harmony. Interestingly, the  
623 reliability of the interdependent happiness measure was completely unrelated to a country's  
624 "WEIRDness." Thus, interdependent happiness may not be a WEIRD (or even non-WEIRD)  
625 construct; but rather be more uniformly meaningful across all countries. In that sense IHS may  
626 be a more "universal" measure of happiness than the SHS. This finding is consistent with  
627 previous work on cross-cultural differences in conceptual definitions of happiness. Delle Fave  
628 and colleagues (2016) found that the most universal definition of happiness across 12 countries  
629 was harmony, a concept more commonly associated with the East Asian view on happiness,  
630 rather than the Western view. Thus, these universal lay definitions of happiness may explain why  
631 the IHS, developed in East Asia, performed more consistently across cultures than the SHS.

### 632 **Conceptual Overlap Between Independent (SHS) and Interdependent (IHS) Happiness**

633 Further analyses attempted to assess the degree of similarity between the two measures.  
634 Overall, the two measures of happiness were positively related to each other in every country  
635 assessed, however the strength of this relationship still varied cross-culturally. Individuals were  
636 more likely to associate these two measures of happiness in "WEIRDer" countries, i.e., those  
637 most similar to the United States. Additionally, the relationship between the two happiness  
638 measures was stronger in countries with more development, less population growth, and where  
639 people value more autonomy and less interdependence with others. These correlations are  
640 consistent with regional averages found in the data. Specifically, the strongest correlations  
641 between the two happiness measures were in European countries while somewhat lower in East  
642 Asian and Latin American countries. Interestingly, the lowest correlations between the happiness  
643 measures were found in Africa. Given that the African countries also had the lowest reliabilities

644 for both happiness measures this suggests that the two measures may not only be more  
645 conceptually distinct in Africa but that neither measure may be fully appropriate for assessing  
646 happiness in that cultural context.

647         The two measures of happiness tested in this article originated from cultures with distinct  
648 historical roots and religious traditions (Uchida, Norasakkaukit, & Kitayama, 2004). The West  
649 has historically been influenced by a self-centered Protestant work ethic that defines happiness as  
650 a personal achievement and individuals as distinct, independent, and responsible for their own  
651 fate. In contrast, the Eastern ideologies of Buddhism, Taoism, and Confucianism emphasize the  
652 interconnectedness of everyone and everything, prioritizing harmony and balance over individual  
653 achievement (Uchida, Norasakkaukit, & Kitayama, 2004). Thus, it is perhaps unsurprising that  
654 both the American and Japanese measures of happiness performed worse in the regions lacking  
655 either Christian Protestant or Buddhist traditions (e.g., Africa and the Middle East) while  
656 generalizing better to Latin America, Europe, and the rest of Eastern Asia. The lower  
657 performance of both happiness measures in Africa and the Middle East further highlights the  
658 need for cross-cultural research to expand beyond the traditional East vs. West dichotomy (often  
659 limited even further to comparisons between Japan and the US). While it seems clear that the  
660 two measures of happiness presented here miss some aspect crucial to the cultures outside of the  
661 Eastern and Western contexts in which the measures were developed, it is less clear what these  
662 aspects are. To fill this gap in the literature remains an important next step for researchers  
663 interested in developing a universal measure of happiness.

#### 664 **Limitations and Future Directions**

665         The current study used country as a proxy for culture; however, country boundaries do  
666 not always correspond to cultural boundaries. Indeed, cultural boundaries are often extremely

667 difficult to define, as numerous subcultures may exist within dominant cultures (Taras & Steel,  
668 2009). Thus, many researchers simplify or bypass the cultural definition problem by using  
669 country as the grouping variable. While using country as a proxy for culture far from a perfect  
670 solution, it does allow researchers to more easily compare results across studies. Additionally, it  
671 allows researchers to use country-level data, such as HDI, as predictors of individual level  
672 outcomes. This method is also of particular relevance to national governments interested in the  
673 well-being of their citizens.

674           Another potential limitation of the present study is the use of members of college  
675 communities as the primary source of participants. While data from non-college participants  
676 were also collected in a handful of countries, they were excluded from the present analyses to  
677 match the samples across countries and avoid confounding the results (Schwartz, 2014). Because  
678 the vast majority of psychological studies use student participants (Li, Yuk Kim, Karp, &  
679 Takooshian, 2012), the results of this study are directly relevant to most research on happiness  
680 elsewhere in the literature. For example, the seven cultural dimensions used in the subjective  
681 country level correlations presented here were originally developed using college student and  
682 teacher samples (Schwartz, 2006), making the results directly comparable to those from the  
683 current study's sample. Additionally, since the present analyses are not intended to address the  
684 mean level of well-being across nations, but rather how coherent the construct is in each culture,  
685 there is less reason to assume college students will differ drastically from the rest of the  
686 population (Flere & Lavrič, 2008). If anything, college students should be "WEIRDer" than  
687 other people in their countries because they are more 'E'ducated and often 'R'icher. Thus, any  
688 differences that are found among countries are even more notable.

689           Lastly, the results from this study represent only a first step in the assessment of cross-  
690 cultural differences in happiness. While the evidence suggests that the interdependent measure of  
691 happiness is more consistently reliable across countries than the independent measure, the next  
692 step would be to establish how these differences in reliability translate into mean level  
693 differences and predictors of happiness across countries. However, we believe establishing the  
694 reliability of the measures across cultures represents an important first step for the broader goal  
695 of comparing happiness around the world.

## 696 **Conclusion**

697           In many ways, the two happiness measures performed surprisingly similarly across  
698 countries, despite their conceptual and theoretical differences and different national origins.  
699 Around the world, individuals who were more likely to report being independently happy were  
700 also more likely to report being interdependently happy. However, methodological differences  
701 between the two measures still have important implications for the future study of happiness  
702 across cultures. Specifically, the reliability of the Interdependent Happiness Scale (IHS)  
703 performed more consistently across countries than the Subjective Happiness Scale (SHS).  
704 Additionally, the reliability of the IHS was less dependent upon country-level factors, such as the  
705 economic development of a country, in that sense making it a less “WEIRD” measure. Thus,  
706 cross-cultural researchers interested in incorporating a more universal measure of happiness  
707 should consider the Interdependent Happiness Scale as a useful tool for cross-cultural  
708 comparisons. Additionally, the weaker performances of both happiness measures in the Middle  
709 East and Africa point to the need for more research to expand beyond the traditional East vs.  
710 West dichotomy. Thus, while currently the IHS seems to be a better cross-cultural instrument  
711 than the SHS, future research should explore other emic measures of happiness developed in the

712 Middle East and Africa that can provide a more universal and comprehensive definition of  
713 happiness.

714           What does it mean to be happy? The answer, the present study shows, indeed depends to  
715 an important degree on where you live.

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Fig 1.

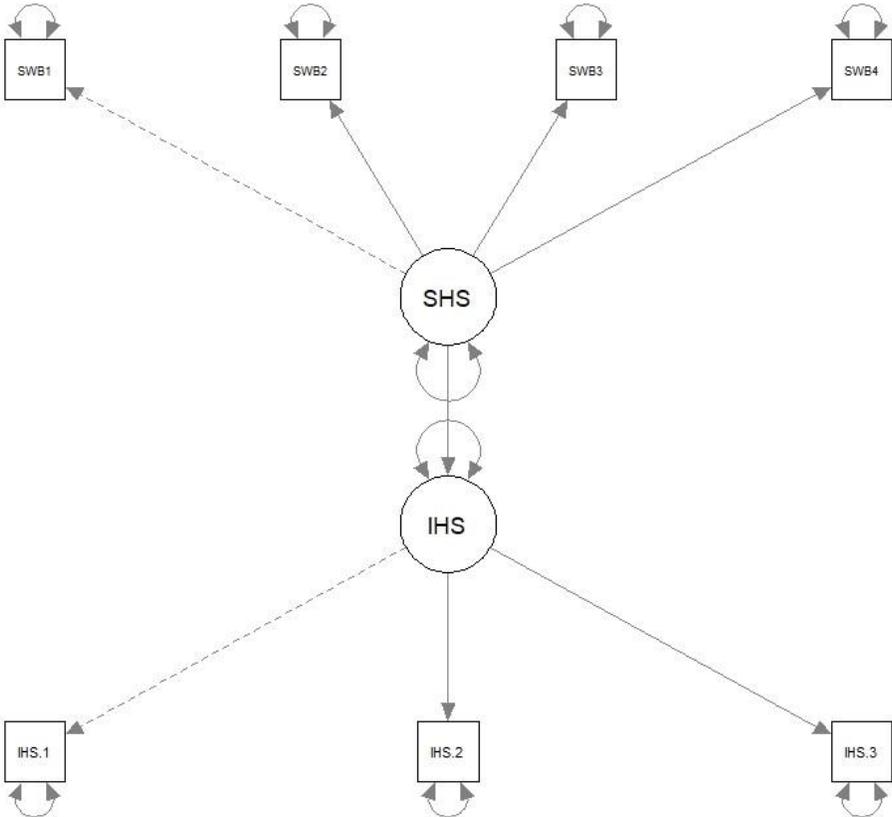


Fig 2.

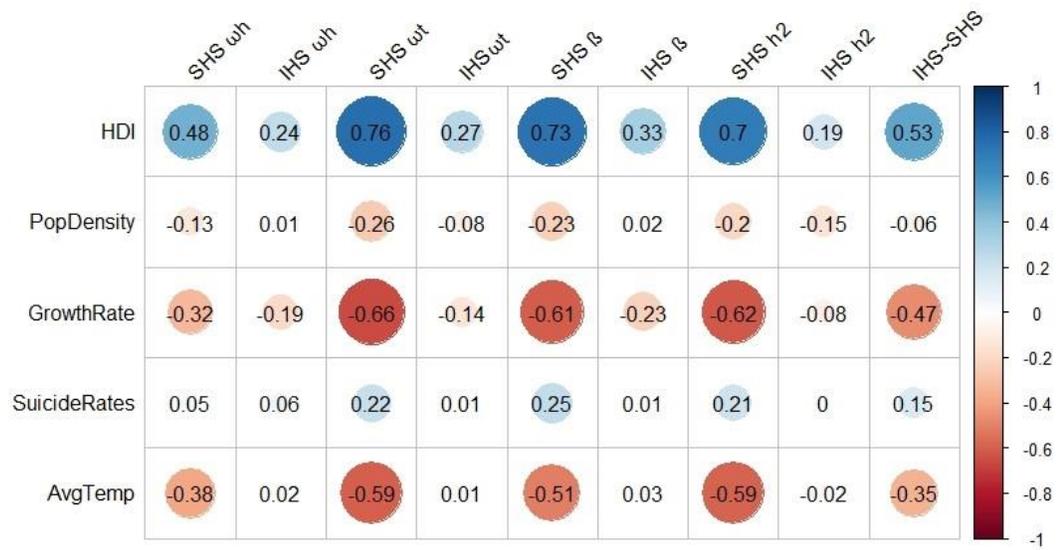


Fig 3.

