



NIH Public Access

Author Manuscript

Qual Life Res. Author manuscript; available in PMC 2015 December 01.

Published in final edited form as:

Qual Life Res. 2014 December ; 23(10): 2809–2818. doi:10.1007/s11136-014-0726-4.

Assessing the Validity of Single-item Life Satisfaction Measures: Results from Three Large Samples

Felix Cheung and Richard E. Lucas

Department of Psychology, Michigan State University

Abstract

Purpose—The present paper assessed the validity of single-item life satisfaction measures by comparing single-item measures to the Satisfaction with Life Scale (SWLS) - a more psychometrically established measure.

Methods—Two large samples from Washington (N=13,064) and Oregon (N=2,277) recruited by the Behavioral Risk Factor Surveillance System (BRFSS) and a representative German sample (N=1,312) recruited by the Germany Socio-Economic Panel (GSOEP) were included in the present analyses. Single-item life satisfaction measures and the SWLS were correlated with theoretically relevant variables, such as demographics, subjective health, domain satisfaction, and affect. The correlations between the two life satisfaction measures and these variables were examined to assess the construct validity of single-item life satisfaction measures.

Results—Consistent across three samples, single-item life satisfaction measures demonstrated substantial degree of criterion validity with the SWLS (zero-order $r = 0.62 - 0.64$; disattenuated $r = 0.78 - 0.80$). Patterns of statistical significance for correlations with theoretically relevant variables were the same across single-item measures and the SWLS. Single-item measures did not produce systematically different correlations compared to the SWLS (average difference = 0.001 – 0.005). The average absolute difference in the magnitudes of the correlations produced by single-item measures and the SWLS were very small (average absolute difference = 0.015 – 0.042).

Conclusions—Single-item life satisfaction measures performed very similarly compared to the multiple-item SWLS. Social scientists would get virtually identical answer to substantive questions regardless of which measure they use.

Keywords

life satisfaction; single-item measure; Satisfaction with Life Scale; validity; measurement

Subjective well-being is an overarching construct that captures the affective feelings and cognitive judgments people have about the quality of their lives. Life satisfaction is a component of subjective well-being that reflects the cognitive evaluation of whether one is happy with one's life. Understanding life satisfaction is important as it is associated with positive life outcomes, such as health [1], income [2], and better workplace performance [3].

Correspondence concerning this article should be addressed to Felix Cheung, Department of Psychology, Michigan State University, East Lansing, MI 48823. felixckc@msu.edu.

Scholars have increasingly advocated for the use of life satisfaction in public policy [4]. Notably, France and the United Kingdom have begun to measure life satisfaction since 2010 and 2011, respectively, to guide policy-making. In the United States, Healthy People 2020 – a federal funded initiative – will track population-level life satisfaction to help promote quality of life.

Because of the broad importance of life satisfaction and its policy relevance, life satisfaction is often included in population-based surveys. For instance, life satisfaction measures are included in panel studies such as the Germany Socio-Economic Panel (GSOEP) [5], the British Household Panel Study [6], and the Swiss Household Panel [7], and other studies with extremely large samples, such as the Gallup World Poll [8], the Gallup Daily Poll [9], and the Behavioral Risk Factor Surveillance System (BRFSS) [10]. These studies measure many variables from thousands or even millions of respondents, so single-item measures are often used because participant burden is of primary concern. Given the increasing use of single-item life satisfaction measures both in research and policy settings, there is a pressing need to understand the psychometric properties of these measures. The goal of the current paper is to assess the psychometric properties of single-item life satisfaction measures with 3 separate samples totaling over 16,000 participants.

When evaluating the psychometric properties of a measure, researchers are typically interested in two features: reliability and validity. With regard to reliability, conventional measures that rely on internal consistency (most notably Cronbach's alpha) cannot be calculated for single-item measures. As a result, information about the reliability of these measures is often not presented. Alternative methods for assessing reliability are possible with single-item measures [11], and studies that have used these techniques suggest that the reliability of single-item life satisfaction measures is strong.

For instance, Lucas and Donnellan used data from four panel studies to assess the reliability of single-item life satisfaction measures [12]. By modeling latent traits that tap both purely stable trait variance and slowly changing autoregressive variance [13,14], it is possible to separate true-score variance from occasion-specific variance (which is assumed to reflect mostly measurement error) using longitudinal data. Findings showed that reliability estimates were relatively high across the four studies, with estimates ranging from .68 to .74 [12]. Thus, there is evidence that single-item measures are reliable.

However, additional concerns can be raised about the psychometric properties of single-item life satisfaction measures. Even with relatively high reliability, validity might be low, or at least weaker than with multiple-item scales. The primary concern is that single-item measures are necessarily narrow in focus and may not be able to capture the breadth that can be assessed with multiple items. Different items may capture different features of the construct, resulting in a more valid composite measure. Although life satisfaction is a relatively narrow construct (and thus, single-item measures may do well), direct comparisons of the validity of single- and multiple-item measures are necessary.

The current studies aimed to compare the criterion and construct validity of single- and multiple-item life satisfaction measures. In quality of life research, criterion validity refers to

“the extent to which scores on a particular measure relate to a gold standard (p. 39),” and construct validity refers to “the extent to which scores on a particular questionnaire relate to other measures in a manner that is consistent with theoretically derived hypotheses concerning the concepts that are being measured (p. 39)” [15]. Life satisfaction is widely studied by researchers from different disciplines, and readers from other social sciences (e.g., psychology) may recognize the former as convergent validity and the latter as criterion validity [16].

One previous study [17] has examined the criterion validity of a single-item life satisfaction measure with the Satisfaction with Life scale (SWLS) and showed that the two correlated strongly based on a representative US sample ($r = .75$). Thus, there is some evidence that single-item life satisfaction measures are valid. However, no study has directly compared the construct validity of single-item life satisfaction measures to multiple-item measures.¹

In the current study, we evaluated the criterion and construct validity of single-item life satisfaction measures. Specifically, we evaluated the criterion validity of single-item life satisfaction measures by comparing them to a well-established multiple-item life satisfaction measure -- the SWLS [19]. In addition, we examined the construct validity of single-item measures. We compared the construct validity of single-item measures to that of the SWLS by examining the correlations between life satisfaction and theoretically relevant variables. Importantly, we examined these questions using three large samples recruited with scientific sampling techniques.

Study 1a & 1b

Participants

The data came from the 2010 BRFSS, an ongoing annual telephone survey that tracks health information in the United States, conducted by the Center for Disease Control and states' health departments [10]. A single-item life satisfaction measure (described in more detail below) has been included in every state since 2005. In addition, an abbreviated version of SWLS was administered in Oregon and Washington in 2010. Therefore, only participants from Oregon ($N = 2,277$) and Washington ($N = 13,064$) are included in the current analyses.² In the Oregon sample, respondents (61.8% female; 93.9% White) had a mean age of 59.23 ($SD = 15.60$). In the Washington sample, respondents (60.7% female; 88% White) had a mean age of 56.70 ($SD = 16.40$).

Measures

Life satisfaction—Life satisfaction was measured by a single-item measure and the SWLS. The single-item measure read, “In general, how satisfied are you with your life?” with a 4-point scale from 1 (*Very Satisfied*) to 4 (*Very Dissatisfied*). This item was reverse-coded such that higher values represented higher life satisfaction.

¹A previous study used the same dataset as Study 1 in the current paper, but comparing single-item and multiple-item measures was not the focus [18]. The goal of this previous study was to provide baseline estimates of mental, social, and physical well-being for states overall and for different subgroups (e.g., racial groups, age groups, etc).

²The SWLS was included in the New Hampshire BRFSS. However, there is difficulty obtaining the data due to recent personnel change at the New Hampshire Department of Health and Human Services.

Life satisfaction was also measured using an abbreviated version of the SWLS. It consisted of 4 items, “The conditions of my life are excellent,” “My life is close to ideal,” “I have gotten the important things I want in life,” and “I am satisfied with my life.”³ Participants rated these items on a 5-point scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The SWLS had a Cronbach’s alpha of 0.90 in Oregon and 0.89 in Washington, suggesting substantial internal consistency. The means and standard deviations of the life satisfaction measures by gender, marital status, and employment status for Oregon and Washington are presented in Tables 1 and 2, respectively (see Supplementary Materials for a detailed description of group differences in life satisfaction).

Theoretically relevant variables—The BRFSS contains more than 600 variables. To assess the construct validity of life satisfaction measures, 10 variables measuring 5 theoretically-relevant constructs, namely, income, education, self-reported health, domain satisfactions, and happiness were chosen. A large body of research has established clear correlations between these variables and life satisfaction.⁴ Specifically, we hypothesized life satisfaction to be positively correlated with income [2], education [20], self-reported health [1], domain satisfactions [21], and happiness [19].

Participants reported their income and education. Income was measured using income brackets from 1 (*Less than \$10,000*) to 8 (*\$75,000 or more*). Education was measured using 6 categories from 1 (*Never attended school or only attended kindergarten*) to 6 (*College Graduate*).

Participants reported their overall health, mental health, and physical health. Overall health was measured by asking, “Would you say that in general your health is...” with 5 response options from 1 (*Excellent*) to 5 (*Poor*). Mental health was measured by asking, “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” Physical health was measured by asking, “Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?” These three items were reverse-coded such that higher values represented better health.

Participants reported their satisfaction with 4 domains, namely, education, energy level, work, and neighborhood. Participants were asked, “In general, how satisfied are you with your education (energy level/ present job or work/ neighborhood)?” with a 4-point scale from 1 (*Very Satisfied*) to 4 (*Very Dissatisfied*). These items were reverse-coded such that higher values represented higher satisfaction.

Happiness was measured with the item “All things considered, would you say you are...” using a 5-point scale from 1 (*Very happy*) to 5 (*Not happy at all*). This item was reverse-coded such that higher numbers represented greater happiness.

³The item “If I could live my life over, I would change almost nothing” is not included in BRFSS. BRFSS tested the 4 item vs. the 5 item versions of SWLS and found no difference.

⁴No other variables were analyzed but not reported.

Analysis

Criterion validity—To examine criterion validity, zero-order correlations and disattenuated correlations were computed between the single-item life satisfaction measures and the SWLS. Disattenuated correlations were calculated by dividing the raw correlations by the square roots of the products of the reliability estimates of the two life satisfaction measures. Sample-specific Cronbach's alpha estimates were used for the SWLS. The average reliability estimate (.72) from Lucas and Donnellan was used as the reliability for the single-item measure [12].

Construct validity—To assess construct validity, correlations between each of the two life satisfaction measures and the theoretically relevant variables were computed. To summarize, life satisfaction was hypothesized to be positively correlated with income, education, self-reported health, domain satisfaction, and happiness. There are at least three ways to evaluate the correlations. First, examining the statistical significance and magnitude of the correlations between the measures of life satisfaction and each variable inform us whether the two measures would lead to the same conclusions about the hypothesized associations between life satisfaction and the theoretically relevant variables. Based on guidelines suggested by Cohen [22], correlations between .10 to .30 are considered "small," those between .30 to .50 are considered "medium," and those larger than .50 are considered "large." Second, to test whether the single-item life satisfaction measure produced consistently smaller (or, less likely, consistently larger) correlations than the SWLS, correlations for the single-item measure were subtracted from those for the SWLS. Third, to quantify the magnitude of differences in the correlations across all associations, we calculated the absolute value of the difference in correlations for each theoretically relevant variable and then averaged across all these difference scores. This absolute difference tells us whether the correlations differ by a large amount, even if there is no systematic tendency for correlations to be larger for the SWLS as compared to the single-item measures.

Results

Criterion validity—Unless otherwise noted, all inferential statistics are significant at $p < 0.05$ using two-tailed tests. The single-item life satisfaction measure and the SWLS correlated strongly in both samples (Oregon: zero-order $r = 0.64$, disattenuated $r = 0.80$; Washington: zero-order $r = 0.62$, disattenuated $r = 0.78$).

Construct validity—Correlations between the two life satisfaction measures and the theoretically relevant variables for Oregon and Washington are presented in Tables 3 and 4, respectively. As described in the *Analysis* section, three ways were used to evaluate the correlations produced by the two measures. First, across the two samples, patterns of statistical significance of the correlations produced by the two life satisfaction measures were exactly the same. As predicted, life satisfaction was positively correlated with income, education, subjective health, domain satisfaction, and happiness. Specifically, the two life satisfaction measures correlated weakly with education and moderately with income, replicating past research on life satisfaction and demographic characteristics [2, 17]. Overall health and mental health were moderately correlated with life satisfaction, and physical health was weakly correlated with life satisfaction. Domain satisfaction was weakly to

moderately correlated with life satisfaction. Likewise, happiness showed strong and positive correlations with both life satisfaction measures. Thus, researchers would get identical results regardless of which measure they used if they were focused on null hypothesis significance testing (NHST).

Second, when correlations for the single-item measure were subtracted from those for the SWLS (for details, see the *SWLS-SI* columns in Tables 3 & 4), the average differences in the correlations were only 0.001 in Oregon and 0.005 in Washington. Therefore, neither measure produced systematically larger or smaller correlations than the other. Third, the average absolute differences in the magnitudes of the correlations across all associations was just .015 in Oregon and .016 in Washington (for details, see the *ISWLS-SII* columns in Tables 3 & 4). Thus, the two measures correlated with the theoretically relevant variables in extremely similar ways.

Study 2

Studies 1a & 1b demonstrated that a single-item measure performed extremely similarly compared to an abbreviated SWLS. In Study 2, we extended these results by examining a German sample, in which a single-item measure with more response options and the full SWLS were administered.

Participants

The data came from a pretest module from the 2010 GSOEP, which consisted of a representative sample of 1,312 Germans. The GSOEP is an on-going household panel study from Germany [5]. A pretest module has been administered annually since 2002 to examine the properties of different questions that may be added to subsequent annual surveys in the GSOEP main sample. The current study examined the 2010 pretest because it included the SWLS. Respondents (53.7% female) had a mean age of 52.35 ($SD = 17.61$). These respondents were an independent sample recruited for the pretest, and they had not participated in the GSOEP before the pretest.

Measures

Life satisfaction—The single-item measure read, “All things considered, how satisfied are you with your life as a whole?” with an 11-point scale from 0 (*completely dissatisfied*) to 10 (*completely satisfied*). Using data from the main GSOEP panel study, Lucas and Donnellan showed that this measure has a reliability of .74 [12]. Life satisfaction was measured using the full 5-item SWLS ($\alpha = 0.88$). Descriptive statistics of the life satisfaction measures by gender, marital status, and employment status are presented in Table 5 (see Supplementary Materials for a detailed description of group differences in life satisfaction).

Theoretically relevant variables—Twenty out of 555 variables were selected from the GSOEP.⁵ These variables measured income, subjective health, Big Five personality traits

⁵No other variables were analyzed but not reported.

[23, 24], domain satisfaction, eudemonic well-being, and affects. Based on past research which has shown clear correlations between these variables and life satisfaction, we hypothesized that life satisfaction to be positively correlated with income [2], subjective health [1], extraversion [25], agreeableness [26], conscientiousness [26], domain satisfaction [21], eudemonic well-being [27], and positive affect (i.e., general mood and happiness) [19]. Life satisfaction was also hypothesized to be negative correlated with neuroticism [25] and negative affect (i.e., angry, worried, sad, ashamed, jealousy, something wrong) [19]. Past research on the relation between openness and life satisfaction has yielded mixed results, but openness was included in the current study to provide a complete picture of how the two kinds of life satisfaction measures relate to the Big Five personality traits.

Participants reported their income and overall health. Income was measured in monthly post-governmental income (i.e., after tax). Health was measured by asking “How would you describe your current health?” with a 5-point scale from 1 (*Bad*) to 5 (*Very good*).

A 15-item Big Five Inventory was administered [23, 24]. Neuroticism ($\alpha = 0.60$), extraversion ($\alpha = 0.66$), openness to experience ($\alpha = 0.64$), agreeableness ($\alpha = 0.46$), and conscientiousness ($\alpha = 0.53$) were each measured by 3 items on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Participants reported their satisfaction regarding 4 domains, namely, health, work, income, and leisure. Participants were asked, “How satisfied are you with your health (job/ household income/ leisure time)?” with an 11-point scale from 0 (*completely dissatisfied*) to 10 (*completely satisfied*).

Eudemonic well-being, measured with the Psychological Flourishing Scale [28], refers to aspects of well-being that are not typically captured by life satisfaction measures, such as social relationships, competence, and meaning. Participants responded to items such as “I lead a purposeful and meaningful life” using a 7-point scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

Participants reported their overall mood using the item “My mood at the moment is ...” with an 11-point scale from 0 (*completely bad*) to 10 (*completely good*). Participants also reported how frequent they felt angry, anxious, happy, sad, ashamed, envy, and something is wrong in the past four weeks using a 5-point scale from 1 (*very rarely*) to 5 (*very often*).

Analysis

The analyses in Study 2 were identical to Study 1. It is noteworthy that the single-item measure in Study 2 is different from that used in Study 1. Study 1 used a 4-point scale that was reverse-coded, whereas Study 2 used an 11-point scale that was not reverse-coded. Thus, Study 2 allowed us to test if substantial differences exist for single-item measures with different scales.

Results

Criterion Validity—The single-item life satisfaction measure and the SWLS were strongly correlated (zero-order $r = 0.64$, disattenuated $r = 0.80$).⁶

Construct validity—Correlations between the two life satisfaction measures and the theoretically relevant variables are presented in Table 6. We evaluated the correlations generated by the two measures in three ways. First, the statistical significance of the correlations between the two life satisfaction measures and each external variable are virtually the same across the 20 variables. In support of our hypotheses, the two life satisfaction measures correlated weakly with income and moderately with overall health. Both life satisfaction measures showed weak to moderate positive correlations with extraversion, openness to experience, agreeableness, and conscientiousness and a moderate negative correlation with neuroticism. As predicted, life satisfaction was moderately to strongly correlated with domain satisfaction. Likewise, life satisfaction and psychological flourishing were strongly correlated. Furthermore, participants who had better general mood and those who frequently experienced happiness tended to report higher life satisfaction. Higher life satisfaction was weakly to moderately associated with lower levels of anger, worrying, sadness, shame, jealousy, and the feeling that something is wrong. Thus, when using NHST, researchers would reach the same conclusions regardless of which measure is used.

Second, to test if systematic difference exists between the two measures, correlations for the single-item measure were subtracted from those for the SWLS (for details, see the *SWLS-SI* columns in Table 6). The average difference in the associations was 0.002. Therefore, the single-item measure did not produce consistently lower or higher correlations compared to the SWLS. Third, we calculated the absolute value of the difference in correlations for each of the theoretically relevant variables and then averaged across all variables (for details, see the *ISWLS-SII* columns in Table 6). The average absolute difference was 0.042. Thus, both life satisfaction measures correlated with external factors to a very similar degree.

Discussion

Single-item life satisfaction measures are used in many studies with large samples because participant burden is of primary concern. Studies using these single-item measures have advanced social scientists' understanding of well-being. However, few studies have examined the reliability and validity of single-item life satisfaction measures because testing the psychometric properties of single-item measures is often difficult. The current paper assessed the criterion and construct validity of single-item life satisfaction measures. In two studies (three samples) with a total sample size of over 16,000 respondents, we examined the validity of single-item measures by comparing them with the more well-established SWLS.

These results demonstrate that single-item life satisfaction measures perform very similarly to the SWLS and correlated very strongly with each other in two US samples (Study 1a & 1b) and in a representative German sample (Study 2). Single-item life satisfaction measures and the SWLS correlated with each other very strongly. More importantly, they correlated with external variables (e.g., health and affect) to a similar degree. The same conclusions

⁶Disattenuated correlation is calculated using in-sample reliability estimate was used for the SWLS. The reliability estimate for the GSOEP (.74) from Lucas and Donnellan was used for the single-item measure [12].

about the association between life satisfaction and other variables can be reached by examining the correlation patterns produced by either measure. No systematic difference between the two types of measures was found, and any difference was likely due to sampling error (this conclusion is supported by the fact that the biggest differences emerged in the smallest sample). Thus, the current paper provides strong support for the validity of single-item life satisfaction measures.

A limitation in the current studies is that responsiveness of single-item life satisfaction measures was not examined. There may be reasons to expect that single-item measures (especially those with few response options, such as the one in the BRFSS) might be less sensitive when used for such research purposes. However, longitudinal and intervention studies that include both single- and multiple-item measures of life satisfaction are rare, which makes a comparison of sensitivity difficult. Future tests of the sensitivity of different measures will be important for researchers who wish to use life satisfaction to evaluate the effectiveness of interventions or policy programs.

In conclusion, the current paper, coupled with the previous finding that demonstrated the reliability of single-item life satisfaction measures [12], lends further support for the use of single-item life satisfaction measures in large panel studies. Based on empirical evidence accumulated thus far, single-item life satisfaction measures appear to be both reliable and valid.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This research was supported by a Graduate Research Fellowship from the National Science Foundation awarded to the first author and by funding from the National Institute on Aging (AG040715) awarded to the second author.

References

1. Diener E, Chan MY. Happy People Live Longer: Subjective Well-Being Contributes to Health and Longevity. *Applied Psychology: Health and Well-Being*. 2011; 3(1):1–43.
2. Howell RT, Howell CJ. The relation of economic status to subjective well-being in developing countries: a meta-analysis. *Psychological bulletin*. 2008; 134(4):536–560. [PubMed: 18605819]
3. Lyubomirsky S, King L, Diener E. The benefits of frequent positive affect: Does happiness lead to success? *Psychological bulletin*. 2005; 131(6):803–855. [PubMed: 16351326]
4. Diener, E.; Lucas, R.; Schimmack, U.; Helliwell, J. *Well-Being for Public Policy*. Oxford: Oxford University Press; 2009.
5. Wagner GG, Joachim RF, Jürgen S. The German Socio-Economic Panel Study (SOEP)-Scope, Evolution and Enhancements. *Schmollers Jahrbuch: Journal of Applied Social Science Studies*. 2007; 127(1):139–169.
6. Taylor, MF.; Brice, J.; Buck, N.; Prentice-Lane, E. *British Household Panel Survey user manual volume A: Introduction, technical report, and appendices*. Colchester: University of Essex; 2009. Available at: <http://iserwww.essex.ac.uk/ulsc/bhps/doc/>
7. Voorpostel, M.; Tillmann, R.; Lebert, F.; Kuhn, U.; Lipps, O.; Ryser, V-A.; Schmid, F.; Rothenbühler, M.; Wernli, B. *Swiss Household Panel Userguide (1999–2011), Wave 13, October 2012*. Lausanne: FORS; 2012.

8. Gallup Daily: U.S. Life Evaluation. Retrieved November 11, 2013 from <http://www.gallup.com/poll/110125/gallup-daily-life-evaluation.aspx>
9. Gallup World Poll Knowledge Center. Retrieved November 11, 2013 from <http://www.gallup.com/strategicconsulting/en-us/worldpoll.aspx>
10. Centers for Disease Control and Prevention (CDC). Behavioral risk factor surveillance system survey data. Atlanta, Georgia: 2010.
11. Alwin, DF. Margins of error: A study of reliability in survey measurement. Hoboken, NJ: John Wiley & Sons; 2007.
12. Lucas RE, Donnellan MB. Estimating the reliability of single-item life satisfaction measures: Results from four national panel studies. *Social Indicators Research*. 2012; 105(3):323–331. [PubMed: 23087538]
13. Kenny DA, Zautra A. The trait-state-error model for multi-wave data. *Journal of Consulting and Clinical Psychology*. 1995; 63:52–59. [PubMed: 7896990]
14. Kenny, DA.; Zautra, A. The trait-state models for longitudinal data. In: Collins, LM.; Sayer, AG., editors. *New methods for the analysis of change*. Washington, DC: American Psychological Association; 2001. p. 243-263.2001
15. Terwee CB, Bot SD, de Boer MR, van der Windt DA, Knol DL, Dekker J, de Vet HC. Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of Clinical Epidemiology*. 2007; 60(1):34–42. [PubMed: 17161752]
16. Cronbach LJ, Meehl PE. Construct validity in psychological tests. *Psychological Bulletin*. 1955; 52(4):281. [PubMed: 13245896]
17. Kobau R, Sniezek J, Zack MM, Lucas RE, Burns A. Well-Being Assessment: An Evaluation of Well-Being Scales for Public Health and Population Estimates of Well-Being among US Adults. *Applied Psychology: Health and Well-Being*. 2010; 2(3):272–297.
18. Kobau R, Bann C, Lewis M, Zack MM, Boardman AM, Boyd R, Lim KC, Holder T, Hoff AKL, Luncheon C, Thompson W, Horner-Johnson W, Lucas RE. Mental, social, and physical well-being in New Hampshire, Oregon, and Washington, 2010 Behavioral Risk Factor Surveillance System: Implications for public health research and practice related to Healthy People 2020 foundation health measures on well-being. *Population Health Metrics*. 2013; 11(19):1–16. [PubMed: 23360645]
19. Diener ED, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of Personality Assessment*. 1985; 49(1):71–75. [PubMed: 16367493]
20. del Mar Salinas-Jiménez M, Artés J, Salinas-Jiménez J. Education as a positional good: A life satisfaction approach. *Social indicators research*. 2011; 103(3):409–426.
21. Schimmack U, Oishi S. The influence of chronically and temporarily accessible information on life satisfaction judgments. *Journal of Personality and Social Psychology*. 2005; 89(3):395–406. [PubMed: 16248721]
22. Cohen, J. *Statistical power analysis for the behavioral sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
23. Gerlitz JY, Schupp J. Zur Erhebung der Big-Five-basierten persönlichkeitsmerkmale im SOEP. *DIW Research Notes*. 2005; 4:1–36.
24. John OP, Srivastava S. The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research*. 1999; 2:102–138.
25. Costa PT, McCrae RR. Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people. *Journal of Personality and Social Psychology*. 1980; 38(4):668–678. [PubMed: 7381680]
26. DeNeve KM, Cooper H. The happy personality: a meta-analysis of 137 personality traits and subjective well-being. *Psychological bulletin*. 1998; 124(2):197–229. [PubMed: 9747186]
27. Ryff CD, Singer B. The contours of positive human health. *Psychological inquiry*. 1998; 9(1):1–28.
28. Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi DW, Oishi S, Biswas-Diener R. New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*. 2010; 97(2):143–156.

Table 1

Sample Sizes, Means, and Standard Deviations of Life Satisfaction by Gender, Marital Status, and Employment Status in Oregon.

	Oregon (N = 2,277)													
	Single-Item				SWLS				Comparison					
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>d</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>d</i>	Lower	Upper	Lower	Upper	Lower	Upper
Gender														
Male [†]	861	3.40	0.64		869	4.00	0.88							
Female	1400	3.39	0.63	0.02	1408	4.01	0.89	-0.01	0.10	-0.07	0.10	-0.10	0.07	0.07
Marital Status														
Married [†]	1248	3.54 _a	0.57		1254	4.20 _a	0.76							
Divorcee/Separated	405	3.15 _c	0.72	0.64	407	3.63 _c	1.04	0.68	0.75	0.52	0.75	0.56	0.79	0.79
Widowed	329	3.29 _b	0.59	0.44	335	3.93 _b	0.87	0.34	0.56	0.31	0.56	0.22	0.47	0.47
Never Married	269	3.23 _{bc}	0.64	0.53	271	3.78 _{bc}	0.87	0.54	0.66	0.40	0.66	0.41	0.67	0.67
Employment Status														
Employed	951	3.46 _a	0.58	0.03	954	4.03 _b	0.80	0.17	0.20	-0.14	0.20	0.01	0.34	0.34
Unemployed	148	3.11 _b	0.72	0.56	150	3.54 _c	1.00	0.69	0.79	0.34	0.79	0.46	0.92	0.92
Homemaker [†]	158	3.47 _a	0.55		158	4.17 _{ab}	0.82							
Student	48	3.25 _{ab}	0.60	0.39	49	4.03 _{ab}	0.80	0.17	0.72	0.07	0.72	-0.15	0.49	0.49
Retired	808	3.46 _a	0.61	0.02	815	4.16 _a	0.81	0.01	0.19	-0.15	0.19	-0.16	0.18	0.18
Unable to Work	133	2.80 _c	0.77	1.02	133	3.21 _d	1.14	0.98	1.26	0.77	1.26	0.74	1.22	1.22
Overall	2261	3.39	0.63		2277	4.01	0.88							

Note. [†] denotes the comparison group with which Cohen's *ds* are computed. For marital status and employment status, means for the same measure that do not share a subscript are significantly different from each other at $p < .05$ (two-tailed). Means that do not share a subscript are significantly different from each other at $p < .05$ (two-tailed).

Table 2

Sample Sizes, Means, and Standard Deviations of Life Satisfaction by Gender, Marital Status, and Employment Status in Washington.

Single-Item	Washington (N = 13,064)												
	Comparison						SWLS						
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>d</i>	Lower	Upper	<i>n</i>	<i>M</i>	<i>SD</i>	<i>d</i>	Lower	Upper	
Gender													
Male [†]	5130	3.40	0.62				5167	4.06	0.83				
Female	7934	3.40	0.63	0.00	-0.04	0.04	7991	4.07	0.84	-0.01	-0.05	0.02	
Marital Status													
Married [†]	7628	3.50 _a	0.57				7661	4.25 _a	0.71				
Divorce/Separated	2179	3.18 _c	0.71	0.53	0.48	0.58	2200	3.68 _c	0.95	0.74	0.69	0.79	
Widowed	1605	3.37 _b	0.62	0.22	0.17	0.28	1631	4.07 _b	0.82	0.25	0.19	0.30	
Never Married	1612	3.23 _c	0.65	0.46	0.41	0.52	1624	3.75 _c	0.94	0.66	0.61	0.72	
Employment Status													
Employed	6165	3.44 _b	0.57	0.09	0.05	0.13	6193	4.11 _b	0.74	0.16	0.12	0.20	
Unemployed	781	3.07 _d	0.72	0.70	0.62	0.77	986	3.60 _d	0.99	0.79	0.72	0.86	
Homemaker	914	3.46 _a	0.60	0.05	-0.02	0.12	920	4.23 _a	0.79	0.00	-0.07	0.07	
Student	221	3.29 _e	0.58	0.34	0.21	0.48	222	3.89 _e	0.94	0.40	0.27	0.54	
Retired [†]	4199	3.49 _a	0.58				4235	4.23 _a	0.75				
Unable to Work	761	2.84 _e	0.83	1.04	0.96	1.12	779	3.20 _e	1.14	1.25	1.17	1.33	
Overall	13064	3.40	0.63				13064	4.07	0.84				

Note. [†] denotes the comparison group with which Cohen's *ds* are computed. For marital status and employment status, means for the same measure that do not share a subscript are significantly different from each other at $p < .05$ (two-tailed).

Table 3

Correlations between Life Satisfaction, Demographics, Health, Domain Satisfaction, and Affect in Oregon.

	Oregon (N = 2,277)							
	Single-Item		SWLS		95% CI		Difference	
	r	Lower	Upper	r	Lower	Upper		
Demographics								
Income	0.31*	0.27	0.35	0.30*	0.26	0.34	-0.010	0.010
Education	0.12*	0.08	0.16	0.11*	0.07	0.15	-0.010	0.010
Health								
Overall Health	0.38*	0.34	0.41	0.38*	0.35	0.42	0.005	0.005
Mental Health	0.40*	0.34	0.46	0.41*	0.35	0.47	0.010	0.010
Physical Health	0.28*	0.21	0.34	0.25*	0.18	0.31	-0.031	0.031
Domain Satisfaction								
Education	0.30*	0.26	0.33	0.31*	0.27	0.35	0.014	0.014
Energy	0.42*	0.39	0.46	0.43*	0.40	0.46	0.009	0.009
Work	0.35*	0.29	0.41	0.35*	0.29	0.40	-0.002	0.002
Neighborhood	0.21*	0.17	0.25	0.25*	0.21	0.29	0.042	0.042
Affect								
Happy	0.72*	0.70	0.74	0.70*	0.67	0.72	-0.021	0.021
Average Difference							0.001	0.015

Note. * = $p < .05$. Sample sizes ranged from 723–2277. *SI* = single-item life satisfaction measure.

Table 4

Correlations between Life Satisfaction, Demographics, Health, Domain Satisfaction, and Affect in Washington.

	Washington (N = 13,064)											
	Single-Item		SWLS				Difference					
	r	95% CI		r	95% CI		r	95% CI		r	95% CI	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
Demographics												
Income	0.27*	0.25	0.28	0.29*	0.27	0.31	0.026	0.026	0.026	0.026	0.026	0.026
Education	0.12*	0.10	0.13	0.08*	0.06	0.09	-0.041	-0.041	-0.041	-0.041	0.041	0.041
Health												
Overall Health	0.33*	0.31	0.35	0.34*	0.32	0.35	0.005	0.005	0.005	0.005	0.005	0.005
Mental Health	0.36*	0.33	0.38	0.36*	0.33	0.38	0	0	0	0	0	0
Physical Health	0.22*	0.20	0.25	0.21*	0.18	0.23	-0.016	-0.016	-0.016	-0.016	0.016	0.016
Domain Satisfaction												
Education	0.29*	0.27	0.30	0.31*	0.30	0.33	0.026	0.026	0.026	0.026	0.026	0.026
Energy	0.40*	0.38	0.41	0.44*	0.43	0.45	0.040	0.040	0.040	0.040	0.040	0.040
Work	0.33*	0.30	0.35	0.33*	0.30	0.35	0	0	0	0	0	0
Neighborhood	0.25*	0.23	0.26	0.25*	0.24	0.27	0.007	0.007	0.007	0.007	0.007	0.007
Affect												
Happy	0.67*	0.66	0.68	0.67*	0.66	0.68	0.002	0.002	0.002	0.002	0.002	0.002
Average Difference							0.005	0.005	0.005	0.005	0.016	0.016

Note. * = $p < 0.05$. Sample sizes ranged from 4,116–13,064. *SI* = single-item life satisfaction measure.

Table 5

Sample Sizes, Means, and Standard Deviations of Life Satisfaction by Gender, Marital Status, and Employment Status in Germany.

Single-Item	Germany (N = 1,312)											
	SWLS						SWLS					
	n	M	SD	d	Comparison 95% CI		n	M	SD	d	Comparison 95% CI	
				Lower	Upper					Lower	Upper	
Gender												
Male [†]	607	7.38	1.69			608	4.95	1.27				
Female	705	7.39	1.61	-0.01	-0.11	704	4.86	1.26	0.07	-0.04	0.18	
Marital Status												
Married [†]	749	7.58 _a	1.51			747	5.13 _a	1.13				
Divorce/Separated	162	6.96 _{bc}	1.77	0.40	0.23	162	4.34 _c	1.35	0.67	0.50	0.85	
Widowed	129	6.88 _c	1.94	0.44	0.25	131	4.75 _b	1.34	0.33	0.14	0.51	
Never Married	272	7.35 _{ab}	1.70	0.15	0.01	272	4.69 _b	1.37	0.37	0.23	0.51	
Employment Status												
Employed [†]	740	7.46 _a	1.42			739	4.97 _a	1.19				
Unemployed	557	7.28 _b	1.91	0.11	0.00	558	4.82 _b	1.35	0.11	0.01	0.23	
Overall	1312	7.38	1.64			1312	4.90	1.26				

Note. † denotes the comparison group with which Cohen's *d*s are computed. For marital status and employment status, means for the same measure that do not share a subscript are significantly different from each other at $p < 0.05$ (two-tailed).

Table 6

Correlations between Life Satisfaction, Demographics, Personality, Domain Satisfaction, Eudemonic Well-being, and Affects in Germany.

	Germany (N = 1,312)									
	r	Single-Item 95% CI		r	SWLS 95% CI		r	SWLS - SI		Difference
		Lower	Upper		Lower	Upper		Lower	Upper	
Demographics										
Overall Health	0.42*	0.37	0.46	0.36*	0.31	0.41	0.41	-0.055	0.055	
Income	0.22*	0.15	0.28	0.28*	0.22	0.34	0.34	0.064	0.064	
Personality										
Neuroticism	-0.29*	-0.34	-0.24	-0.30*	-0.35	-0.25	-0.25	-0.009	0.009	
Extraversion	0.24*	0.18	0.29	0.15*	0.10	0.20	0.20	-0.085	0.085	
Openness	0.23*	0.18	0.28	0.23*	0.18	0.28	0.28	-0.005	0.005	
Agreeableness	0.14*	0.09	0.20	0.10*	0.04	0.15	0.15	-0.049	0.049	
Conscientiousness	0.17*	0.12	0.23	0.18*	0.13	0.23	0.23	0.004	0.004	
Domain Satisfaction										
Health	0.45*	0.40	0.49	0.40*	0.36	0.45	0.45	-0.045	0.045	
Work	0.41*	0.35	0.47	0.50*	0.44	0.55	0.55	0.087	0.087	
Income	0.50*	0.45	0.54	0.66*	0.62	0.69	0.69	0.160	0.160	
Leisure	0.33*	0.28	0.37	0.36*	0.31	0.40	0.40	0.029	0.029	
Eudemonic Well-being										
Psychological Flourishing	0.46*	0.42	0.50	0.51*	0.47	0.55	0.55	0.052	0.052	
Affects										
General Mood	0.46*	0.42	0.50	0.42*	0.37	0.46	0.46	-0.043	0.043	
Angry	-0.32*	-0.37	-0.27	-0.32*	-0.37	-0.27	-0.27	0.005	0.005	
Worried	-0.29*	-0.34	-0.24	-0.25*	-0.30	-0.20	-0.20	-0.047	0.047	
Happy	0.46*	0.42	0.50	0.42*	0.37	0.46	0.46	-0.045	0.045	
Sad	-0.31*	-0.36	-0.26	-0.31*	-0.36	-0.26	-0.26	0	0	

Germany (N = 1,312)									
	Single-Item		SWLS				Difference		
	95% CI		r		95% CI		SWLS - SI		
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	
Ashamed	-0.13*	-0.18	-0.07	-0.17*	-0.22	-0.12	-0.042	0.042	
Jealousy	-0.17*	-0.23	-0.12	-0.16*	-0.21	-0.11	-0.008	0.008	
Something Wrong	-0.22*	-0.27	-0.16	-0.22*	-0.27	-0.17	-0.005	0.005	
Average Difference							0.002	0.042	

Note. * = $p < .05$. Sample sizes ranged from 730–1312. SI = single-item life satisfaction measure.