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RESEARCH PAPER

Introduction to a Culturally Sensitive Measure of Well-Being: Combining Life Satisfaction and Interdependent Happiness Across 49 Different Cultures

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Abstract
How can one conclude that well-being is higher in country A than country B, when well-being is being measured according to the way people in country A think about well-being? We address this issue by proposing a new culturally sensitive method to comparing societal levels of well-being. We support our reasoning with data on life satisfaction and interdependent happiness focusing on individual and family, collected mostly from students, across forty-nine countries. We demonstrate that the relative idealization of the two types of well-being varies across cultural contexts and are associated with culturally different models of selfhood. Furthermore, we show that rankings of societal well-being based on life satisfaction tend to underestimate the contribution from interdependent happiness. We introduce a new culturally sensitive method for calculating societal well-being, and examine its construct validity by testing for associations with the experience of emotions and with individualism-collectivism. This new culturally sensitive approach represents a slight, yet important improvement in measuring well-being.

Keywords Culture · Happiness · Well-being · Interdependent happiness · Life satisfaction · Cultural sensitivity · Selfhoods · Self-construals

1 Introduction

How can well-being be measured and compared between countries where the concept of well-being is construed and valued differently? Cultural context is associated with substantial variability in the way well-being is construed and valued (Delle Fave et al., 2016; Kwan et al., 1997; Lu & Gilmour, 2006; Uchida & Ogihara, 2012; Uchida & Oishi, 2016; Węziak-Białowolska et al., 2019). These findings highlight an important hurdle facing researchers who investigate "levels of happiness" across the countries of the world—how can one reasonably conclude that country A is happier than country B, when happiness is being measured according to the way people in country A think about happiness?

In this paper we address this issue by proposing a new method to measure individual and societal levels of well-being. We report on the development of a new method that provides the opportunity to measure levels of well-being according to the particular way

well-being is construed and valued within one's indigenous culture. This new culturally sensitive method may improve the quality of research on individual and/or societal differences in well-being, because each score reflects one's level of well-being according to how well-being is construed and valued within his or her particular cultural context. By developing this new method, we seek to increase the fidelity of research on well-being across diverse cultural contexts characterized by different beliefs about what is well-being and how to achieve it.

1.1 Measures of Well-Being and Cultural Context

In this study we use the term, "well-being" to represent a higher order construct that includes both happiness and life-satisfaction (Diener et al., 2002). It is important to note that some theoretical frameworks do draw distinctions between different types of well-being (e.g., eudaimonic and hedonic) and that links between culture and happiness are not necessarily the same as the association between culture and life-satisfaction (Huppert, 2014). We used the higher order approach of well-being here because we were explicitly interested in capturing cultural variability in how well-being is construed and valued. By using a broad array of well-being measures that includes both happiness and life-satisfaction, we were better positioned to characterize how each culture tends to construe and value particular types of well-being.

As with the bulk of psychological research, the majority of investigations of well-being worldwide has been carried out through a WEIRD lens—a lens of Western, Educated, Industrialized, Rich and Democratic societies (Henrich et al., 2010). Not surprisingly therefore, many multi-country studies report a positive association between cultural levels of individualism and well-being (Cheng et al., 2016; Diener et al., 1995; Hofstede, 2001; Kuppens et al., 2008; Steel et al., 2018). One possible interpretation of this finding is that individualism socializes people to be happier (Krys et al., 2019a; Oyserman et al., 2002).

Although this may be the case, an alternative interpretation is that the link between individualism and societal well-being may, in part, be due to how well-being is being measured. Many of the studies linking individualism with well-being use life satisfaction (LS) of an individual person as the primary means of measuring well-being (Cheng et al., 2016; Diener et al., 1995; Hofstede, 2001; Jasielska et al., 2018; Kuppens et al., 2008; Steel et al., 2018). However, LS is a concept developed from a western and individualistic perspective. Personal LS seems to be particularly tuned to a WEIRD way of thinking (Uchida & Ogihara, 2012). Indeed, when alternative measures of well-being are used, the association between cultural-level individualism and well-being is attenuated (Krys et al., 2020).

One alternative way to measure well-being, and happiness in particular, is interdependent happiness (IH) (Hitokoto & Uchida, 2015). IH is the degree a person is interpersonally harmonized, ordinary, quiescent, and connected to the collective way of well-being. IH is theorized to reflect Confucian Asian cultural systems but is also highly valued across other collectivistic cultural contexts (Mathews & Izquierdo, 2008). LS and IH do tend to be correlated with one another (Krys et al., 2019b), suggesting that they may share a common core. However, IH and LS emphasize different aspects of well-being: IH is more relationship-oriented and LS is more achievement-oriented. Interestingly, when well-being is measured using IH the link between individualism and well-being is no longer significant (Krys et al., 2020).

Many measures of well-being explicitly specify the individual as the primary reference point. This approach may not accurately capture well-being as construed by many people

living outside of WEIRD cultural contexts (Krys et al., 2022a). As opposed to referencing the individual, many people throughout the world tend to reference their family as the key component and reference point when considering well-being and quality of life (Delle Fave et al., 2016). A recent study showed that when well-being is measured by using the family as the key reference group (as opposed to the individual), the association between individualism and societal well-being is attenuated (Krys et al., 2020). The strength of the association between country-level individualism and well-being is reduced when the family is used as the reference point as opposed to the individual. These findings suggest that using a single measure to quantify well-being across diverse cultural contexts may not be ideal.

1.2 A New Approach

Extant worldwide research on well-being indicates that a "one size fits all" approach may not be suitable to make meaningful comparisons between countries that construe well-being in different ways (Krys et al., 2020; Uchida & Ogihara, 2012). One reason why this may be the case, is that different cultures tend to idealize different forms of well-being. It may also be the case that LS does not accurately capture well-being within cultures where IH tends to be highly valued. Taking these issues into account, we propose to explicitly consider how well-being is construed and valued within one's cultural context and evaluate individual levels of well-being according to this culture-specific conceptualization of well-being. This approach provides an opportunity to quantify well-being in a more culturally sensitive way.

In this approach, each individual's well-being score is tailored to their own culture's indigenous way of construing and valuing well-being. First, we obtained norms representing culture-level type of well-being by measuring how much people tend to idealize four different types of well-being. Prior research shows that self-reported idealization of well-being is one way to effectively capture cultural-level notions of well-being (Diener et al., 2000). Based on existing, large-scale, cross-national research (Delle Fave et al., 2016; Hitokoto & Uchida, 2015; Krys et al., 2019b, 2020; Kwan et al., 1997; Lu & Gilmour, 2006; Uchida & Ogihara, 2012; Uchida & Oishi, 2016), we selected the following four types of well-being: (i) Life-satisfaction targeting the individual as the key reference point, (ii) Life-satisfaction targeting the family as the key reference point, (iii) Interdependent happiness targeting the individual as the key reference point, and (iiii) Interdependent happiness targeting the family as the key reference point. Next, we asked participants to think about their own (individual and family-level) actual levels of well-being and measured self-reported well-being using each of the above four measures. To calculate culturally sensitive levels of well-being, self-reported well-being scores were weighted according to how much one's own culture tended to idealize each particular type of well-being. Thus, each participant's well-being score represents his or her level of well-being in accordance with the type of well-being as idealized within that culture.

In this paper we describe this new, culturally sensitive approach to measuring well-being across 49 diverse cultural contexts. Based on this measure, we rank ordered each country. We then compared the rank order of countries using the new culturally sensitive approach to the rank order using the standard "one size fits all" approach (Life-satisfaction targeting the individual as the key reference point). In order to provide empirical support for this approach, we also investigate how culturally objective is the standard "one size fits all" approach. We do this in two ways. First, we measure how much each culture tends to idealize LS over IH. Second, we investigate if well-being tends to be underestimated when

using LS as compared to IH. In addition, we investigated convergent and discriminant validity of the new culturally sensitive approach by testing for associations between culturally sensitive well-being and the experience of positive and negative emotions within each country (Krys et al., 2022b, c). Lastly, to examine how the new culturally sensitive measure fits within the scope of research on cross-cultural comparisons of well-being, we derived country-level data representing individualism vs. collectivism (Hofstede, 2001; Krys et al., 2019a, 2019b, 2022a; Minkov et al., 2017; Schwartz, 2008), and cultural models of selfhood that serve as a differentiated measure of individualism vs. collectivism embedded in our data collection (Vignoles et al., 2016). Lastly, we carried out a series of regression analyses using country level data as predictors; and the new culturally sensitive and the standard "one size fits all" measures of well-being as criterion variables.

2 Methods

2.1 Participants and Countries

We collected self-report data from a total of 12,888 participants across 49 different countries[1] (see Krys et al., 2020, 2022a). Participants were recruited from each of the following countries or territories: Argentina ($N=175$), Austria ($N=320$), Australia ($N=340$), Brazil ($N=606$), Bhutan ($N=119$), Canada ($N=240$), Chile ($N=221$), China ($N=199$), Colombia ($N=466$), Croatia ($N=140$), Czech Republic ($N=201$), El Salvador ($N=240$), Estonia ($N=200$), France ($N=216$), Georgia ($N=234$), Germany ($N=106$), Ghana ($N=266$), Greece ($N=427$), Guatemala ($N=111$), Hong Kong ($N=291$), Hungary ($N=831$), Iceland ($N=353$), Indonesia ($N=198$), Iran ($N=199$), Ireland ($N=244$), Italy ($N=288$), Japan ($N=198$), Korea ($N=208$), Lithuania ($N=296$), Luxembourg ($N=220$), Malaysia ($N=190$), Mexico ($N=175$), the Netherlands ($N=194$), Nigeria ($N=137$), Norway ($N=250$), Pakistan ($N=240$), Poland ($N=472$), Portugal ($N=260$), Romania ($N=290$), Russia ($N=270$), Saudi Arabia ($N=178$), Serbia ($N=210$), Slovakia ($N=311$), Switzerland ($N=344$), Taiwan ($N=210$), Turkey ($N=202$), UK ($N=146$), Ukraine ($N=210$), and USA ($N=446$). Overall, average sample size was $N=264$ ($N_{min}=106$ for Germany; $N_{max}=831$ for Hungary), 59.6% of participants identified as female, 39.3% as male, 0.4% as other, and 0.7% left the question about gender blank; the mean age of participants was 25.18 years (SD = 9.51); respondents were mostly students (85%); questionnaires were filled-in on-line or with a paper–pencil method (depending on what is popular and more convenient for participants in a given country); data collection was run in 2017–2019. Supplementary online material (SOM) provides detailed demographic characteristics for all participants within each analysed country or territory. The study was approved by the Committee of Ethics in Scientific Research of the Institute of Psychology of the Polish Academy of Sciences (approval #7/11/2017).

[1] Additional data from a Bulgarian sample were excluded from the current analyses, as ideal happiness measures were not administered for that sample.

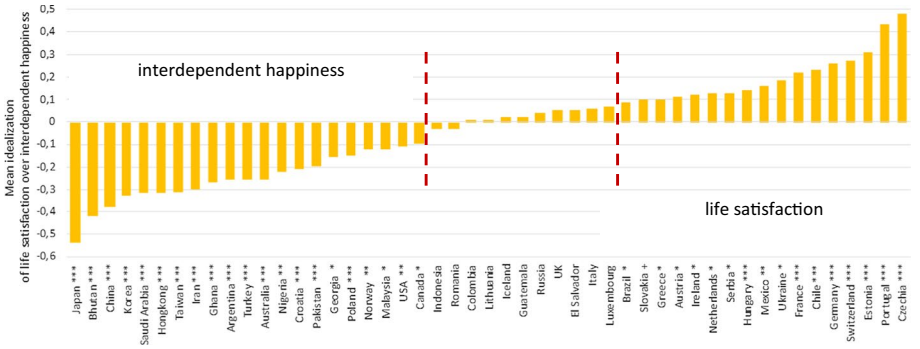

Fig. 1 The difference in idealization of LS and IH around the world (can be explained by cultural models of selfhoods). Measures of well-being may need to become more culturally sensitive. In countries on the right, life satisfaction (LS) is idealized over interdependent happiness (IH); in countries on the left, IH is idealized over LS. The height of bars illustrates the difference between ideal level of LS and ideal level of IH. The difference in idealization of well-being types can be explained by cultural models of selfhoods, $r(48) = 0.64$, $p < 0.001$: Members of cultures fostering self-expressive selfhoods tend to idealize LS over IH, and members of cultures fostering harmonious selfhoods tend to idealize IH over LS. + < .10; * < 0.05; ** < 0.01; *** < 0.00

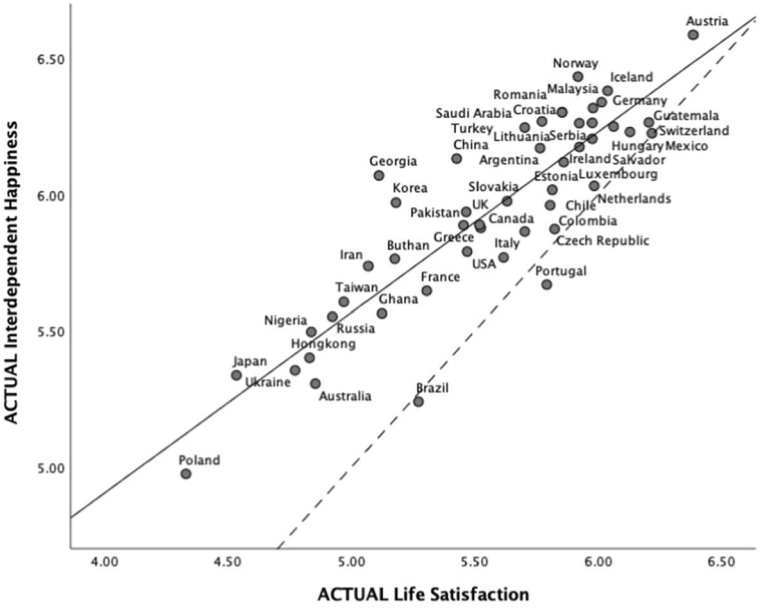

Fig. 2 Life satisfaction underestimates well-being as compared to interdependent happiness. Association between actual LS and actual IH is illustrated by solid fit-line (IH = 0.66 * LS + 2.26). Dashed fit-line illustrates hypothetical state when both types of well-being are equal (IH = 1 * LS + 0). Distance from the dashed line informs how much LS under-estimates (countries above dashed-line) or over-estimates (for few countries below the dashed line) well-being as compared to IH

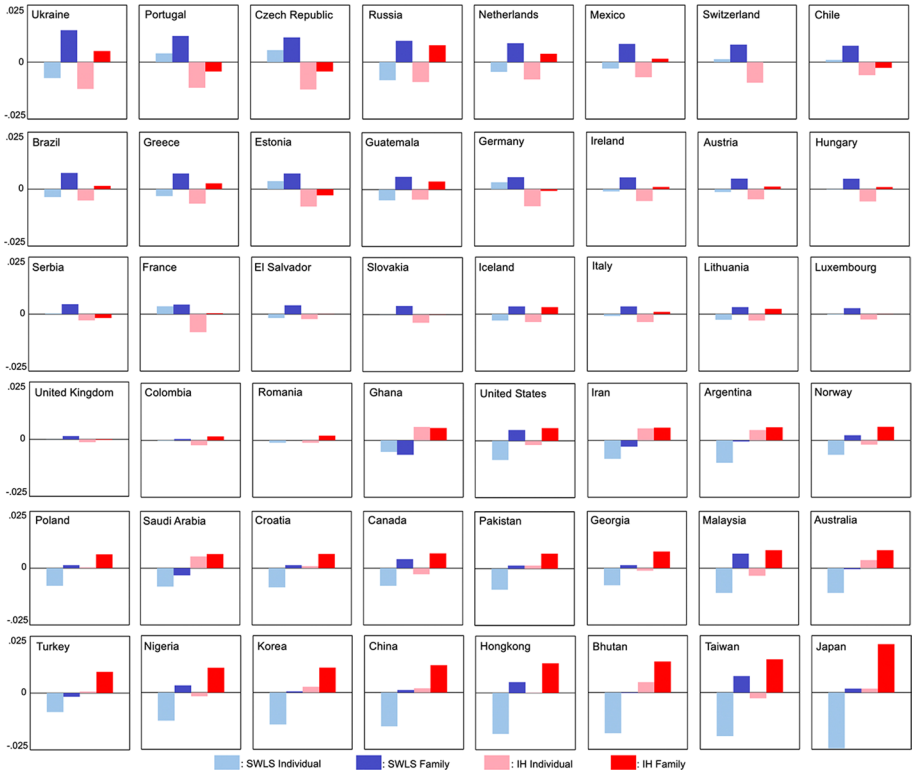

Fig. 3 Country-level weights for each type of well-being. Weights represent how much each type of well-being is valued (i.e., idealized) within each country. To do so, we calculated the proportion percentage (out of 100%), that each type of well-being tended to be valued in that country. Countries towards the top (i.e. top 3 rows) are those with higher SWLS Family weights (dark blue), while countries towards the bottom (i.e. bottom 3 rows) are those with higher IH Family weights (red)

2.2 Measures

Questionnaires were administered in the main official language in a given country with the following clarifications (teams in Luxembourg and Switzerland employed German questionnaire; teams in Canada, Ghana and Nigeria English) and one exception (in Bhutan participants responded in English, the primary language of instruction—despite this fact, our findings locate Bhutan among other cultures of Eastern Asia [e.g., see Figs. 1, 2, 3]). For each scale, teams were instructed to follow the back-translation procedures in preparations of questionnaires (unless an adaptation of a scale was already available in a given language).

2.2.1 Cultural Norms for Type of Well-Being

Participants reported on how much they idealized each of four different types of well-being: (i) Life-satisfaction targeting the individual as the key reference point, (ii) Life-satisfaction targeting the family as the key reference point, (iii) Interdependent happiness targeting the individual

as the key reference point, and (iiii) Interdependent happiness targeting the family as the key reference point. Idealization was used based on prior research demonstrating the efficacy of this term when measuring cultural norms of happiness across 41 different societies (Diener et al., 2000). As such, participants were instructed using the following statement, *instead of answering how much you agree with the statements, we would like you to indicate how much you think the ideal or perfect person would agree with each statement.* Participants rated items on a nine-point Likert-type scale with five labelled points: 1 (*doesn't describe him/her at all*), 3 (*describes him/her a little*), 5 (*describes him/her moderately*), 7 (*describes him/her very well*), 9 (*describes him/her exactly*). Each item was paired with the following statement, *Please indicate how much you think the ideal or perfect person would agree with this statement.*

For life satisfaction (LS), we used the Satisfaction with Life Scale (SWLS) (Diener et al., 1985). The SWLS has adequate reliability and validity across a broad range of different cultural contexts (Pavot & Diener, 2008). For personal LS (ideal), participants responded to all five items of the SWLS (e.g., *You are satisfied with your life*). For family LS (ideal), participants responded to five items of the family version of the SWLS (e.g., *Your family is satisfied with its life)* (Krys et al., 2019b).

For interdependent happiness (IH), we used the Interdependent Happiness Scale (IHS) (Hitokoto & Uchida, 2015). The IHS has adequate reliability and validity across broad range of different cultural contexts (Datu et al., 2016; Hitokoto & Takahashi, 2020; Hitokoto & Uchida, 2015). For personal IH (ideal), participants responded to all nine items of the IHS (e.g., *You believe that you and those around you are happy*). For family IH (ideal), participants responded to modified items of the IHS (e.g., *You believe that your family and those around your family are happy*). Each scale showed adequate reliability (all α's > 0.79).

2.2.2 Actual Levels of Well-Being

Participants were asked to think about their own, or family-level, actual levels of well-being. For actual levels of well-being, we used the SWLS for LS and the IHS for IH, and included both the individual-focused and family-focused versions for each. Thus, participants reported on their actual level of well-being using each of the four types of happiness scales; LS (individual), LS (family), IH (individual) and IH (family). Each scale showed adequate reliability (all α's > 0.70).

2.2.3 Culturally Sensitive Well-Being

Culturally sensitive levels of well-being were calculated based on the following formula:

$$\text{LS ind}_{\text{weight}} = \frac{\text{LS ind}_{\text{ideal}}}{\text{LS ind}_{\text{ideal}} + \text{LS fam}_{\text{ideal}} + \text{IHS ind}_{\text{ideal}} + \text{IHS fam}_{\text{ideal}}}$$

$$\text{LS fam}_{\text{weight}} = \frac{\text{LS fam}_{\text{ideal}}}{\text{LS ind}_{\text{ideal}} + \text{LS fam}_{\text{ideal}} + \text{IHS ind}_{\text{ideal}} + \text{IHS fam}_{\text{ideal}}}$$

$$\text{IHS ind}_{\text{weight}} = \frac{\text{IHS ind}_{\text{ideal}}}{\text{LS ind}_{\text{ideal}} + \text{LS fam}_{\text{ideal}} + \text{IHS ind}_{\text{ideal}} + \text{IHS fam}_{\text{ideal}}}$$

$$\text{IHS fam}_{\text{weight}} = \frac{\text{IHS fam}_{\text{ideal}}}{\text{LS ind}_{\text{ideal}} + \text{LS fam}_{\text{ideal}} + \text{IHS ind}_{\text{ideal}} + \text{IHS fam}_{\text{ideal}}}$$

$$\begin{aligned}\text{CS Well-being} = {} & (\text{LS ind}_{\text{actual}} \cdot \text{LS ind}_{\text{weight}}) + (\text{LS fam}_{\text{actual}} \cdot \text{LS fam}_{\text{weight}}) \\ & + (\text{IHS ind}_{\text{actual}} \cdot \text{IHS ind}_{\text{weight}}) + (\text{IHS fam}_{\text{actual}} \cdot \text{IHS fam}_{\text{weight}})\end{aligned}$$

where LS = life satisfaction, IHS = interdependent happiness scale, ind = individual focused, fam = family focused, CS = culturally sensitive.

Weights represent how much each type of well-being is valued (i.e., idealized) within each country. To do so, we calculated the proportion percentage (out of 100%), that each type of well-being tended to be valued in that country. To calculate individual-level CS Well-being values, each participant's self-reported actual well-being score was multiplied by the country-level weight (in the country in which they resided) for that type of well-being. The potential range of the CS Well-being index is from 1 to 9, where lower values correspond to lower values of well-being (across all measures), and higher vales correspond to higher levels of well-being (across all measures).

2.2.4 Experience of Positive and Negative Emotions

We investigated convergent and discriminant validity of the new culturally sensitive approach by testing for associations between culturally sensitive well-being and the experience of positive and negative emotions within each country (Krys et al., 2022a). Participants reported the frequency that they experienced 30 different emotions, using a 9-point Likert scale [1 (*never*), 2 (*a couple of times a year*), 3 (*a couple of times a month*), 4 (*a couple of times a week*), 5 (*once a day*), 6 (*a couple of times a day*), 7 (*almost every single hour*), 8 (*a couple of times an hour*), and 9 (*all the time*)]. 16 of the items were for positive emotions (enthusiastic, excited, elated, euphoric, calm, relaxed, peaceful, serene, amused, proud, in love, hopeful, respectful, grateful, self-confident, and authentic) and 14 of the items were for negative emotions (sleepy, dull, sad, sluggish, fearful, nervous, hostile, depressed, bored, embarrassed, ashamed, hateful, angry, and disgusted). The full list of emotions is based on the Affect Valuation Index (Tsai et al., 2006) and research on emotional experience in dignity cultures (Krys et al., 2017; Scherer et al., 1973; Smallenbroek et al., 2017). Each scale showed adequate reliability (all $\alpha's > 0.75$).

2.2.5 Country Level: Individualism and Collectivism

Individualism versus collectivism for each country was derived by averaging across country level scores based on three large-scale publicly available data sets. We opted to average across several data sets because each data set is commonly used in cross-cultural research in happiness and is associated with a unique set of advantages and disadvantages. We calculated an individualism versus collectivism meta-factor by averaging across Hofstede's individualism-collectivism (Hofstede, 2001), Minkov's individualism—collectivism (Minkov et al., 2017), autonomy-embeddedness (Schwartz, 2008), and open society (Krys et al., 2019a). Across all countries, the reliability of the individualism versus collectivism meta-factor was adequate ($\alpha > 0.91$).

2.2.6 Country Level: Cultural Models of Selfhoods

Participants completed the self-construal scale (Vignoles et al., 2016). We used the upgraded version of the scale that includes a total of 8 dimensions (obtained from the first

author of the scale, Vignoles, personal communication; see also Krys et al., 2020); difference vs similarity ($\alpha = 0.76$ for the whole sample, in each country apart from Indonesia[2] $\alpha > 0.58$), self-containment vs connectedness to others ($\alpha = 0.72$ for the whole sample, in forty-five countries $\alpha > 0.60$), self-direction vs receptiveness to influence ($\alpha = 0.76$ for the whole sample, in every country $\alpha > 0.55$), self-reliance vs dependence on others ($\alpha = 0.78$ for the whole sample, in every country $\alpha > 0.53$), consistency vs variability ($\alpha = 0.84$ for the whole sample, in every country $\alpha > 0.66$), self-expression vs harmony ($\alpha = 0.76$ for the whole sample, in every country $\alpha > 0.55$), self-interest vs commitment to others ($\alpha = 0.69$ for the whole sample, in every country $\alpha > 0.49$), and de-contextualized vs contextualized self ($\alpha = 0.74$ for the whole sample, in every country apart from Saudi Arabia $\alpha > 0.54$).

2.3 Statistical Analysis

First, we investigated the cross-cultural equivalence of all measures used to calculate CS well-being and the experience of positive and negative emotions. All data were subjected to a series of multigroup confirmatory factor analysis (MGCFA) in order to test for configural, metric and scalar invariance. However, in spite of the fact that detecting non-invariance in large-scale studies across many countries is extremely rare (Welzel et al., 2021), we obtained evidence that across 90 different tests for invariance, 69 displayed adequate invariance (76%) across all countries in this study (full results provided in SOM). The results of this analysis do not support the conclusion that all measures are *perfectly* comparable and equivalent across all countries. The lack of perfect equivalence in this study is consistent with comprehensive and consistent evidence that detecting non-invariance in large-scale studies across many countries is extremely rare (Marsh et al., 2018; Rutkowski & Svetina, 2014; Welzel et al., 2021; Zercher et al., 2015). Within the context of research on large numbers of groups (~ > 20) (Rutkowski & Svetina, 2014; Welzel et al., 2021), this finding does provide some support for the equivalence and fidelity of these measures across cultural contexts. In addition, the fact that we observed some variability in terms of the functioning of scales across cultures highlights the importance of creating new measures of well-being that are structured in a more culturally sensitive way.

Next, we sought to document the need for culturally sensitive country-level measures of well-being by calculating country-level differences between the ideal level of LS and IH ($\Delta_{\text{Ideal LS-IH}}$). We then tested for associations with the differences scores and Individualism-collectivism meta-factor, as well as with each type of cultural models of selfhood (for the latter, we employed the Bonferroni correction and set the significance cut-off at $= 0.05/8 = 0.00625$). Second, we investigated how LS either over- or under-estimates country-level well-being as compared to IH. We did so by plotting actual levels of both types of well-being against each other, and by analyzing the distance between them.

We then carried out the main analyses on culturally sensitive well-being. Culturally sensitive well-being was calculated for each participant and then averaged within each country. We then rank ordered countries based on mean levels of culturally sensitive well-being. We compared the rank order to the rank order derived based on average self-reported life satisfaction, as measured by the SWLS (individual focused).

[2] We found problematic reliabilities for every self-construal dimension within the Indonesian sample and therefore excluded Indonesian data from the analysis. The full set of reliabilities for cultural models of selfhoods, including those in Indonesia, are provided as SOM. Had the Indonesian sample been included in the analyses, the picture of results would not be substantially different.

We then tested for associations between the culturally sensitive well-being and the experience of positive and of negative emotions. Within each country we correlated culturally sensitive well-being values with the mean levels of positive emotional experience and negative emotional experience, while controlling for age and gender.

Lastly, we carried out a series of regression analyses testing for associations between cultural levels of individualism—collectivism and each type of well-being measure (culturally sensitive and SWLS individual). We also carried out a regression analysis testing for associations between cultural models of selfhoods (again employing Bonferroni correction) and each type of well-being measure (culturally sensitive and SWLS individual). For all individual level analyses, we controlled for age, gender and education of their parents, and for all country level analyses, we controlled for GDP per capita. We included GDP as a covariate in order to account for potential variance of well-being explained by economic prosperity across countries (Joshanloo et al., 2019).

3 Results

3.1 Country-Level Differences Between the Ideal Level of LS and IH

Figure 1 displays country-level differences between ideal LS and ideal IH ($\Delta_{\text{Ideal LS-IH}}$). Bars above zero indicate countries where LS tends to be idealized more than IH. Conversely, bars below zero indicate countries where IH tends to be idealized more than LS. We found that IH is idealized more than LS in twenty-one, and LS is idealized more than IH in seventeen out of forty-eight countries (see Fig. 1). In eleven countries the difference was not statistically different than zero. This finding suggests that world-wide rankings based on WEIRD-originating measures, such as LS, of well-being may be biased against Confucian-originating collectivistic type of well-being, such as IH.

We carried out a series of regressions between the difference scores ($\Delta_{\text{Ideal LS-IH}}$, bars on Fig. 1) and eight dimensions of cultural models of selfhood (Vignoles et al., 2016). We found that two dimensions of selfhood, self-expression (vs harmony), and self-direction (vs receptiveness to influence) were associated with country level differences between idealized LS as compared to IH (see Table 1 in SOM). Next, we regressed $\Delta_{\text{Ideal LS-IH}}$ on both these dimensions of selfhood in one analysis and found that self-expression remained significantly associated with differences scores, while self-direction did not ($B_{self\text{-}expression} = 0.365$, $p < 0.001$; $B_{self\text{-}direction} = -0.065$, $p = 0.61$). This finding indicates that LS is idealized over IH in cultures that tend to shape self-expressive selfhood, and that IH is idealized over LS in cultures that tend to shape harmony-oriented selfhoods. We repeated these analyses for the individual-level data (see Table 1 in SOM) and found some small effects (the highest beta = 0.035). Combined, these findings indicate that the phenomenon we describe is of cultural nature.

3.2 Country-Level Differences Between the Actual Levels of LS and IH

We found that across our data set, actual levels of LS and IH were highly correlated with one another ($r_{\text{actual LS x IH}} = 0.88$, $p < .001$). The high country-level correlations between actual levels of LS and IH may indicate that the conclusions tend to be essentially the same irrespective of which type of well-being one employs. This reasoning however, was not supported by our data. Despite the observation that actual LS and IH were strongly

associated with one another, one variable may systematically bias country level comparisons or rankings. In order to investigate this issue, we plotted the association between IH and LS on Fig. 2, with the solid line representing the actual fit-line, and the dashed line representing the hypothetical fit-line at which LS and IH would be completely undifferentiated from one another (i.e., LS = IH). The larger the gap between the solid and the dashed line, the more differentiated LS and IH are from one another. The observation that the solid and the dashed lines are different from one another indicates that LS and IH are not measuring the exact same construct across different countries.

An inspection of Fig. 2 also indicates that there are some countries where the LS and IH approaches tend to measure well-being in a similar way. For example, Mexico, Switzerland, the Netherlands, Brazil, are all in close proximity to the dashed line. However, the vast majority of countries in our sample, tend to lie distant from the dashed line indicating that for these countries there tends to be a difference between actual LS and IH. At the country-level of analyses, the SD for well-being revolved around 0.40 ($SD_{LS} = 0.48$, $SD_{IH} = 0.36$). This finding means that approximately half of countries in our sample display a pattern where country levels of well-being are at least one standard deviation lower when derived using LS as compared to IH.

For countries with the largest gap between actual LS and IH, such as Georgia, Japan, China, and Korea ($\Delta_{\text{Actual LS-IH}} < -0.70$), the well-being score would be around two standard deviations higher had it been based on IH and not LS. Combined, these results indicate that well-being around the world is often underestimated by employing WEIRD-themed measures of well-being, such as LS alone, as compared to other measures, such as IH.

3.3 Cultural Norms for Type of Happiness

Figure 3 displays country level weights for each type of well-being. Each weight is calculated based on average idealized well-being scores for all participants within each country. For illustration, weights are plotted with respect to zero, where zero represents no change in weight. In terms of calculating CS Well-being, zero corresponds to a weight of exactly 25% (i.e., 1 out 4 types of well-being). Positive values indicate that a type of well-being is idealized more, and thus weighed more (> 25%) as compared to the other types of well-being. While negative values indicate that a form of well-being is idealized less, and thus weighted less (< 25%) as compared to the other types of well-being.

As can be seen, across the entire sample, there exists considerable heterogeneity in the pattern of well-being weights (Fig. 3). For example, for individual life satisfaction (light blue), the Czech Republic showed the highest weight (0.0052), while Japan showed the lowest weight (− 0.0246). For family life satisfaction (dark blue), Ukraine showed the highest weight (0.0140), while Ghana showed the lowest weight (− 0.0063). For individual interdependent happiness (pink), Ghana showed the highest weight (0.0059), while the Czech Republic showed the lowest weight (− 0.0120). For family interdependent happiness (red), Japan showed the highest weight (0.0212), and Portugal showed the lowest weight (− 0.0041).

3.4 Rankings According to Culturally Sensitive Happiness

A comparison of the two rank orders (column furthest to the right: Δ in Table 2 in SOM) reveals that while some countries remained at approximately the same rank (Δ < 3) (n = 36), many countries showed substantial differences in rank across the two methods (Δ ≥ 3)

(n = 12). The three countries that showed the largest shifts in rank order between the two methods were Norway (Δ = 15), Malaysia (Δ = 19) and France (Δ = − 13). An inspection of the weights for each country (Fig. 3), indicates that both Norway and Malaysia shifted, in part, because their SWLS individual scores were weighted less (Norway = − 0.0063, Malaysia = − 0.0109) with respect to the other types of well-being. France, on the other hand, showed a lower ranking using the CS Well-being approach than when using the SWLS approach, occurring in part, because SWLS individual scores were weighted more (0.0035) with respect to the other types of well-being.

3.5 Culturally Sensitive Happiness and Emotional Experience

Table 2 (see in SOM) displays correlation coefficients (partial Pearson's r) for associations between individual differences in culturally sensitive well-being and the experience of positive and negative emotions. Partial *r* values represent the association within each country between individual differences in well-being and the experience of emotions, while controlling for age, gender and education of their parents. Across all countries, individual differences in CS Well-being showed a significant positive association with the experience of positive emotions (all *p* 's < 0.001). The majority of countries also showed a significant negative association between CS Well-being scores and the experience of negative emotions (n = 40, $p < 0.05$ vs. n = 8 $p > 0.05$). A comparison of strength of correlation coefficients derived using the CS Well-being approach versus the SWLS approach revealed that the link with the experience of positive emotions tended to be stronger when using CS Well-being than the SWLS approach (mean-value: CS Well-being: $r = 0.455$; SWLS: $r = 0.429$, $t = 3.10$ $p = 0.003$), the link with the experience of negative emotions tended to be stronger when using SWLS than the CS Well-being approach (mean-value: CS Happiness: $r = -0.215$; SWLS: $r = -0.234$, $t = 3.17$, $p = 0.003$). These findings indicate that both ways of measuring well-being and emotional experiences work in a similar fashion, and also suggests that CS may be more tuned to positive emotions and SWLS may be more tuned to negative emotions (see Table 2 in SOM).

3.6 Culturally Sensitive Happiness, Individualism and Selfhoods

Table 6 in SOM displays the results of regression analyses testing for associations between each well-being measurement approach and culture level variables. We found that country-level SWLS scores were associated with individualism (B = 0.435, $p = 0.018$), while country-level CS well-being scores were not (B = 0.154, $p = 0.234$). The attenuated correlation for CS Well-being as compared to SWLS indicates that CS Well-being may be more culturally objective (i.e., less biased towards individualistic values) with respect to SWLS (see Table 6 in SOM).

For cultural models of selfhood (self-construal scale), we found that country-level SWLS scores were positively associated with self-direction versus receptiveness to influence ($B = 0.724$, $p = 0.003$), consistency versus variability ($B = 0.497$, $p = 0.001$), self-expression versus harmony ($B = 0.594$, $p = 0.001$) and de-contextualized versus contextualized self ($B = 0.795$, $p < 0.001$). For CS Well-being, we found that country-level CS well-being scores were positively associated only with de-contextualized versus contextualized self ($B = 0.444$, $p = 0.001$). This finding also suggests that CS well-being may be more culturally objective than SWLS.

4 Discussion

We developed a new approach to measure levels of well-being across diverse cultural contexts. We designed a new culturally sensitive approach to measuring well-being along two dimensions based on mounting empirical evidence that cultures vary in the way well-being and/or happiness is valued and construed. Cultures vary in relative focus on the individual versus the family (Delle Fave et al., 2016; Krys et al., 2019b, 2022a), and in construing well-being using an individual-focused life satisfaction framework versus an interdependent conceptual framework (Hitokoto & Uchida, 2015; Krys et al., 2020). Accordingly, our new, culturally sensitive approach adjusts individual-level well-being scores according to the particular type of well-being that tends to be valued within a respondent's indigenous culture. This new approach represents an incremental improvement to the array of methods available to researchers seeking to measure, describe, and compare levels of well-being across the world.

It is important to note that, empirically, the CS approach is not substantially different from the vast array of other well established quantitative measures of well-being. Indeed, our new CS measure of well-being is explicitly comprised of several thoroughly tested and well validated measures of well-being. Each of the measures used to calculate CS Well-being, as well as many others, has been shown to be highly reliable and valid across many different cultural contexts. We acknowledge that the current status quo of empirical research on well-being is highly valid, credible, and valuable. Empirically, the advent of the CS approach represents a slight, yet important, improvement in the fidelity of well-being measurement.

The CS approach represents a substantial improvement with respect to other measures when considered conceptually. The vast majority of existing evidence for differences in country-level well-being was derived based on the use of identical measures across diverse cultural contexts (Cheng et al., 2016; Diener et al., 1995; Hofstede, 2001; Jasielska et al., 2018; Kuppens et al., 2008; Steel et al., 2018). Well-being research is a subfield within psychological science that is in need of tools that are more applicable across diverse cultural contexts. Many large scale studies show that an overwhelming majority of empirical psychological research is based on WEIRD samples (Adams et al., 2017; cf. Lee et al., 2021). For example, an analysis of the top journals across six sub-disciplines of psychology found that 68% of participants were American and that 96% of participants were from Western industrialized nations (Arnett, 2008). The development of the CS approach to measure well-being is a marked, incremental step towards conceptualizing psychological phenomena less ethnocentrically.

The CS approach involves the use of several different previously established and well-validated measures. Although all the measures used in our study have been shown to be valid and reliable across several different cultural contexts, there also exists evidence that different well-being measures (including the IH) do not perform in the same way across different cultural contexts. Recently Gardiner et al. (2020) found that well-being measures tend to perform better when they are used within the culture in which they were developed. This finding further supports the importance and potential utility of using culturally sensitive measures of well-being for large-scale cross-cultural research.

We found that individual LS, as measured by the SWLS, is positively associated with country-level values of individualism. This finding is consistent with prior reports that LS tends to covary with societal levels of individualism (Cheng et al., 2016; Diener et al., 1995; Hofstede, 2001; Kuppens et al., 2008; Steel et al., 2018). Conversely, we did not

observe that CS well-being was associated with societal levels of individualism. We did however find that across both types of well-being measures, country level values of de-contextualized versus contextualized self, were positively associated with happiness. De-contextualized versus contextualized self represents how much a person thinks about their identity within the context of others (e.g., *Someone could understand who you are without needing to know which social groups you belong to* vs *If someone wants to understand who you are, they would need to know which social groups you belong to*). Prior research demonstrates that contextualism is an important facet of cultural collectivism (Owe et al., 2013). Our current findings suggest the de-contextualism may also confer some societal characteristics linked to well-being measured in several different ways.

We also found that both methods of measuring well-being tended to be associated with the experience of positive and negative emotions (r = -0.215). This finding supports the construct validity of CS Well-being and contributes to a growing body of research demonstrating the link between emotional experience and life satisfaction (Kang et al., 2003; Kuppens et al., 2008). Across our sample, we also found that the association between CS Well-being and positive emotions ($r = 0.455$) were stronger than between well-being and negative emotions ($r = -0.215$). This finding is consistent with that of a previous study showing that the experience of positive emotions is more strongly related to life satisfaction than the absence of negative emotions (Kuppens et al., 2008). Emotional experience seems to play an important role in determining many different forms well-being, that include happiness and LS.

This study and the CS approach are limited in several important ways. We focused on only two different types of well-being originating from WEIRD and Confucian cultural contexts: LS and IH. There exist other forms of well-being and/or happiness that are applicable to people of other cultures. For example, spirituality is strongly associated with well-being in Africa and Latin America (Selman et al., 2013), and dispositional *simpatico* (emphasis on expressive displays of personal charm, graciousness, and hospitality) is an important part of well-being and happiness within many Latin-American cultures (Sanchez-Burks et al., 2000). This study is also limited in terms of the way participants responded to each scale. More specifically, being asked about one's individual life-satisfaction may indirectly affect the way one responds to items related to interdependent happiness of one's family. Furthermore, it remains unclear whether our instructions to think about ideal levels of well-being (Diener et al., 2000) activated the ideal self or the ought self (Higgins, 1987); future studies may need to employ more direct instruction. In addition, this study is limited in the way culture was operationalized. In our analyses, we equated culture with country. However there exists considerable heterogeneity of cultural values within countries, which we did not consider here. These issues need further empirical research to uncover their potential effects.

Furthermore, we conceptualized well-being more in terms of feeling good than functioning well or one's sense of meaning. One's sense of meaning is often construed as an important factor related to happiness and well-being in many different parts of the world (Costin & Vignoles, 2020; Oishi & Diener, 2014). The fact that these other aspects of well-being and/or happiness were not included in the current study is an important limitation. We anticipate that future research will consider how these other forms of well-being and/or happiness can be incorporated into global and cross-cultural studies on well-being. Furthermore, future research is needed based on more representative samples. Our study was based primarily on student samples and serves as one step towards developing more culturally sensitive indices of well-being. Lastly, this study was also limited in that measures individualism-collectivism were obtained from country-level databases and not measured

directly in this study. By adding data from different databases, assessed on national level, an additional level of ambiguity was created. We anticipate that this study will stimulate further empirical research on culturally sensitive methods of measuring many different psychological constructs.

The above limitations and future directions are of "technical" nature. However, it is also important to highlight other broad and conceptual issues. For example, as of the beginning of 2000s, most people and most nations tend to report being happy or very happy (e.g., Oishi et al., 2007). Despite this fact, policy-makers and scientists are striving to develop ways to enhance happiness. We affirm that happiness of many people and many nations can be enhanced, but in our understanding, well-being is not completely interchangeable with happiness. What other-than-happiness constructs people across cultures recognize as key components to their good life, and what are their ideal levels, is currently an important but open empirical question.

The results of this study have practical implications. This tool holds potential to examine the way several other culture-level variables, such as cultural tightness-looseness (Gelfand et al., 2011) or relational mobility (Thomson et al., 2018), may correspond to variation in well-being. Furthermore, our findings illustrate the importance of considering how much a particular construct is valued within a context, and that this approach could be applied to other psychological phenomenon. For example, cultures vary in terms of what types of social policies are valued and prioritized (Krys et al., 2022b). Thus, by incorporating what types of societal goals a culture or country tends to have, policy makers may be better positioned to measure how proximate or distal actual realization of culture-specific goals are.

People around the world want to be happy. Therefore, more and more governing bodies employ well-being as a compass for guiding their societies (Durand, 2018). To escape post-colonial traps in well-being indicators research and in policy-making, researchers and international governing bodies may need to acknowledge that happiness across cultures has various facets. Doing so will promote "buy-in" from many non-WEIRD societies. Large-scale cross-cultural research on well-being will be improved by considering more culturally sensitive measures of well-being. We hope this study serves as one small step forward inspiring this research focus.

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Data Availability and Code Availability Country-level variables are available in supplementary online materials. Individual-level variables are under embargo, but can be shared upon reasonable request of researchers.

Declarations

Conflict of interests No potential conflict of interest was reported by the authors.

Ethical Approval Study was performed in accordance with the ethical standards of the institutional and/or national research committees.

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