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IZA DP No. 15790

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ABSTRACT

Wellbeing Rankings

Combining data on around four million respondents from the Gallup World Poll and the US Daily Tracker Poll we rank 164 countries, the 50 states of the United States and the District of Columbia on eight wellbeing measures. These are four positive affect measures - life satisfaction, enjoyment, smiling and being well-rested – and four negative affect variables – pain, sadness, anger and worry. Pooling the data for 2008-2017 we find country and state rankings differ markedly depending on whether they are ranked using positive or negative affect measures. The United States ranks lower on negative than positive affect, that is, its country wellbeing ranking looks worse using negative affect than it does when using positive affect. Combining rankings on all eight measures into a summary ranking index for 215 geographical locations we find that nine of the top ten and 16 of the top 20 ranked are US states. Only one US state ranks outside the top 100 – West Virginia (101). Iraq ranks lowest - just below South Sudan. The Nordic countries that traditionally rank high using life satisfaction do not rank as highly on other measures. Country-level rankings on the summary wellbeing index differ sharply from those reported in the World Happiness Index and are more comparable to those obtained with the Human Development Index. The state level rankings on the summary index look very different from those just based on positive affect measures and look more similar to rankings based on objective wellbeing measures.

JEL Classification: I31, O57

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1. Introduction

There is growing interest in behavioral and social sciences about the role of location in individuals' wellbeing. Where you are, who you are with and what you are doing all play a role in one's wellbeing (Bryson and MacKerron, 2017). This varies with ambient conditions (temperature and sunlight) but is also affected by fixed location traits. For instance, the presence of water and green space raise momentary wellbeing (MacKerron and Maurato, 2013). Interest in ranking the wellbeing of countries has grown since the Sarkozy-Stiglitz Commission (Stiglitz et al., 2008) challenged the common assumption that ranking countries by gross domestic product (GDP) per capita was sufficient to establish how "well" countries were doing relative to one another. The premise was that GDP, whilst a useful measure of economic output, was only one indicator of the utility individuals might attach to residing in a particular country. Subjective well-being, whilst positively correlated with GDP per capita (as we show later), was a broader metric of utility and, as such, might reveal aspects of a country's performance which might otherwise go unnoticed. This interest was given further impetus by a growing body of research which pointed to the deleterious effects of income inequality. If a country was wealthy but unequal, this might lead to poorer outcomes for citizens than those facing citizens in less well-off countries which were nevertheless more equal.

Some question the value of ranking individuals, states or countries based on subjective wellbeing for two related reasons. First, it is difficult to account for heterogeneity in the way people assess their wellbeing under objectively similar conditions. This is because they have different reference points against which they are making their evaluations, some of which may be idiosyncratic, while others are linked to social, cultural or other influences. Scientists have sought to overcome such problems – for example, by anchoring survey respondents using vignettes which seek to elicit responses to specific situations to strip out cultural and other context-specific ratings (Chevalier and Fielding, 2011).

Second, Bond and Lang (2019) demonstrated the sensitivity of rankings based on wellbeing means from ordinal scales since those rankings rely on assumptions regarding the functional form of the underlying latent wellbeing metrics captured in the ordinal scales. As Bond and Lang show, this issue affects rankings of groups when individual responses are aggregated. They specifically refer to rank identification problems with regards to country rankings of happiness. However, Chen et al. (2022) argue the Bond and Lang critique does not hold if one focuses on ranking median happiness as opposed to mean happiness.

Others maintain that the correspondence between objective indicators of wellbeing and their subjective counterparts provide some validation of the informational content provided by subjective wellbeing metrics. Examples include the similarity in factors predicting both subjective and biometric wellbeing; the correlations between subjective and biometric indicators of wellbeing, such as pulse (Blanchflower and Bryson, 2022a); associations between subjective wellbeing and the risk of coronary heart disease; the correlation between subjective wellbeing and skin-resistance measures of response to stress electroencephalogram measures of prefrontal brain activity; and the duration of authentic Duchennes smiles (Blanchflower and Oswald, 2004).¹

¹ A Duchenne smile occurs when both the zygomatic major and orbicularis oris facial muscles fire. Human beings identify these as 'genuine' smiles.

Blanchflower and Oswald (2016) show that unhappiness is hump-shaped in age as is the taking of anti-depressants.

Subjective wellbeing also responds in predictable ways to good and bad life events such as the advent of unemployment, marriage and divorce/separation, the onset of an injury, illness or disease, and the death of family members or friends. Individuals' own assessment of their subjective wellbeing is also strongly correlated with how friends and family members perceive your wellbeing and is strongly predictive of behavioral outcomes offering further validation (Blanchflower and Oswald, 2004). For example, job dissatisfaction is strongly predictive of quit behavior (Freeman, 1978) and subjective wellbeing predicts mortality (Diener and Chan, 2011).

Blanchflower, Bryson and Piper (2022) find that chronic pain is associated with subsequent job loss, while Blanchflower and Bryson (2022b) find chronic pain at age 44 is associated with a range of poor mental health outcomes, pessimism about the future and joblessness at age 55 whereas short-duration pain at age 44 is not. Pain has strong predictive power for pain later in life: pain in childhood predicts pain in mid-life, even when one controls for pain in early adulthood. Pain appears to reflect other vulnerabilities as we found that chronic pain at age 44 predicts whether or not a respondent has Covid nearly twenty years later.

Notwithstanding the Bond and Lang critique, there is therefore potential merit in ranking locations according to the wellbeing experienced by their residents. It seems reasonable to rank countries according to raw differences in their subjective wellbeing but, if one wants to account for compositional differences in the nature of those reporting from different countries, it seems appropriate to undertake a regression-adjustment to remove those differences related to demographic differences across countries.

Having reviewed the existing literature ranking locations on their wellbeing in Section Two we present our own rankings and, in doing so, make a number of contributions to the literature. First, we move beyond the happiness and life satisfaction metrics that are usually the basis for rankings across countries, comparing rankings across a range of metrics. We exploit comparable data across 164 countries on eight metrics, four of which capture wellbeing, and four of which capture illbeing. This proves important because we find that rankings look somewhat different across positive and negative affect, that is, countries move around quite a bit depending on the metric we use to rank them. This is somewhat surprising since the literature on other factors impacting wellbeing, such as age, race, education, being an immigrant, and labor force status, tend to do so in ways that appear symmetrical with respect to positive and negative affect. For example, joblessness lowers happiness and raises unhappiness.

There is a U-shape in age with positive affect and a hump shape with negative affect. The effects of sex are a little less clear, with some evidence indicating that being female is positive in happiness and unhappiness equations (Blanchflower and Bryson, 2022c). But in the main, variables that are positively correlated with positive affect are negatively correlated with negative affect, and vice versa. In contrast, country rankings are sensitive to whether the ranking is based on positive or negative affect.

Second, we move beyond ranking countries by incorporating the 50 states of the United States, together with the District of Columbia. By exploiting Gallup data for 164 countries in the Gallup World Poll with identical well- and ill-being metrics for the states of the United States in the US Daily Tracker Poll, we can rank those US states alongside countries for the first time. In doing so, we discuss methodological issues that arise.

Third, we take the rankings on the eight well(ill)being metrics and combine them into a single wellbeing ranking index, comparing rankings on this metric with those reported in the World Happiness Index and the Human Development Index to see what we can learn from alternative rankings.

Pooling the data for 2008-2017 we find country and state rankings differ markedly depending on whether they are ranked using positive or negative affect measures. The United States ranks lower on negative than positive affect. Combining all eight measures into a summary index for 215 geographical locations we find that nine of the top ten and 16 of the top 20 ranked are US states. Only one US state ranks outside the top 100 – West Virginia (101). Iraq ranks lowest just below South Sudan. The Nordic countries that traditionally rank high using life satisfaction do not rank as highly on other measures. Country-level rankings on the summary wellbeing index differ sharply from those reported in the World Happiness Index and are more comparable to those obtained with the Human Development Index. The state level rankings on the summary index look very different from those just based on positive affect measures and are more similar to rankings based on objective wellbeing measures.

2. Recent Wellbeing Rankings

In the years prior to the Sarkozy-Stiglitz Commission it was commonly accepted that GDP per capita was a sensible metric against which to assess the progress of nations. The World Bank has produced these rankings for many years. [Appendix Table 1](#) presents them for 214 countries in 2020/2021. Of the top twelve Monaco (1), Liechtenstein (2), Luxembourg (3), Bermuda (4), Isle of Man (5), Cayman Islands (9), Channel Islands (10) and Singapore (11) are all small. The top ranked larger countries are Ireland (5), Switzerland (6), Norway (7) with the United States (12), Denmark (14), Sweden (17) and UK (29).

Since the Sarkozy-Stiglitz Commission it has become increasingly common to rank country wellbeing with a single life satisfaction metric. The precise wording of the question and the coding of responses can differ, but this appears to make little difference to rankings based on such questions. Helliwell et al.'s (2022) World Happiness Report was the ninth report to rank countries according to happiness based on responses to the following question: *"Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?"* This is known as Cantril's Ladder. Finland ranked top in 2019-2021, as it had done in 2017-2019 followed by Denmark and Iceland.²

² Helliwell et al (2022) rank countries as follows based on 2019-2021 Cantril life satisfaction scores - Finland (1); Denmark (2); Iceland (3); Switzerland (4); Netherlands (5); Luxembourg (6); Sweden (7); Norway (8); Israel (9); New Zealand (10); Austria (11); Australia (12); Ireland (13); Germany (14); Canada (15); United States (16); United Kingdom (17); Czechia (18); Belgium (19); France (20); Bahrain (21); Slovenia (22); Costa Rica (23); United Arab

Similar life satisfaction rankings can be found elsewhere. For example, **Table 1** column 1 shows life satisfaction mean scores on the 10-step life satisfaction measure from the OECD’s Better Life Index (BLI) which it produces for its 38 member countries.³ It is constructed from a number of national surveys including the Australian General Social Survey, the Canadian Community Health Survey, the New Zealand Social Survey and the Gallup World Poll. Column 2 shows country means for the 4-step life satisfaction measure taken from the World Happiness Database (WHD) reports based on the Eurobarometer surveys and the final column presents the same for countries covered in the Latinobarometer.⁴ Denmark tops the rankings on the BLI and WHD. Turkey is bottom of the BLI ranking and also performs poorly on the WHD ranking. Albania and Colombia have the lowest life satisfaction scores according to the WHD.

Over time one might expect that the relative rankings of countries’ life satisfaction may change with their relative wealth. Indeed, Easterlin (1974) argued that wellbeing rose sharply as developing countries developed and then slowed down as they became richer. His claim was that there was a declining marginal utility of income. He argued—and still does—that the likely reason was that humans are fundamentally creatures of comparison, so that when they see everyone around them becoming richer at the same time as they themselves do they become inured to the benefits of additional income. We go from having one Ford to having three Lexuses, and nobody is happier. Arnold Schwarzenegger, the actor, once famously said: “Money doesn’t make you happy. I now have \$50 million but I was just as happy when I had \$48 million”.

In fact, country rankings have tended to be relatively stable over time in the various annual World Happiness Reports since 2009. It is true that, over time, poorer countries have seen some catch-up. For example, as shown below, using the 4-step life satisfaction measure, which is the most widely available measure, Peru saw a rise over the period 2005-2020. Neither Denmark, which is often found to be one of the happiest countries in the world, nor the UK, have seen much of a rise. So, there is some evidence that the gap between the poorer and richer countries narrowed.

Emirates (24); Saudi Arabia (25); Taiwan (26); Singapore (27); Romania (28); Spain (29); Uruguay (30); Italy (31); Kosovo (32); Malta (33); Lithuania (34); Slovakia (35); Estonia (36); Panama (37); Brazil (38); Guatemala (39); Kazakhstan (40); Cyprus (41); Latvia (42); Serbia (43); Chile (44); Nicaragua (45); Mexico (46); Croatia (47); Poland (48); El Salvador (49); Kuwait (50); Hungary (51); Mauritius (52); Uzbekistan (53); Japan (54); Honduras (55); Portugal (56); Argentina (57); Greece (58); South Korea (59); Philippines (60); Thailand (61); Moldova (62); Jamaica (63); Kyrgyzstan (64); Belarus (65); Colombia (66); Bosnia and Herzegovina (67); Mongolia (68); Dominican Republic (69); Malaysia (70); Bolivia (71); China (72); Paraguay (73); Peru (74); Montenegro (75); Ecuador (76); Vietnam (77); Turkmenistan (78); North Cyprus (79); Russia (80); Hong Kong (81); Armenia (82); Tajikistan (83); Nepal (84); Bulgaria (85); Libya (86); Indonesia (87); Ivory Coast (88); North Macedonia (89); Albania (90); South Africa (91); Azerbaijan (92); Gambia (93); Bangladesh (94); Laos (95); Algeria (96); Liberia (97); Ukraine (98); Congo (99); Morocco (100); Mozambique (101); Cameroon (102); Senegal (103); Niger (104); Georgia (105); Gabon (106); Iraq (107); Venezuela (108); Guinea (109); Iran (110); Ghana (111); Turkey (112); Burkina Faso (113); Cambodia (114); Benin (115); Comoros (116); Uganda (117); Nigeria (118); Kenya (119); Tunisia (120); Pakistan (121); Palestinian Territories (122); Mali (123); Namibia (124); Eswatini, Kingdom of (125); Myanmar (126); Sri Lanka (127); Madagascar (128); Egypt (129); Chad (130); Ethiopia (131); Yemen (132); Mauritania (133); Jordan (134); Togo (135); India (136); Zambia (137); Malawi (138); Tanzania (139); Sierra Leone (140); Lesotho (141); Botswana (142); Rwanda (143); Zimbabwe (144); Lebanon (145) and Afghanistan (146).

³ <https://www.oecdbetterlifeindex.org/#/111111111111>

⁴ https://worlddatabaseofhappiness-archive.eur.nl/statnat/statnat_fp.htm

| | Peru | Poland | UK | Denmark |
|------|------|--------|-----|---------|
| 2005 | 2.5 | 2.8 | 3.2 | 3.6 |
| 2009 | 2.7 | 2.9 | 3.4 | 3.7 |
| 2010 | 3.0 | 2.9 | 3.3 | 3.7 |
| 2017 | 2.9 | 3.0 | 3.4 | 3.7 |
| 2020 | 3.0 | 3.1 | 3.2 | 3.7 |

Source: World Database of Happiness

There is little evidence to suggest that wellbeing in the United States has risen over time. If anything, if we look at the General Social Survey, which has data going back to the early 1970s, happiness levels in the United States have actually *declined* over the last fifty years (Blanchflower and Bryson, 2022c, Figure 4). It may be that Americans make comparisons within their own country⁵ and, because income inequality has grown over this period and wages at the median and below have stagnated, there is increased discontent with one’s lot, despite rising income overall. However, the decline may also reflect the increasing prevalence of health-related problems in the US population. For instance, the number of bad mental health days reported per month in the Behavioral Risk Factor Surveillance System (BRFSS) rose from around 3 in the early 1990s to 4.5 in 2021 (Blanchflower and Bryson, 2022d). In 2019-2021 the United States ranked 16th in the World Happiness Report, well below its ranking by wealth. A recent study of OECD countries by Global Wealth Trends found that the US ranked second in terms of being the wealthiest country in the world based on working hours, salaries, tax rates and pensions.⁶

Although life satisfaction, the Cantril Ladder and happiness metrics have a number of advantages as wellbeing metrics – they are simple to collect and readily available from many countries over many years – single item scales rarely capture the dimensionality of complex social constructs such as wellbeing. Life satisfaction has the added disadvantage, noted earlier, that it is usually measured on an ordinal scale, so that country rankings based on the mean rely on functional form assumptions. Also, as noted earlier, comparisons across countries can be difficult when respondents’ reference points for what constitutes ‘good’ or ‘very good’, for instance, may be affected by social norms in that country.

Reliance on a single subjective wellbeing metric can also be problematic because there is a growing literature suggesting that positive and negative affect capture different aspects of wellbeing – they are not simply the “flip side” of one another, a point we return to below. In recognition of the holistic nature of well- and ill-being some agencies have constructed indexes that draw on a number of domains in life to ascertain how good life is across countries. The OECD, for example, has created a Better Life Index (BLI) for each of its 38 member countries which includes ten major components with a number of sub-components to each.⁷ It does not construct

⁵ For evidence of the importance of comparative income in the United States see Luttmer (2005).

⁶ Country rankings were 1=Switzerland; 2=United States; 3=Iceland; 4=Norway; 5=Canada; 6=Australia; 6=Netherlands; 8=Ireland; 8=Luxembourg; 10=Denmark; 11=United Kingdom; 12=Germany; 12=New Zealand; 14=Finland; 15=Estonia; 16=Belgium; 17=Israel; 18=Sweden; 19=Austria; 20=Japan; 21=Slovakia; 22=Czechia; 22=Italy; 24=France; 24=Lithuania; 26=South Korea; 27=Spain; 28=Slovenia; 29=Costa Rica; 30=Hungary; 31=Chile; 32=Latvia; 33=Portugal; 34=Poland; 34=Turkey; 36=Mexico; 37=Colombia; 38=Greece.

<https://tipalti.com/global-wealth-trends/>

⁷ <https://www.oecdbetterlifeindex.org/topics/life-satisfaction/>

an overall index, however, providing the rationale that it is not obvious, a priori, how to weight each sub-component. It is unclear what weight, for example, should be given to, say income compared to work-life balance or the environment (OECD, 2020). Instead, they suggest readers experiment with weighting schemes themselves to "create their own index".⁸

However, the United Nations does provide a single index of human wellbeing in the UN Sustainable Development Reports which rank countries by seventeen metrics covering education, pollution and health, and inequality. These are reported in [Appendix Table 2](#).⁹ Once again the Scandinavian countries top the list (Finland (1); Denmark (2); Sweden (3); Norway (4). The UK is ranked 11th and the United States 41st. At the bottom of the 163 countries is South Sudan.

The World Bank produces an annual Human Development Index (HDI) which ranks countries in three dimensions. These change over time but only slowly so the rank of countries moves little from one year to the next.¹⁰ Column 1 of [Table 2](#) shows that the Nordic countries rank highly once again. [Appendix Table 3](#) has the full country rankings for the 2019 HDI; Norway ranks top. The US ranks 17th.

In the same way as the WHR and others rank country wellbeing it is possible to rank locations within country. For some time, there has been debate about the best and worst places to live in the United States. Schkade and Kahneman (1998) warned that people's judgements of life satisfaction elsewhere were subject to focusing illusion. Since then, a plethora of wellbeing rankings have appeared that rank each State in the United States according to various wellbeing metrics. Eight of these metrics are summarized in [Table 3](#). Each captures a different aspect of citizens' wellbeing. The first 4 columns are fairly self-explanatory. Column 5 is the Sharecare Community Wellbeing Index which evaluates health risk across 10 domains (Sharecare's Community Wellbeing Index, 2020). The sixth column ranks states by the covid death rate per 100000. The seventh column is Gabriel et al's (2003) 1990 ranking,¹¹ while column eight is Oswald and Wu's (2010) ranking of States based on how respondents to the Behavioral Risk Factor Surveillance System (BRFSS) evaluate their life satisfaction.

Each metric is capturing something a little different but, even so, it is notable just how much variance there is in the State rankings. For instance, Massachusetts ranks number 1 on the Sharecare and Health indices, but 42nd on Oswald and Wu's life satisfaction metric. Louisiana ranks 50th for health, social and economic wellbeing but top on Oswald and Wu's life satisfaction

⁸ The OECD provides data on ten dimensions 1) Housing 2) Income 3) jobs 4) Community 5) Education 6) Environment 7) Civic engagement 8) Health 9) Life satisfaction 10) Safety and 11) Work-life balance. <https://www.oecdbetterlifeindex.org/#/111111111111>

⁹ <https://s3.amazonaws.com/sustainabledevelopment.report/2022/2022-sustainable-development-report.pdf>

¹⁰ It is based on three dimensions. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric means. <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>.

¹¹ They use precipitation; temperature; windspeed; sunshine; coastal land; inland water; public land; National Parks; hazardous waste sites; environmental 'greenness'; commuting time; violent crime; air quality; student-teacher ratio; local taxes; local spending on education and highways; cost of living to determine their quality-of-life index.

and 46th for COVID death rate. New York is bottom (50th) for life satisfaction but 5th on Sharecare's index.

The starting point for our work with the Gallup World Poll data is Helliwell and Wang (2013). They examined both positive and negative affect data across many countries using the GWP data for 2010-2012. The authors reported means by country for Cantril as well as by positive affect and negative affect.¹² They defined these slightly differently than we do later. They calculated a positive affect variable by summing three (1,0) dummies - Q2 enjoyment and Q3 smiling plus one for happiness that is not available in the Gallup World Poll file from 2008-2013 although it is available in the US Daily Tracker from 2008-2016. Helliwell and Wang's negative affect variable is the sum of three (1,0) dummy variables for Q6 sadness, Q7 worry and Q8 anger. Their summary variables for both positive and negative affect are thus four-step variables from zero to three, with negative affect reverse coded so that a high rank means low negative affect.

Helliwell and Wang's (2013) positive and negative affect rankings are reported together with rankings for the Cantril Ladder in [Table 2](#) for a selection of countries. Although they did not comment on it, what is notable is how different the rankings are using Cantril, positive and negative affect. Comparing Cantril rankings in 2010-12 (column 4) with positive affect in the same years the biggest difference is Denmark, which is top ranked under Cantril but drops to 52nd on positive affect. Iceland goes from 9th to 3rd, but most other countries drop slightly, with the US going from 17th to 21st. But the rankings change more sharply when comparing Cantril with negative affect (reverse coded so that a high rank means low negative affect). In column four for Cantril there are eight countries ranked in the top ten, but none are in the top ten in column 6 for low negative affect. Iceland is ranked 15th and the US is now ranked 91st, while Norway goes from 2nd under Cantril to 55th on negative affect.

In what follows we pull together wellbeing rankings at US state-level to show how each state in the United States fares on the various well-being measures and how they compare with other countries. We find remarkable differences especially between the positive and negative affect measures. It turns out that wellbeing metrics are not as highly correlated as one might anticipate. In particular, rankings based on wellbeing metrics are not simply the 'flip' side of rankings based on ill-being. It seems they are, at least to some extent, measuring different things. They also differ markedly by gender. The implication is that we might need more than life satisfaction alone to obtain a robust assessment of State rankings on wellbeing.

2. Data and Estimation

The individual level data files we use are 1) the Gallup World Poll across 164 countries and 2) Gallup's US Daily Tracker files. Our analysis focuses on the most recent period for which we have data, 2008-2017 which comes after the Great Recession but before the Covid pandemic. In the former case there are a total of 1,862,900 observations in the data file and 3,530,270 in the latter.

The eight questions we use are reported below. Questions 1 to 4 refer to positive affect. The most widely used of these is Q1 which is used in the various World Happiness Report and measures life

¹² See their Chapter 2 Appendix available here <https://worldhappiness.report/ed/2013/#appendices-and-data>

satisfaction in terms of how life has turned out, on a scale of 0-10.¹³ The other four questions relate to negative affect.

a) Positive affect

Q1. Cantril's ladder (World Poll sample n=1,598,360, USDT sample n=2,575,022)

"Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?"

Q2. Enjoy (World Poll sample n=1,544,896, USDT sample n=2,630,634)

Did you experience the following feelings during a lot of the day yesterday? How about enjoyment – Yes/No?

Q3. Smile (World Poll sample n=1,504,400 USDT sample n=2,462,452)

Did you smile or laugh a lot yesterday – Yes/No?"

Q4 Well-rested (World Poll sample n=1,539,907 USDT sample n=1,941,209) *Now, please think about yesterday, from the morning until the end of the day. Think about where you were, what you were doing, who you were with, and how you felt. Did you feel well-rested yesterday*

b) Negative affect

Q5. Physical pain (World Poll sample n=1,540,737, USDT sample n=2,634,250)

"Did you experience the following feelings during a lot of the day yesterday? How about physical pain – Yes/No?"

Q6. Sadness (World Poll sample n=1,537,796, USDT sample n=2,474,478)

Did you experience the following feelings during a lot of the day yesterday? How about sadness Yes/No?

Q7. Worry (World Poll sample n=1,539,088, USDT sample n=2,634,633)

"Did you experience the following feelings during a lot of the day yesterday? How about worry - Yes/No?"

Q8. Anger (World Poll sample n=1,520,929, USDT sample n=2,101,352)

Did you experience the following feelings during a lot of the day yesterday? How about anger - Yes/No?"

We construct a positive affect composite variable which is the sum of enjoy, smile and well-rested variables. We do not include the Cantril variable in this measure as it is not a 1,0 dummy. We include it later in our positive and overall rankings when we standardize by rank. We also construct a negative composite variable which is the sum of the four negative affect variables – pain, sadness, worry and anger.

¹³ The overall weighted distribution of the variable was 0-4=18%; 5=17%; 6=12%; 7=18%; 8=20%; 9=7%; 10=8%.

In [Appendix Table 4](#) we report the means of each of our eight scores for all countries and US States over the period 2008-2017. The incidence of negative affect (pain, worry, anger and sadness) is about a third as high as for positive affect (enjoyment, smiling or being rested).

[Appendix Table 5](#) reports the correlation matrices between the variables using the micro data for the period 2008-2017. Both positive and negative affect exhibit high internal validity, as indicated by strong inter-item correlations. The positive affect scale sums the three dummy variables well-rested, smiling and enjoyment. The negative affect scale sums the three dummy variables pain, anger and worry. The two scales are negatively correlated with a coefficient of 0.43.

There is an issue with our data for the US as we have data from both the GWP as well as from USDT. Sample sizes are much smaller in the former case than in the latter. In the case of Cantril, which has the largest number of responses of all of our well-being measures, there are 12,175 observations in the former case and 2,575,022 in the latter for the period 2008-2017. The weighted means are reported below.

| | GWP | USDT |
|-------------|------|------|
| Cantril | 7.08 | 6.90 |
| Enjoy | .84 | .85 |
| Smile | .81 | .82 |
| Well-rested | .69 | .71 |
| Pain | .29 | .24 |
| Worry | .38 | .32 |
| Anger | .18 | .14 |
| Sadness | .22 | .18 |
| Positive | 2.33 | 2.38 |
| Negative | 1.07 | .87 |

It is notable that Cantril is higher in the World Poll file but in the other three positive affect variables USDT is higher. In all four negative affect variables USDT is lower.

In [Table 4](#) we estimate OLS regressions using the micro data for three wellbeing metrics, namely the Cantril scale, positive and negative affect as discussed above from the GWP data file across countries pooled with the US Daily Tracker (USDT) file for the period 2008-2017. The models include both a GWP and USDT variable to identify the USA. Equations also include age and its square, gender and nine years dummies.

The estimates confirm that there is a similar U-shape in age in positive affect as documented in Blanchflower (2022), Blanchflower and Graham (2021, 2022) and a hill shape in negative affect as shown in Giuntella et al (2022), Blanchflower (2020) and Blanchflower and Oswald (2008). There is some variation in the sign of the happiness variable by measure by gender, the so-called happiness paradox, as discussed in Blanchflower and Bryson (2022c). These correlations provide some external validation of the scales, since correlations are similar to those found in the previous literature.

When considering the United States, the concern is that the same variables have significantly different means from the two Gallup surveys as shown above. We see that the United States has higher-than-average positive affect compared to all other countries (the reference category) – whether measured by Cantril, the three separate wellbeing metrics, or the positive affect scale – whether we use the data from the GWP or the Daily Tracker. The differences between the means in the two surveys for US respondents is not sizeable, although the well-rested coefficient in the Daily Tracker is twice that in the World Poll. If we turn to the bottom half of the table we see that both US surveys indicate negative affect in the US is lower than elsewhere in all cases, except with regard to worry in the GWP where the US dummy is positive and statistically significant. But with regards to negative affect, it is clear that there are systematic differences in the US scores between those reported in the GWP and the Daily Tracker, with those in the Daily Tracker reporting much lower negative affect. (In all cases the differences between the US scores in the two surveys are statistically significant).

We are minded to prefer the Daily Tracker scores for the US when compared to the GWP because the sample in the US is particularly small for a country with 330 million inhabitants and is much less representative than for other countries. **Appendix Table 6** reports sample sizes showing that other major countries such as China, Germany and the UK have bigger sample sizes than the US, but so too do Bahrain, Jordan, Palestinian Territories and Egypt. We suspect that the countries whose rank position is most heavily impacted by small sample sizes are likely to be large disparate countries like the United States.

The concern is that small sample sizes for some countries may distort rankings as they appear to do for the United States, but that does not appear to be the case at first glance. There are not many other surveys available, especially on negative affect, to check if there is variation in rankings and the problem is that in comparison to all other advanced countries the US has a dearth of well-being data. For example, data on a 4-step life satisfaction variable is available in the BRFSS survey from 2005-2010 but not subsequently. A 3-step happiness variable is available in the General Social Survey since 1972 but sample sizes are small (Blanchflower, 2021). We investigated how similar the Cantril measure was in terms of its rankings in the raw data in the GWP file from 2008-2017, compared to the most widely available global measure, the 4-step measure of life satisfaction.

Question. How satisfied are you with the life you lead? - very satisfied - fairly satisfied - not very satisfied - not at all satisfied? Where very = 4 not at all = 1.

We obtained this measure averaged across the period 2008-2017 from the World Database of Happiness¹⁴ and ranked fifty-three countries from Western and Eastern Europe, Latin America and Japan with a correlation of .77. Unfortunately, this 4-step measure is not available for the USA in this time period. Rankings were such that 1st is happiest and 53rd is least happy. Denmark ranked first on both the Cantril measure and the life satisfaction measure and the Netherlands is third on both and there are other similarities.¹⁵ Bulgaria, Romania, Serbia and North Macedonia rank low on both. So, rankings are consistent on our two measures but the issue warrants further research.

¹⁴ https://worlddatabaseofhappiness-archive.eur.nl/hap_nat/nat_fp.php?mode=7

¹⁵ Ranks are as follows with 4-step life ranking followed by Cantril rank, in parentheses. Albania (45, 49); Argentina (26, 22); Austria (20, 6); Belgium (14, 11); Bolivia (38, 36); Brazil (33, 17); Bulgaria (52, 53); Chile (34, 19); Colombia (8, 24); Costa Rica (6, 9); Croatia (39, 38); Cyprus (23, 27); Czechia (27, 20); Denmark (1, 1); Dominican

A similar model is deployed to produce country and US state rankings on all eight, wellbeing metrics. The countries form an unbalanced panel with some countries absent in some years, but the US States are ever-present. We rank countries on the eight separate wellbeing metrics in [Table 5](#). The rankings are based on the location coefficients from pooled regressions for 2008-2017 which condition on age, age squared and a gender dummy to net out demographic differences across locations, as well as year dummies to account for common shocks and trends, and a full set of country and state dummies. The country and state coefficients from these regressions are used to create the rankings.

For simplicity and comparability across measures, we rank regions highest to lowest with the positive affect variables from most “happy” to least “happy”. To be comparable we then rank the negative affect variables from least pain to most pain, from least sadness to most sadness and so on. So, the most-happy country is ranked as one and for ease of comparison as the *least unhappy* country.

If we focus on a couple of countries, we can see how much variation there is by measure. This is especially so for Denmark which is #1 for Cantril but 111th for smiling. Finland and Norway see similar jumps: they are highly ranked with Cantril but lower ranked for reverse-coded negative affect. Iceland is highly ranked on seven of nine measures but performs poorly in terms of people suffering pain and feeling rested. There are some locations where the ranking is quite stable regardless of the metric used. For instance, Iraq performs poorly on all measures. If we consider US states and their rank position among the 214 countries/states, Hawaii performs particularly well: it ranks #1 for enjoyment, #6 on smiling and #11 on Cantril. It also ranks high on reverse negative affect (#12 on pain, #21 on sadness, #25 on worry and #28 on anger). In contrast, West Virginia performs particularly poorly: it is #146 on being well-rested and #121 on worry.

As discussed in the literature review there is debate about country-level factors that are correlated with citizens’ wellbeing, particularly in relation to income. We examine this issue in [Table 6](#) building on work originally undertaken by Helliwell et al. (2022) for the World Happiness Report. We run three equations at country level, for Cantril, positive affect and negative affect separately. We replicate their estimates in columns 1, 3 and 5, using their measures of affect and their control variables.¹⁶ Their equations include controls for log GDP, life expectancy, corruption and so on.

(11, 51); Ecuador (30, 34); El Salvador (28, 31); Estonia (35, 43); Finland (10, 2); France (25, 16); Germany (15, 14); Greece (53, 46); Guatemala (16, 26); Honduras (19, 47); Hungary (48, 48); Iceland (2, 4); Ireland (12, 10); Israel (13, 7); Italy (44, 23); Japan (43, 29); Latvia (41, 40); Lithuania (42, 33); Luxembourg (7, 8); Malta (, 21); Mexico (17, 13); Montenegro (46, 45); Netherlands (3, 3); Nicaragua (21, 37); North Macedonia (47, 52); Panama (5, 15); Paraguay (31, 41); Peru (36, 35); Poland (29, 32); Portugal (49, 39); Romania (50, 44); Serbia (51, 50); Slovakia (37, 30); Slovenia (22, 28); Spain (32, 18); Sweden (4, 5); Turkey (40, 42); UK (9, 12); Uruguay (24, 25);

¹⁶ According to Helliwell Wang, Huang and Norton, M. (2022), ‘Social support’ is the national average of the binary responses (0=no, 1=yes) to the Gallup World Poll (GWP) question “*If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?*” ‘Freedom to make life choices’ is the national average of binary responses (0=no, 1=yes) to the GWP question “*Are you satisfied or dissatisfied with your freedom to choose what you do with your life?*” ‘Generosity’ is the residual of regressing the national average of GWP responses to the donation question “*Have you donated money to a charity in the past month?*” on log GDP per capita. ‘Perceptions of corruption’ are the average of binary answers to two GWP questions: “*Is corruption widespread throughout the government in this country or not?*” and “*Is corruption widespread within businesses in this country or not?*” Where data for government corruption are missing, the perception of business corruption is used as the overall

However, it is unclear to us why these equations do not include country fixed effects. We include them in columns 2, 4 and 6. With their inclusion, together with the year fixed effects, the models capture the effects of change in the independent variables on changes on within-country wellbeing, having accounted for common time trends. They do so for 156 countries over the period 2005-2021. The inclusion of country fixed effects doubles the variance explained by the positive and negative affect models, confirming the importance of cross-country variance.

The first row indicates that, as countries get richer, as measured by log GDP per capita, so their citizens' wellbeing rises and negative affect falls. These effects are only apparent with the inclusion of country fixed effects capturing within-country change. In their absence, one could come to the erroneous conclusion that there is little association between GDP and wellbeing – apart from in the case of the Cantril model, where there is a positive and significant correlation both with and without country fixed effects.

Other country-level covariates are correlated with wellbeing in much the way we might have expected, with social support, freedom, generosity all associated with higher Cantril scores, higher positive affect and lower negative affect. These effects hold whether one controls for country fixed effects or not, although their inclusion tends to reduce the size of coefficients, except in the case of generosity where their inclusion increases the size of the coefficients. Perceived corruption is negatively correlated with Cantril and increases negative affect, with the size of the effects unaffected by the introduction of country fixed effects. However, it is not associated with positive affect.

In the absence of country fixed effects life expectancy at birth is positively correlated with Cantril but the effect turns negative and non-significant with their inclusion, suggesting the life expectancy effect is driven by cross-country comparisons. Life expectancy at birth is not otherwise correlated with positive or negative affect.

In [Table 7](#) we use data from Helliwell et al (2022) to rank countries according to their Cantril scores. Column 1 ranks them using raw means while column 2 takes the country fixed effects from column 2 of [Table 6](#) as the basis for the ranking having netted out the six country-level macro factors in the model in [Table 6](#). It produces very interesting results. Controlling for these macro variables lowers the rankings of the richest countries relative to their rank position based solely on their raw mean score. For example, Canada goes from 8 to 35; Denmark, 1 to 31; Finland 2 to 13. Luxembourg 16 to 116; the Netherlands 6 to 34; New Zealand 9 to 43; Norway 4 to 18; Sweden 7 to 40. The UK falls from 18 to 85 whilst the United States drops from 13 to 44. Conversely, the ranks of the less developed countries improve: Somalia goes from 87th to 1st.

When ranking countries on their wellbeing controlling for the factors that cause countries to perform well or badly on these wellbeing ratings does not appear sensible because rankings on

corruption-perception measure. Positive affect is defined as the average of previous day affect measures for laughter, enjoyment, and doing or learning something interesting. This marks a change from recent years, where only laughter and enjoyment were included. The general form for the affect questions is: "*Did you experience the following feelings during a lot of the day yesterday?*" Only the interest question is phrased differently: "*Did you learn or do something interesting yesterday?*" Negative affect is defined as the average of previous day affect measures for worry, sadness, and anger.

residual wellbeing scores are hard to interpret. Controlling for low GDP, lots of corruption, and low life expectancy Somalians are very happy; they go from 87th ranked in the raw data to top ranked controlling for their (bad), macro-economic outcomes. But it is far from clear what this tells us. A similar problem arises with respect to the wellbeing ranking of Oswald and Wu (2010) in the final column of [Table 3](#). They find that, after controlling for lots of variables that explain happiness, Louisiana is the happiest state and New York the least happy.

We rank countries and States in [Table 8](#) based on coefficients of country and state fixed effects using the same model specifications as we used for [Table 5](#) for the eight separate wellbeing metrics, namely age, age squared, male, and year dummies. The first two columns of the table show the resultant rankings in relation to positive and negative affect scales.

In the final column of [Table 8](#) we overcome the problem of including Cantril, which is scored from 0-11, with the three other positive affect variables - enjoy, smile and well-rested – by using ranks and summing. We simply sum up the ranks across the eight variables – four positive and four negative affect variables in [Table 5](#) and re-rank. This imposes the restriction of equal weights for each variable, and we thus weight the positive and negative affect variables equally. By doing this we are comparing like with like and we have four positive and four negative affect variables.

Iraq comes bottom of both the positive affect and (reverse coded) negative affect rankings whilst, at the other end of the spectrum Hawaii does well on both (4th for positive affect, 10th for negative affect). In many cases, however, the positive and negative affect rankings are very different. Laos, for instance, is 3rd for positive affect but 204th for negative affect.

[Table 9](#) then sorts the countries by overall rank, which is our preferred summary measure, taken from the final column of [Table 8](#). It runs from Hawaii in 1st through to Iraq in 215th. The lowest ranking countries are poor, less developed countries. Somalia is now 78th rather than first as in [Table 7](#).

US states rank highly in [Table 9](#). They account for sixteen of the top twenty positions, and nine of the top ten, with Hawaii taking top place Minnesota (2), North Dakota (3), South Dakota (4), Iowa (5), Nebraska (6) Kansas (7), Alaska (9) and Wisconsin (10). Only West Virginia ranks outside the top one hundred: Sri Lanka, Bhutan, Eswatini, Suriname and Rwanda are all above West Virginia. Kentucky ranks 89th behind Kyrgyzstan, Venezuela and Kenya. The highest ranked countries are Taiwan (8); Austria (11), Netherlands (17) and Iceland (20). East European countries rank poorly: Serbia (200), Romania (188) Bosnia Herzegovina (189). Greece (177) is the lowest ranked Western European country.

It is notable that the USA ranks low when using the GWP compared to the rankings for US States from the USDT. The USA ranks 150th using the GWP data, lower than any US state from the Daily Tracker.

3. Conclusion

We examine data on well-being to determine rankings of countries and US states according to eight different well-being measures. These include four positive affect measures - life satisfaction, enjoyment, smiling and being well-rested – and four negative affect variables – pain, sadness, anger and worry. We combine data on approximately four million respondents from the Gallup

World Poll across 164 countries and the US Daily Tracker Poll for the years 2008-2017 which allows us to map in data across 50 states and the District of Columbia. The two surveys include the same questions. We rank states and countries according to positive and negative affect and find there is a considerable difference in country rankings. Many advanced countries and especially the USA rank lower on negative than positive affect.

We use all eight measures to create a final summary index. We find that the top seven ranked of the 215 are US states, in order – Hawaii, Minnesota, North Dakota, South Dakota, Iowa, Nebraska and Kansas with Alaska 9th and Wisconsin 10th. We find that only one US state ranks outside the top 100 – West Virginia (122nd). Palestine, South Sudan and Iraq rank lowest. The Nordic countries that traditionally rank high using life satisfaction measures do not rank as highly with other measures.

Our final country level rankings differ sharply from those reported in the World Happiness Index and are more comparable to those obtained with the Human Development Index. State level rankings look very different from those just based on positive affect measures and more similar to those based on objective measures. Ranking regions by multiple measures seems to be the way forward.

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Table 1. Life satisfaction rates by country, OECD, Europe and Latin America

| | 10-step BLI | 4-step WHD (2020) | | 4-step WHD (2020) |
|----------------|-------------|-------------------|--------------------|-------------------|
| Albania | | 2.37 | Argentina | 2.89 |
| Australia | 7.1 | | Bolivia | 2.82 |
| Austria | 7.2 | 3.16 | Brazil | 2.81 |
| Belgium | 6.8 | 3.18 | Chile | 2.76 |
| Bulgaria | | 2.40 | Colombia | 2.37 |
| Canada | 7.0 | | Costa Rica | 3.33 |
| Chile | 6.2 | | Dominican Republic | 3.35 |
| Croatia | | 2.96 | Ecuador | 3.10 |
| Cyprus | | 3.20 | El Salvador | 2.91 |
| Czech Republic | 6.9 | | Guatemala | 3.39 |
| Denmark | 7.5 | 3.71 | Honduras | 3.21 |
| Estonia | 6.5 | 2.91 | Mexico | 3.17 |
| Finland | 7.9 | 3.17 | Montenegro | 2.72 |
| France | 6.7 | 3.04 | Nicaragua | 3.21 |
| Germany | 7.3 | 3.25 | North Macedonia | 2.71 |
| Greece | 5.8 | 2.60 | Panama | 3.29 |
| Hungary | 6.0 | 2.96 | Paraguay | 2.94 |
| Iceland | 7.6 | | Peru | 3.03 |
| Ireland | 7.0 | 3.24 | Uruguay | 3.15 |
| Israel | 7.2 | | Venezuela | 2.88 |
| Italy | 6.5 | 2.74 | | |
| Japan | 6.1 | | | |
| Korea | 5.8 | | | |
| Latvia | 6.2 | 3.02 | | |
| Lithuania | | 3.03 | | |
| Luxembourg | 7.4 | 3.14 | | |
| Malta | | 3.17 | | |
| Mexico | 6.0 | | | |
| Netherlands | 7.5 | 3.48 | | |
| New Zealand | 7.3 | | | |
| Norway | 7.3 | | | |
| Poland | 6.1 | 3.08 | | |
| Portugal | 5.8 | 2.24 | | |
| Romania | | 2.69 | | |
| Russia | 5.5 | | | |
| Serbia | | 2.54 | | |
| Slovakia | 6.5 | 2.90 | | |
| Slovenia | 6.5 | 3.21 | | |
| South Africa | 4.9 | | | |
| Spain | 6.5 | 3.16 | | |
| Sweden | 7.3 | 3.40 | | |
| Switzerland | 7.5 | | | |
| Turkey | 4.9 | 2.73 | | |
| UK | 6.8 | 3.21 | | |
| USA | 7.0 | | | |

Table 2. Country rankings from the Human Development Index and the World Happiness Report

| | HDI 2019 | Cantril | | | Positive affect | Negative affect |
|-------------|----------|-----------|------|-----------|-----------------|-----------------|
| | | 2019-2021 | 2017 | 2010-2012 | 2010-2012 | 2010-2012 |
| Canada | 16 | 15 | 7 | 6 | 8 | 73 |
| Denmark | 10 | 2 | 2 | 1 | 52 | 34 |
| Finland | 11 | 1 | 5 | 7 | 37 | 49 |
| Germany | 6 | 14 | 16 | 26 | 41 | 23 |
| Iceland | 4 | 3 | 3 | 9 | 3 | 15 |
| Netherlands | 8 | 5 | 6 | 4 | 13 | 51 |
| Norway | 1 | 8 | 1 | 2 | 29 | 55 |
| Sweden | 7 | 7 | 9 | 5 | 26 | 41 |
| Switzerland | 2 | 4 | 4 | 3 | 14 | 29 |
| UK | 13 | 17 | 19 | 22 | 19 | 36 |
| USA | 17 | 16 | 14 | 17 | 21 | 91 |

| 2019 WHR | Cantril | Positive. | Negative |
|-------------|---------|-----------|----------|
| Canada | 15 | 25 | 79 |
| Denmark | 3 | 8 | 17 |
| Finland | 1 | 54 | 16 |
| Germany | 17 | 60 | 40 |
| Iceland | 4 | 18 | 13 |
| Netherland | 6 | 17 | 42 |
| Norway | 5 | 23 | 24 |
| Sweden | 8 | 21 | 28 |
| Switzerland | 2 | 37 | 11 |
| UK | 14 | 45 | 58 |
| USA | 19 | 30 | 54 |

Source: World Happiness Reports, 2022, 2017 and 2013 and <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>

Note: 'Positive affect' is the sum of three (1,0) dummies - 1) Did you smile or laugh a lot yesterday? 2) Did you experience the following feelings during a lot of the day yesterday? How about enjoyment? 3) How about happiness? 'Negative affect' is the sum of three (1,0) dummies - 4) How about worry? 5) How about sadness? 6) How about anger? Both scores have four steps from zero to three. Taken from Helliwell and Wang (2103) Appendix.

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Table 3. State rankings, 2020

| | Health | Social and economic | Physical environment | Behaviors | Sharecare | Covid Death rate/10000 | Gabriel et al 1990 rank | Oswald Wu 2005-8 |
|---------------|--------|---------------------|----------------------|-----------|-----------|------------------------|-------------------------|------------------|
| Alabama | 49 | 42 | 28 | 47 | 44 | 47 | 26 | 9 |
| Alaska | 27 | 36 | 33 | 26 | 23 | 6 | 23 | 11 |
| Arizona | 26 | 40 | 29 | 22 | 27 | 49 | 20 | 5 |
| Arkansas | 46 | 48 | 12 | 46 | 49 | 41 | 3 | 17 |
| California | 13 | 28 | 49 | 15 | 6 | 13 | 42 | 45 |
| Colorado | 15 | 17 | 6 | 5 | 9 | 11 | 34 | 22 |
| Connecticut | 3 | 14 | 37 | 6 | 7 | 23 | 32 | 49 |
| Delaware | 30 | 10 | 15 | 33 | 19 | 19 | 30 | 23 |
| Florida | 21 | 27 | 30 | 25 | 24 | 34 | 10 | 3 |
| Georgia | 36 | 29 | 11 | 37 | 32 | 31 | 36 | 19 |
| Hawaii | 2 | 4 | 26 | 19 | 2 | 1 | 38 | 2 |
| Idaho | 4 | 22 | 27 | 12 | 39 | 17 | 5 | 14 |
| Illinois | 17 | 21 | 42 | 29 | 13 | 21 | 48 | 44 |
| Indiana | 35 | 35 | 32 | 36 | 41 | 38 | 44 | 46 |
| Iowa | 29 | 7 | 18 | 27 | 36 | 20 | 15 | 31 |
| Kansas | 33 | 24 | 39 | 31 | 26 | 18 | 19 | 32 |
| Kentucky | 47 | 32 | 13 | 48 | 46 | 29 | 24 | 35 |
| Louisiana | 50 | 50 | 46 | 50 | 43 | 46 | 8 | 1 |
| Maine | 18 | 12 | 10 | 11 | 29 | 4 | 9 | 10 |
| Maryland | 10 | 15 | 4 | 14 | 4 | 16 | 45 | 39 |
| Massachusetts | 1 | 8 | 35 | 8 | 1 | 40 | 27 | 42 |
| Michigan | 40 | 37 | 31 | 30 | 38 | 43 | 49 | 48 |
| Minnesota | 14 | 2 | 9 | 3 | 15 | 14 | 46 | 26 |
| Mississippi | 43 | 46 | 45 | 49 | 50 | 50 | 7 | 6 |
| Missouri | 42 | 26 | 23 | 41 | 34 | 28 | 40 | 37 |
| Montana | 28 | 38 | 19 | 17 | 33 | 25 | 4 | 7 |
| Nebraska | 24 | 13 | 14 | 16 | 18 | 10 | 16 | 33 |
| Nevada | 39 | 30 | 24 | 39 | 21 | 30 | 29 | 38 |
| New Hampshire | 7 | 1 | 22 | 4 | 16 | 8 | 43 | 27 |
| New Jersey | 6 | 3 | 50 | 10 | 3 | 48 | 47 | 47 |
| New Mexico | 37 | 49 | 24 | 34 | 48 | 36 | 14 | 24 |

| | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|
| New York | 9 | 41 | 34 | 21 | 5 | 45 | 50 | 50 |
| North Carolina | 32 | 22 | 8 | 38 | 37 | 12 | 17 | 12 |
| North Dakota | 23 | 9 | 1 | 35 | 20 | 26 | 6 | 25 |
| Ohio | 38 | 34 | 43 | 42 | 31 | 24 | 33 | 43 |
| Oklahoma | 44 | 45 | 41 | 45 | 45 | 35 | 21 | 20 |
| Oregon | 20 | 20 | 47 | 7 | 14 | 7 | 22 | 30 |
| Pennsylvania | 34 | 25 | 48 | 32 | 17 | 39 | 35 | 40 |
| Rhode Island | 11 | 19 | 38 | 20 | 12 | 37 | 12 | 41 |
| South Carolina | 45 | 44 | 7 | 43 | 40 | 32 | 18 | 8 |
| South Dakota | 19 | 33 | 2 | 28 | 30 | 33 | 2 | 15 |
| Tennessee | 41 | 39 | 17 | 40 | 42 | 44 | 28 | 4 |
| Texas | 22 | 31 | 44 | 23 | 35 | 22 | 25 | 16 |
| Utah | 8 | 5 | 15 | 2 | 10 | 3 | 39 | 21 |
| Vermont | 5 | 18 | 21 | 1 | 22 | 2 | 13 | 18 |
| Virginia | 16 | 6 | 5 | 18 | 11 | 9 | 31 | 28 |
| Washington | 12 | 11 | 20 | 9 | 8 | 5 | 41 | 36 |
| West Virginia | 48 | 47 | 36 | 44 | 47 | 42 | 11 | 34 |
| Wisconsin | 31 | 16 | 40 | 13 | 25 | 15 | 37 | 29 |
| Wyoming | 25 | 43 | 3 | 24 | 28 | 27 | 1 | 13 |

<https://www.americashealthrankings.org/explore/annual/measure/Outcomes/state>

Sharecare's Community Well-being Index, 2020 state ranking report'. Covid death rate from CDC ranked lowest to highest

Table 4. OLS regressions, 2008-2017

| | Cantril | Positive affect | Enjoy | Smile | Well-rested |
|-------------------------|------------------------|------------------------|----------------|----------------|--------------------|
| US GWP | 1.6903 (88.09) | .2707 (28.34) | .1533 (38.65) | .1123 (27.03) | .0118 (2.60) |
| US DT | 1.5134 (661.1) | .3125 (241.8) | .1648 (381.4) | .1266 (265.9) | .0263 (43.19) |
| Age | -.0215 (73.82) | -.0218 (151.4) | -.0054 (99.47) | -.0065 (111.1) | -.0097 (141.8) |
| Age ² *100 | +.0267 (93.38) | +.0220 (154.2) | +.0051 (96.06) | +.0052 (90.53) | +.0114 (168.3) |
| Male | -.1264 (61.13) | +.0336 (32.65) | +.0072 (18.63) | -.1808 (43.49) | +.0443 (90.72) |
| _cons | 5.6304 | 2.5576 | .8201 | .8885 | .8375 |
| Adjusted R ² | .1195 | .0327 | .0392 | .0208 | .0166 |
| N | 4,127,376 | 3,363,406 | 4,129,118 | 3,923,102 | 3,445,124 |
| | Negative affect | Pain | Sadness | Worry | Anger |
| US GWP | -.0675 (5.91) | -.0376 (8.55) | -.0160 (4.09) | +.0101 (2.17) | -.0254 (7.04) |
| US DT | -.2324 (160.0) | -.0888 (185.1) | -.0558 (125.0) | -.0561 (11.03) | -.0561 (122.7) |
| Age | +.0224 (133.1) | +.0073 (120.2) | +.0034 (61.29) | +.0099 (154.3) | +.0019 (35.07) |
| Age ² *100 | -.0221 (133.0) | -.0046 (77.58) | -.0029 (52.86) | -.0112 (178.4) | -.0036 (67.86) |
| Male | -.1354 (112.7) | -.0370 (85.89) | -.0540 (138.0) | -.0459 (100.7) | .0005 (1.21) |
| _cons | 5.5832 | .0861 | .1527 | .1817 | .1887 |
| Adjusted R ² | .0224 | .0205 | .0113 | .0180 | .0194 |
| N | 3,555,768 | 4,128,270 | 3,967,805 | 4,127,031 | 3,583,990 |

Excluded: all other countries. Controls also include nine year dummies
 Positive is enjoy+smile+well-rested. Negative is pain+sadness+worry+anger

Table 5. Ranks for 164 countries, 50 US states and the District of Columbia obtained from regressions for pooled data for 2008-2017 that include age, age², gender and year – ranked least negative affect and most positive affect

| | Cantril | Enjoy | Smile | Well rested | Pain | Sadness | Worry | Anger |
|--------------|---------|-------|-------|-------------|------|---------|-------|-------|
| Afghanistan | 206 | 176 | 212 | 105 | 141 | 189 | 146 | 158 |
| Alabama | 33 | 40 | 57 | 107 | 87 | 82 | 65 | 64 |
| Alaska | 15 | 4 | 10 | 93 | 80 | 22 | 35 | 24 |
| Albania | 144 | 153 | 154 | 175 | 176 | 167 | 159 | 180 |
| Algeria | 118 | 188 | 173 | 131 | 166 | 29 | 139 | 172 |
| Angola | 179 | 191 | 178 | 128 | 209 | 187 | 213 | 129 |
| Argentina | 81 | 73 | 15 | 60 | 156 | 143 | 177 | 96 |
| Arizona | 36 | 24 | 22 | 73 | 44 | 51 | 77 | 63 |
| Arkansas | 57 | 50 | 81 | 119 | 90 | 85 | 74 | 71 |
| Armenia | 189 | 212 | 190 | 215 | 173 | 212 | 206 | 211 |
| Australia | 9 | 75 | 101 | 127 | 42 | 88 | 83 | 65 |
| Austria | 12 | 88 | 107 | 41 | 10 | 13 | 15 | 13 |
| Azerbaijan | 149 | 184 | 196 | 200 | 124 | 135 | 54 | 150 |
| Bahrain | 105 | 148 | 140 | 38 | 198 | 185 | 182 | 205 |
| Bangladesh | 168 | 155 | 189 | 179 | 102 | 156 | 88 | 93 |
| Belarus | 119 | 192 | 193 | 198 | 86 | 147 | 33 | 76 |
| Belgium | 35 | 84 | 74 | 145 | 99 | 87 | 142 | 112 |
| Belize | 98 | 116 | 122 | 34 | 120 | 180 | 136 | 167 |
| Benin | 208 | 197 | 152 | 204 | 196 | 160 | 178 | 157 |
| Bhutan | 137 | 77 | 85 | 1 | 168 | 11 | 158 | 195 |
| Bolivia | 112 | 123 | 118 | 144 | 177 | 209 | 208 | 192 |
| Bosnia | 141 | 189 | 197 | 209 | 114 | 126 | 188 | 190 |
| Botswana | 190 | 140 | 132 | 141 | 133 | 121 | 55 | 86 |
| Brazil | 75 | 102 | 115 | 163 | 153 | 151 | 192 | 116 |
| Bulgaria | 184 | 178 | 185 | 194 | 78 | 172 | 132 | 32 |
| Burkina Faso | 195 | 194 | 184 | 182 | 165 | 159 | 170 | 126 |
| Burundi | 212 | 161 | 205 | 149 | 104 | 89 | 99 | 107 |
| California | 42 | 48 | 39 | 86 | 47 | 92 | 106 | 91 |
| Cambodia | 194 | 96 | 108 | 158 | 144 | 210 | 196 | 179 |
| Cameroon | 170 | 182 | 164 | 147 | 200 | 164 | 167 | 149 |
| Canada | 5 | 23 | 23 | 104 | 88 | 97 | 144 | 84 |
| CAR | 215 | 202 | 183 | 140 | 215 | 207 | 211 | 176 |
| Chad | 196 | 180 | 207 | 132 | 199 | 175 | 169 | 173 |
| Chile | 80 | 76 | 64 | 150 | 161 | 157 | 180 | 137 |
| China | 140 | 49 | 110 | 8 | 8 | 2 | 12 | 83 |
| Colombia | 90 | 82 | 52 | 26 | 139 | 174 | 164 | 142 |
| Colorado | 28 | 18 | 45 | 84 | 30 | 34 | 67 | 51 |

| | | | | | | | | |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Comoros | 211 | 137 | 180 | 134 | 143 | 6 | 23 | 127 |
| Congo Brazzaville | 182 | 187 | 172 | 135 | 186 | 190 | 157 | 162 |
| Congo Kinshasa | 175 | 166 | 200 | 53 | 185 | 133 | 119 | 152 |
| Connecticut | 48 | 56 | 54 | 89 | 14 | 59 | 101 | 82 |
| Costa Rica | 25 | 66 | 2 | 27 | 138 | 142 | 156 | 124 |
| Croatia | 117 | 190 | 155 | 172 | 95 | 108 | 199 | 34 |
| Cyprus | 95 | 95 | 114 | 205 | 112 | 183 | 190 | 168 |
| Czech Republic | 83 | 108 | 156 | 183 | 83 | 42 | 124 | 163 |
| DC | 13 | 38 | 67 | 63 | 2 | 30 | 85 | 27 |
| Delaware | 40 | 45 | 48 | 69 | 36 | 49 | 61 | 58 |
| Denmark | 1 | 2 | 111 | 109 | 68 | 35 | 93 | 42 |
| Djibouti | 160 | 128 | 202 | 76 | 147 | 66 | 6 | 138 |
| Dominican Republic | 151 | 141 | 113 | 133 | 172 | 194 | 186 | 105 |
| Ecuador | 107 | 80 | 31 | 31 | 151 | 184 | 183 | 131 |
| Egypt | 176 | 205 | 182 | 159 | 208 | 202 | 187 | 201 |
| El Salvador | 100 | 91 | 11 | 18 | 179 | 182 | 184 | 143 |
| Estonia | 129 | 105 | 176 | 186 | 45 | 117 | 115 | 8 |
| Eswatini | 138 | 74 | 83 | 39 | 158 | 130 | 52 | 141 |
| Ethiopia | 180 | 157 | 157 | 189 | 62 | 136 | 28 | 132 |
| Finland | 4 | 93 | 99 | 122 | 51 | 15 | 130 | 1 |
| Florida | 50 | 52 | 25 | 81 | 43 | 69 | 90 | 79 |
| France | 76 | 98 | 95 | 176 | 111 | 99 | 114 | 170 |
| Gabon | 181 | 204 | 168 | 174 | 184 | 173 | 174 | 174 |
| Georgia | 193 | 196 | 214 | 213 | 125 | 102 | 38 | 188 |
| Georgia USA | 29 | 30 | 37 | 62 | 38 | 46 | 48 | 50 |
| Germany | 74 | 101 | 116 | 78 | 39 | 71 | 17 | 52 |
| Ghana | 165 | 170 | 98 | 43 | 175 | 139 | 47 | 108 |
| Greece | 132 | 143 | 148 | 195 | 110 | 162 | 200 | 178 |
| Guatemala | 94 | 86 | 14 | 21 | 170 | 179 | 173 | 133 |
| Guinea | 207 | 156 | 162 | 180 | 206 | 166 | 204 | 144 |
| Haiti | 203 | 200 | 194 | 170 | 191 | 200 | 116 | 186 |
| Hawaii | 11 | 1 | 6 | 32 | 12 | 21 | 25 | 28 |
| Honduras | 136 | 106 | 35 | 22 | 154 | 177 | 165 | 104 |
| Hong Kong | 125 | 151 | 137 | 16 | 4 | 7 | 133 | 106 |
| Hungary | 147 | 125 | 181 | 207 | 127 | 148 | 155 | 115 |
| Iceland | 7 | 3 | 8 | 190 | 119 | 4 | 24 | 2 |
| Idaho | 43 | 14 | 49 | 110 | 75 | 39 | 96 | 39 |
| Illinois | 51 | 34 | 46 | 67 | 22 | 44 | 80 | 68 |
| India | 169 | 133 | 166 | 117 | 148 | 171 | 129 | 177 |
| Indiana | 62 | 44 | 72 | 103 | 67 | 62 | 79 | 62 |

| | | | | | | | | |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Indonesia | 134 | 58 | 7 | 2 | 60 | 128 | 100 | 154 |
| Iowa | 46 | 9 | 30 | 44 | 21 | 19 | 34 | 21 |
| Iran | 156 | 185 | 159 | 184 | 182 | 215 | 201 | 214 |
| Iraq | 162 | 209 | 211 | 210 | 213 | 214 | 210 | 215 |
| Ireland | 30 | 64 | 87 | 51 | 6 | 103 | 45 | 60 |
| Israel | 14 | 138 | 165 | 171 | 130 | 155 | 172 | 196 |
| Italy | 89 | 147 | 123 | 169 | 46 | 178 | 195 | 101 |
| Ivory Coast | 186 | 165 | 139 | 167 | 207 | 168 | 179 | 153 |
| Jamaica | 122 | 126 | 105 | 168 | 94 | 181 | 135 | 146 |
| Japan | 96 | 117 | 75 | 11 | 5 | 5 | 41 | 110 |
| Jordan | 127 | 162 | 179 | 129 | 204 | 161 | 160 | 191 |
| Kansas | 45 | 13 | 29 | 59 | 32 | 23 | 39 | 29 |
| Kazakhstan | 108 | 115 | 158 | 125 | 77 | 81 | 8 | 23 |
| Kentucky | 71 | 62 | 88 | 138 | 103 | 113 | 118 | 80 |
| Kenya | 183 | 114 | 126 | 56 | 113 | 80 | 14 | 57 |
| Kosovo | 121 | 142 | 167 | 142 | 105 | 9 | 31 | 145 |
| Kuwait | 86 | 127 | 119 | 6 | 155 | 100 | 105 | 164 |
| Kyrgyzstan | 146 | 136 | 143 | 92 | 79 | 110 | 3 | 70 |
| Laos | 154 | 22 | 3 | 28 | 194 | 134 | 62 | 202 |
| Latvia | 126 | 130 | 199 | 193 | 70 | 138 | 138 | 56 |
| Lebanon | 142 | 203 | 206 | 173 | 132 | 154 | 162 | 187 |
| Lesotho | 200 | 121 | 120 | 148 | 150 | 98 | 126 | 125 |
| Liberia | 204 | 214 | 142 | 192 | 201 | 203 | 161 | 165 |
| Libya | 120 | 134 | 150 | 99 | 197 | 170 | 163 | 204 |
| Lithuania | 111 | 186 | 198 | 181 | 74 | 176 | 134 | 136 |
| Louisiana | 37 | 47 | 32 | 61 | 65 | 83 | 76 | 85 |
| Luxembourg | 31 | 87 | 109 | 111 | 76 | 52 | 19 | 111 |
| Madagascar | 201 | 149 | 94 | 196 | 174 | 120 | 103 | 122 |
| Maine | 56 | 32 | 42 | 97 | 49 | 55 | 73 | 31 |
| Malawi | 199 | 158 | 128 | 29 | 164 | 165 | 112 | 89 |
| Malaysia | 102 | 81 | 102 | 13 | 69 | 90 | 42 | 147 |
| Mali | 191 | 113 | 131 | 139 | 135 | 50 | 143 | 12 |
| Malta | 88 | 183 | 106 | 91 | 115 | 150 | 214 | 169 |
| Maryland | 18 | 43 | 60 | 82 | 15 | 38 | 60 | 66 |
| Massachusetts | 32 | 57 | 66 | 94 | 17 | 78 | 109 | 74 |
| Mauritania | 171 | 109 | 129 | 121 | 162 | 28 | 13 | 114 |
| Mauritius | 109 | 111 | 97 | 155 | 187 | 124 | 37 | 118 |
| Mexico | 69 | 90 | 82 | 25 | 128 | 123 | 152 | 11 |
| Michigan | 64 | 37 | 53 | 77 | 58 | 63 | 69 | 69 |
| Minnesota | 24 | 5 | 19 | 35 | 7 | 17 | 26 | 15 |

| | | | | | | | | |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Mississippi | 38 | 36 | 63 | 80 | 72 | 76 | 53 | 53 |
| Missouri | 65 | 35 | 61 | 95 | 55 | 45 | 64 | 45 |
| Moldova | 115 | 171 | 210 | 211 | 188 | 195 | 140 | 140 |
| Mongolia | 158 | 146 | 195 | 10 | 52 | 8 | 75 | 16 |
| Montana | 26 | 8 | 21 | 70 | 57 | 27 | 56 | 43 |
| Montenegro | 130 | 175 | 209 | 201 | 93 | 96 | 198 | 208 |
| Morocco | 148 | 179 | 130 | 30 | 159 | 131 | 117 | 175 |
| Mozambique | 166 | 213 | 144 | 137 | 157 | 169 | 203 | 19 |
| Myanmar | 187 | 104 | 78 | 156 | 189 | 48 | 120 | 148 |
| North. Cyprus | 103 | 154 | 135 | 178 | 56 | 196 | 113 | 206 |
| Nagorno-Karabash | 157 | 207 | 203 | 214 | 145 | 208 | 197 | 210 |
| Namibia | 177 | 174 | 76 | 46 | 126 | 109 | 141 | 117 |
| Nebraska | 39 | 12 | 26 | 52 | 24 | 25 | 36 | 25 |
| Nepal | 173 | 145 | 201 | 112 | 160 | 153 | 128 | 161 |
| Netherlands | 6 | 20 | 43 | 66 | 11 | 43 | 137 | 4 |
| Nevada | 70 | 53 | 50 | 65 | 64 | 74 | 95 | 92 |
| New Hampshire | 47 | 31 | 36 | 101 | 16 | 33 | 82 | 47 |
| New Jersey | 55 | 63 | 65 | 96 | 13 | 79 | 110 | 97 |
| New Mexico | 22 | 27 | 51 | 90 | 59 | 75 | 81 | 87 |
| New York | 58 | 65 | 73 | 106 | 35 | 91 | 107 | 100 |
| New Zealand | 10 | 59 | 84 | 143 | 34 | 67 | 44 | 46 |
| Nicaragua | 116 | 119 | 34 | 17 | 181 | 193 | 175 | 128 |
| Niger | 197 | 131 | 171 | 185 | 202 | 114 | 58 | 88 |
| Nigeria | 139 | 152 | 92 | 40 | 131 | 112 | 57 | 155 |
| North Carolina | 49 | 29 | 40 | 68 | 48 | 65 | 59 | 200 |
| North Dakota | 23 | 6 | 13 | 33 | 9 | 14 | 20 | 61 |
| North Macedonia | 152 | 173 | 208 | 197 | 134 | 144 | 185 | 9 |
| Norway | 2 | 15 | 90 | 136 | 20 | 40 | 46 | 22 |
| Ohio | 67 | 54 | 69 | 100 | 63 | 73 | 87 | 81 |
| Oklahoma | 60 | 39 | 62 | 118 | 89 | 68 | 66 | 72 |
| Oregon | 52 | 16 | 47 | 98 | 85 | 56 | 89 | 41 |
| Pakistan | 135 | 181 | 170 | 187 | 203 | 188 | 131 | 203 |
| Palestine | 164 | 193 | 192 | 203 | 205 | 191 | 191 | 207 |
| Panama | 73 | 85 | 4 | 9 | 96 | 105 | 94 | 18 |
| Paraguay | 123 | 51 | 1 | 4 | 123 | 54 | 166 | 3 |
| Pennsylvania | 59 | 46 | 59 | 75 | 37 | 58 | 70 | 77 |
| Peru | 110 | 112 | 100 | 126 | 163 | 198 | 202 | 171 |
| Philippines | 143 | 94 | 71 | 54 | 122 | 204 | 147 | 199 |
| Poland | 104 | 103 | 121 | 165 | 29 | 115 | 104 | 160 |
| Portugal | 128 | 167 | 103 | 115 | 129 | 192 | 207 | 6 |

| | | | | | | | | |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Puerto Rico | 68 | 70 | 16 | 123 | 195 | 197 | 168 | 159 |
| Qatar | 77 | 120 | 133 | 15 | 180 | 163 | 123 | 194 |
| Rhode Island | 63 | 61 | 55 | 87 | 33 | 77 | 108 | 78 |
| Romania | 133 | 172 | 177 | 208 | 171 | 199 | 194 | 98 |
| Russia | 114 | 150 | 169 | 166 | 40 | 104 | 11 | 7 |
| Rwanda | 210 | 122 | 149 | 47 | 121 | 72 | 78 | 5 |
| Saudi Arabia | 82 | 118 | 141 | 14 | 167 | 127 | 125 | 181 |
| Senegal | 178 | 124 | 134 | 57 | 190 | 26 | 102 | 44 |
| Serbia | 150 | 198 | 215 | 212 | 106 | 146 | 209 | 198 |
| Sierra Leone | 188 | 215 | 153 | 161 | 211 | 205 | 181 | 197 |
| Singapore | 78 | 139 | 138 | 12 | 54 | 16 | 18 | 103 |
| Slovakia | 99 | 107 | 161 | 154 | 116 | 101 | 148 | 183 |
| Slovenia | 97 | 177 | 160 | 72 | 66 | 61 | 193 | 123 |
| Somalia | 145 | 41 | 18 | 113 | 136 | 111 | 10 | 95 |
| Somaliland | 163 | 99 | 145 | 58 | 25 | 12 | 4 | 10 |
| South Africa | 155 | 97 | 104 | 19 | 98 | 84 | 68 | 38 |
| South Carolina | 27 | 21 | 24 | 48 | 50 | 53 | 43 | 55 |
| South Dakota | 44 | 11 | 20 | 50 | 18 | 20 | 27 | 33 |
| South Korea | 101 | 164 | 136 | 42 | 82 | 32 | 122 | 94 |
| South Sudan | 214 | 206 | 147 | 199 | 214 | 213 | 212 | 212 |
| Spain | 79 | 159 | 96 | 45 | 107 | 152 | 189 | 166 |
| Sri Lanka | 174 | 89 | 5 | 151 | 140 | 119 | 5 | 151 |
| Sudan | 172 | 169 | 163 | 164 | 183 | 137 | 92 | 134 |
| Suriname | 87 | 79 | 89 | 36 | 178 | 95 | 51 | 189 |
| Sweden | 8 | 26 | 93 | 157 | 27 | 60 | 16 | 48 |
| Switzerland | 3 | 83 | 86 | 55 | 31 | 37 | 30 | 49 |
| Syria | 198 | 211 | 191 | 191 | 109 | 211 | 205 | 213 |
| Taiwan | 84 | 68 | 68 | 20 | 3 | 1 | 2 | 35 |
| Tajikistan | 159 | 168 | 175 | 74 | 100 | 70 | 22 | 130 |
| Tanzania | 209 | 129 | 127 | 37 | 149 | 122 | 7 | 99 |
| Tennessee | 54 | 42 | 70 | 108 | 84 | 93 | 84 | 67 |
| Texas | 17 | 33 | 27 | 71 | 41 | 57 | 63 | 73 |
| Thailand | 92 | 67 | 17 | 7 | 91 | 3 | 21 | 75 |
| The Gambia | 205 | 110 | 9 | 177 | 212 | 149 | 153 | 120 |
| Togo | 213 | 208 | 174 | 188 | 210 | 206 | 215 | 185 |
| Trinidad & Tobago | 85 | 71 | 28 | 152 | 92 | 129 | 32 | 135 |
| Tunisia | 161 | 195 | 187 | 153 | 192 | 64 | 171 | 193 |
| Turkey | 124 | 201 | 188 | 162 | 71 | 201 | 127 | 209 |
| Turkmenistan | 113 | 135 | 204 | 64 | 142 | 141 | 9 | 121 |
| UAE | 53 | 100 | 112 | 5 | 152 | 107 | 97 | 156 |

| | | | | | | | | |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Uganda | 185 | 160 | 151 | 120 | 193 | 186 | 151 | 182 |
| UK | 66 | 72 | 77 | 124 | 19 | 94 | 29 | 54 |
| Ukraine | 167 | 163 | 186 | 202 | 97 | 132 | 91 | 59 |
| Uruguay | 91 | 78 | 80 | 88 | 137 | 145 | 176 | 90 |
| USA | 16 | 60 | 79 | 114 | 101 | 125 | 150 | 119 |
| Utah | 21 | 7 | 38 | 116 | 61 | 36 | 111 | 30 |
| Uzbekistan | 106 | 55 | 146 | 3 | 81 | 10 | 1 | 113 |
| Venezuela | 93 | 92 | 12 | 23 | 108 | 116 | 145 | 109 |
| Vermont | 34 | 25 | 56 | 79 | 28 | 47 | 71 | 26 |
| Vietnam | 131 | 210 | 117 | 24 | 1 | 106 | 98 | 14 |
| Virginia | 20 | 28 | 44 | 85 | 23 | 31 | 49 | 36 |
| Washington | 41 | 19 | 41 | 102 | 73 | 41 | 72 | 40 |
| West Virginia | 72 | 69 | 91 | 146 | 118 | 118 | 121 | 102 |
| Wisconsin | 61 | 17 | 33 | 49 | 26 | 24 | 40 | 37 |
| Wyoming | 19 | 10 | 58 | 83 | 53 | 18 | 50 | 20 |
| Yemen | 202 | 199 | 213 | 206 | 169 | 140 | 154 | 184 |
| Zambia | 153 | 132 | 124 | 130 | 146 | 158 | 149 | 139 |
| Zimbabwe | 192 | 144 | 125 | 160 | 117 | 86 | 86 | 17 |

Table 6. Regressions to explain average happiness, 2005-2021 using World Happiness Report 2022 data

| Independent | Cantril Ladder | | Negative Affect | | Positive Affect | |
|----------------------------------|----------------|---------------|-----------------|---------------|-----------------|---------------|
| | | | | | | |
| Log GDP per capita | .3598 (5.42) | .5749 (5.40) | -.0132 (1.43) | .0407 (4.61) | .0001 (0.01) | -.0193 (2.81) |
| Social support | 2.4204 (6.57) | 2.1444 (6.29) | .3164 (5.77) | .1154 (3.20) | -.3280 (6.75) | -.3255 (7.54) |
| Healthy life expectancy at birth | .0288 (2.85) | -.0110 (1.26) | -.0007 (0.59) | .0006 (0.69) | .0029 (3.01) | .0021 (1.08) |
| Freedom to make life choices | 1.3053 (4.38) | .7798 (3.49) | .3681 (8.93) | .1004 (4.55) | -.0905 (2.25) | -.0792 (2.77) |
| Generosity | .5827 (2.20) | .6709 (3.30) | .0900 (2.83) | .1291 (5.95) | .0243 (0.90) | .0708 (2.81) |
| Perceptions of corruption | -.7041 (2.60) | -.7592 (3.35) | -.0063 (0.23) | -.0065 (0.25) | .0940 (4.22) | .0951 (3.47) |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | No | Yes | No | Yes | Yes | Yes |
| Number of countries | 156 | 156 | 156 | 156 | 156 | 156 |
| Number of observations | 1853 | 1853 | 1848 | 1848 | 1852 | 1852 |
| R ² | .7558 | .9058 | .4456 | .8803 | .3298 | .7581 |

Source: World Happiness Report, 2022

Table 7. Cantril ranks from Table 7 above.

| | Raw data | Column 2 Table 6 |
|--------------------------|----------|------------------|
| Afghanistan | 156 | 99 |
| Albania | 92 | 77 |
| Algeria | 75 | 82 |
| Angola | 122 | 125 |
| Argentina | 34 | 29 |
| Armenia | 115 | 115 |
| Australia | 10 | 45 |
| Austria | 12 | 30 |
| Azerbaijan | 97 | 121 |
| Bahrain | 47 | 154 |
| Bangladesh | 104 | 27 |
| Belarus | 67 | 106 |
| Belgium | 17 | 37 |
| Belize | 40 | 5 |
| Benin | 138 | 66 |
| Bhutan | 84 | 131 |
| Bolivia | 59 | 16 |
| Bosnia and Herzegovina | 82 | 68 |
| Botswana | 145 | 156 |
| Brazil | 25 | 10 |
| Bulgaria | 112 | 152 |
| Burkina Faso | 137 | 86 |
| Burundi | 154 | 20 |
| Cambodia | 133 | 132 |
| Cameroon | 111 | 70 |
| Canada | 8 | 35 |
| Central African Republic | 155 | 50 |
| Chad | 141 | 59 |
| Chile | 31 | 23 |
| Colombia | 41 | 12 |
| Comoros | 148 | 120 |
| Congo (Brazzaville) | 116 | 65 |
| Congo (Kinshasa) | 129 | 22 |
| Costa Rica | 14 | 2 |
| Croatia | 64 | 72 |
| Cyprus | 42 | 57 |
| Czechia | 24 | 21 |
| Denmark | 1 | 31 |
| Djibouti | 100 | 101 |
| Dominican Republic | 80 | 134 |
| Ecuador | 60 | 33 |
| Egypt | 118 | 138 |
| El Salvador | 49 | 8 |
| Estonia | 62 | 137 |
| Eswatini | 119 | 145 |
| Ethiopia | 127 | 67 |
| Finland | 2 | 13 |
| France | 22 | 49 |
| Gabon | 117 | 148 |
| Gambia | 107 | 56 |
| Georgia | 131 | 139 |
| Germany | 19 | 62 |
| Ghana | 102 | 71 |
| Greece | 66 | 64 |

| | | |
|-------------------------|-----|-----|
| Guatemala | 39 | 7 |
| Guinea | 134 | 74 |
| Guyana | 48 | 18 |
| Haiti | 147 | 136 |
| Honduras | 74 | 24 |
| Hungary | 76 | 129 |
| Iceland | 5 | 19 |
| India | 123 | 108 |
| Indonesia | 83 | 112 |
| Iran | 99 | 128 |
| Iraq | 108 | 113 |
| Ireland | 15 | 95 |
| Israel | 11 | 4 |
| Italy | 33 | 53 |
| Ivory Coast | 110 | 81 |
| Jamaica | 58 | 28 |
| Japan | 46 | 110 |
| Jordan | 89 | 109 |
| Kazakhstan | 55 | 100 |
| Kenya | 125 | 130 |
| Kuwait | 37 | 111 |
| Kyrgyzstan | 85 | 46 |
| Laos | 93 | 119 |
| Latvia | 73 | 118 |
| Lebanon | 109 | 140 |
| Lesotho | 144 | 141 |
| Liberia | 140 | 80 |
| Libya | 70 | 98 |
| Lithuania | 52 | 73 |
| Luxembourg | 16 | 116 |
| Madagascar | 146 | 63 |
| Malawi | 142 | 58 |
| Malaysia | 57 | 96 |
| Mali | 136 | 92 |
| Malta | 30 | 93 |
| Mauritania | 124 | 124 |
| Mauritius | 54 | 91 |
| Mexico | 23 | 6 |
| Moldova | 65 | 25 |
| Mongolia | 90 | 135 |
| Montenegro | 79 | 103 |
| Morocco | 91 | 14 |
| Mozambique | 105 | 15 |
| Myanmar | 126 | 150 |
| Namibia | 114 | 142 |
| Nepal | 103 | 61 |
| Netherlands | 6 | 34 |
| New Zealand | 9 | 43 |
| Nicaragua | 61 | 17 |
| Niger | 135 | 41 |
| Nigeria | 94 | 60 |
| North Macedonia | 96 | 126 |
| Norway | 4 | 38 |
| Pakistan | 88 | 9 |
| Palestinian Territories | 113 | 84 |
| Panama | 21 | 11 |

| | | |
|--------------------------|-----|-----|
| Paraguay | 69 | 87 |
| Peru | 68 | 32 |
| Philippines | 81 | 78 |
| Poland | 51 | 97 |
| Portugal | 72 | 127 |
| Qatar | 26 | 153 |
| Romania | 63 | 54 |
| Russia | 71 | 114 |
| Rwanda | 152 | 151 |
| Saudi Arabia | 27 | 88 |
| Senegal | 120 | 75 |
| Serbia | 78 | 90 |
| Sierra Leone | 139 | 83 |
| Singapore | 28 | 147 |
| Slovakia | 44 | 55 |
| Slovenia | 43 | 107 |
| Somalia | 87 | 1 |
| South Africa | 98 | 144 |
| South Korea | 53 | 76 |
| Spain | 29 | 47 |
| Sri Lanka | 130 | 155 |
| Sudan | 128 | 123 |
| Suriname | 38 | 26 |
| Sweden | 7 | 40 |
| Switzerland | 3 | 36 |
| Syria | 143 | 143 |
| Taiwan Province of China | 32 | 89 |
| Tajikistan | 95 | 39 |
| Tanzania | 151 | 149 |
| Thailand | 45 | 69 |
| Togo | 153 | 79 |
| Trinidad and Tobago | 35 | 48 |
| Tunisia | 106 | 94 |
| Turkey | 86 | 117 |
| Uganda | 132 | 104 |
| Ukraine | 101 | 133 |
| United Arab Emirates | 20 | 102 |
| United Kingdom | 18 | 85 |
| United States | 13 | 44 |
| Uruguay | 36 | 51 |
| Uzbekistan | 56 | 42 |
| Venezuela | 50 | 3 |
| Vietnam | 77 | 52 |
| Yemen | 149 | 122 |
| Zambia | 121 | 105 |
| Zimbabwe | 150 | 146 |

Correlation coefficient 0.4673

Table 8. Positive, negative and overall rankings for 164 countries and 50 states and DC, 2008-2017.

| | Positive | Negative | Final |
|--------------------|----------|----------|-------|
| Afghanistan | 180 | 150 | 186 |
| Alabama | 55 | 82 | 56 |
| Alaska | 14 | 47 | 9 |
| Albania | 157 | 174 | 181 |
| Algeria | 168 | 129 | 151 |
| Angola | 177 | 203 | 196 |
| Argentina | 51 | 148 | 95 |
| Arizona | 21 | 51 | 27 |
| Arkansas | 67 | 87 | 72 |
| Armenia | 214 | 209 | 213 |
| Australia | 95 | 44 | 68 |
| Austria | 97 | 6 | 11 |
| Azerbaijan | 193 | 102 | 165 |
| Bahrain | 133 | 200 | 168 |
| Bangladesh | 178 | 100 | 154 |
| Belarus | 198 | 94 | 139 |
| Belgium | 96 | 104 | 91 |
| Belize | 101 | 140 | 130 |
| Benin | 189 | 183 | 201 |
| Bhutan | 9 | 149 | 99 |
| Bolivia | 125 | 205 | 178 |
| Bosnia Herzegovina | 206 | 155 | 189 |
| Botswana | 142 | 90 | 133 |
| Brazil | 120 | 164 | 144 |
| Bulgaria | 185 | 111 | 160 |
| Burkina Faso | 188 | 153 | 194 |
| Burundi | 155 | 73 | 153 |
| California | 39 | 88 | 59 |
| Cambodia | 107 | 201 | 180 |
| Cameroon | 167 | 181 | 187 |
| Canada | 46 | 112 | 65 |
| Chad | 184 | 193 | 198 |
| Chile | 91 | 161 | 134 |
| China | 18 | 4 | 30 |
| Colombia | 54 | 151 | 106 |
| Colorado | 26 | 41 | 19 |
| Comoros | 161 | 83 | 127 |
| Congo Brazzaville | 173 | 171 | 193 |
| Congo Kinshasa | 169 | 139 | 164 |
| Connecticut | 52 | 59 | 50 |
| Costa Rica | 10 | 138 | 80 |
| Croatia | 172 | 135 | 147 |
| Cyprus | 135 | 177 | 162 |
| Czech Republic | 148 | 113 | 123 |
| DC | 33 | 30 | 16 |
| Delaware | 45 | 39 | 29 |
| Denmark | 71 | 66 | 38 |
| Djibouti | 181 | 95 | 118 |
| Dominican Republic | 117 | 166 | 166 |

| | | | |
|--------------------------|-----|-----|-----|
| Ecuador | 69 | 172 | 112 |
| Egypt | 203 | 206 | 207 |
| El Salvador | 56 | 184 | 116 |
| Central African Republic | 190 | 211 | 211 |
| Estonia | 153 | 64 | 110 |
| Eswatini | 66 | 120 | 98 |
| Ethiopia | 171 | 75 | 138 |
| Finland | 98 | 31 | 51 |
| Florida | 35 | 63 | 47 |
| France | 109 | 121 | 122 |
| Gabon | 195 | 188 | 199 |
| Georgia | 210 | 107 | 177 |
| Georgia USA | 28 | 40 | 18 |
| Germany | 104 | 16 | 58 |
| Ghana | 128 | 123 | 124 |
| Greece | 158 | 167 | 176 |
| Guatemala | 49 | 175 | 107 |
| Guinea | 165 | 195 | 197 |
| Haiti | 194 | 160 | 202 |
| Hawaii | 4 | 10 | 1 |
| Honduras | 74 | 152 | 114 |
| Hong Kong | 127 | 23 | 79 |
| Hungary | 174 | 136 | 170 |
| Iceland | 83 | 36 | 20 |
| Idaho | 36 | 77 | 39 |
| Illinois | 30 | 50 | 31 |
| India | 149 | 158 | 172 |
| Indiana | 58 | 68 | 60 |
| Indonesia | 2 | 110 | 74 |
| Iowa | 12 | 15 | 5 |
| Iran | 176 | 212 | 205 |
| Iraq | 212 | 215 | 215 |
| Ireland | 70 | 35 | 36 |
| Israel | 162 | 180 | 157 |
| Italy | 145 | 144 | 142 |
| Ivory Coast | 154 | 199 | 191 |
| Jamaica | 123 | 127 | 148 |
| Japan | 73 | 8 | 37 |
| Jordan | 170 | 191 | 183 |
| Kansas | 16 | 33 | 7 |
| Kazakhstan | 136 | 13 | 82 |
| Kentucky | 90 | 114 | 89 |
| Kenya | 113 | 65 | 86 |
| Kosovo | 147 | 14 | 104 |
| Kuwait | 108 | 165 | 105 |
| Kyrgyzstan | 131 | 7 | 92 |
| Laos | 3 | 204 | 94 |
| Latvia | 175 | 108 | 143 |
| Lebanon | 207 | 154 | 190 |
| Lesotho | 114 | 117 | 149 |
| Liberia | 201 | 196 | 204 |

| | | | |
|------------------|-----|-----|-----|
| Libya | 140 | 197 | 175 |
| Lithuania | 187 | 126 | 167 |
| Louisiana | 23 | 81 | 45 |
| Luxembourg | 99 | 34 | 70 |
| Madagascar | 146 | 134 | 161 |
| Maine | 53 | 53 | 34 |
| Malawi | 132 | 131 | 140 |
| Malaysia | 81 | 97 | 75 |
| Mali | 130 | 96 | 117 |
| Malta | 141 | 189 | 152 |
| Maryland | 50 | 48 | 25 |
| Massachusetts | 64 | 70 | 55 |
| Mauritania | 116 | 71 | 102 |
| Mauritius | 111 | 122 | 121 |
| Mexico | 82 | 118 | 81 |
| Michigan | 32 | 58 | 48 |
| Minnesota | 7 | 9 | 2 |
| Mississippi | 40 | 67 | 41 |
| Missouri | 47 | 55 | 40 |
| Moldova | 208 | 170 | 192 |
| Mongolia | 139 | 11 | 76 |
| Montana | 20 | 54 | 12 |
| Montenegro | 205 | 178 | 182 |
| Morocco | 137 | 133 | 145 |
| Mozambique | 182 | 163 | 171 |
| Myanmar | 105 | 130 | 136 |
| Northern Cyprus | 150 | 147 | 158 |
| Nagorno Karabakh | 215 | 208 | 209 |
| Namibia | 118 | 109 | 129 |
| Nebraska | 13 | 26 | 6 |
| Nepal | 166 | 156 | 174 |
| Netherlands | 22 | 43 | 17 |
| Nevada | 41 | 80 | 64 |
| New Hampshire | 44 | 45 | 28 |
| New Jersey | 65 | 72 | 67 |
| New Mexico | 27 | 69 | 49 |
| New York | 72 | 89 | 73 |
| New Zealand | 87 | 32 | 46 |
| Nicaragua | 79 | 182 | 128 |
| Niger | 164 | 125 | 159 |
| Nigeria | 110 | 115 | 108 |
| North Carolina | 24 | 57 | 61 |
| North Dakota | 6 | 12 | 3 |
| North Macedonia | 200 | 176 | 169 |
| Norway | 76 | 27 | 22 |
| Ohio | 59 | 79 | 69 |
| Oklahoma | 62 | 85 | 66 |
| Oregon | 38 | 78 | 43 |
| Pakistan | 183 | 194 | 195 |
| Palestine | 197 | 202 | 210 |
| Panama | 8 | 91 | 44 |

| | | | |
|-------------------|-----|-----|-----|
| Paraguay | 1 | 105 | 54 |
| Pennsylvania | 43 | 56 | 42 |
| Peru | 106 | 198 | 163 |
| Philippines | 92 | 173 | 137 |
| Poland | 121 | 101 | 115 |
| Portugal | 134 | 169 | 141 |
| Puerto Rico | 63 | 185 | 132 |
| Qatar | 103 | 186 | 135 |
| Rhode Island | 57 | 74 | 63 |
| Romania | 191 | 190 | 188 |
| Russia | 163 | 18 | 87 |
| Rwanda | 119 | 49 | 96 |
| Saudi Arabia | 100 | 157 | 126 |
| Senegal | 112 | 103 | 103 |
| Serbia | 213 | 187 | 200 |
| Sierra Leone | 204 | 207 | 206 |
| Singapore | 126 | 5 | 62 |
| Slovakia | 144 | 137 | 146 |
| Slovenia | 159 | 128 | 125 |
| Somalia | 25 | 19 | 78 |
| Somaliland | 115 | 2 | 53 |
| South Africa | 86 | 24 | 77 |
| South Carolina | 15 | 42 | 15 |
| South Dakota | 11 | 22 | 4 |
| South Korea | 143 | 76 | 90 |
| South Sudan | 196 | 214 | 214 |
| Spain | 124 | 162 | 131 |
| Sri Lanka | 88 | 93 | 100 |
| Sudan | 179 | 141 | 173 |
| Suriname | 84 | 146 | 97 |
| Sweden | 93 | 28 | 35 |
| Switzerland | 89 | 25 | 24 |
| Syria | 209 | 213 | 208 |
| Taiwan | 17 | 1 | 8 |
| Tajikistan | 152 | 62 | 113 |
| Tanzania | 122 | 86 | 109 |
| Tennessee | 61 | 92 | 71 |
| Texas | 29 | 61 | 26 |
| Thailand | 5 | 17 | 23 |
| Gambia | 102 | 159 | 156 |
| Togo | 192 | 210 | 212 |
| Trinidad & Tobago | 78 | 99 | 85 |
| Tunisia | 202 | 179 | 184 |
| Turkey | 199 | 168 | 179 |
| Turkmenistan | 160 | 98 | 120 |
| Uganda | 151 | 192 | 93 |
| Ukraine | 186 | 106 | 185 |
| UAEs | 80 | 132 | 57 |
| USA | 77 | 124 | 150 |
| UK | 85 | 21 | 111 |
| Uruguay | 75 | 142 | 88 |

| | | | |
|---------------|-----|-----|-----|
| Utah | 42 | 84 | 32 |
| Uzbekistan | 60 | 3 | 52 |
| Venezuela | 68 | 116 | 83 |
| Vermont | 48 | 46 | 21 |
| Vietnam | 156 | 20 | 84 |
| Virginia | 37 | 37 | 14 |
| Washington | 31 | 60 | 33 |
| West Virginia | 94 | 119 | 101 |
| Wisconsin | 19 | 29 | 10 |
| Wyoming | 34 | 38 | 13 |
| Yemen | 211 | 143 | 203 |
| Zambia | 129 | 145 | 155 |
| Zimbabwe | 138 | 52 | 119 |

Regressions include age and its square, male and 8 year-dummies.

Positive affect is the sum of enjoy, smile and well rested

Negative affect is the sum of pain, sadness, worry and anger.

Final column is from summing the ranks on the eight columns of Table 5, which includes Cantril and reranking them.

Table 9. Final state and country well-being country rankings from Table 8 final column

| | | | | | | | |
|----------------|----|-------------------|-----|----------------|-----|-------------------|-----|
| Hawaii | 1 | Singapore | 62 | Czech Republic | 123 | Tunisia | 184 |
| Minnesota | 2 | Rhode Island | 63 | Ghana | 124 | Ukraine | 185 |
| North Dakota | 3 | Nevada | 64 | Slovenia | 125 | Afghanistan | 186 |
| South Dakota | 4 | Canada | 65 | Saudi Arabia | 126 | Cameroon | 187 |
| Iowa | 5 | Oklahoma | 66 | Comoros | 127 | Romania | 188 |
| Nebraska | 6 | New Jersey | 67 | Nicaragua | 128 | Bosnia | 189 |
| Kansas | 7 | Australia | 68 | Namibia | 129 | Lebanon | 190 |
| Taiwan | 8 | Ohio | 69 | Belize | 130 | Ivory Coast | 191 |
| Alaska | 9 | Luxembourg | 70 | Spain | 131 | Moldova | 192 |
| Wisconsin | 10 | Tennessee | 71 | Puerto Rico | 132 | Congo Brazzaville | 193 |
| Austria | 11 | Arkansas | 72 | Botswana | 133 | Burkina Faso | 194 |
| Montana | 12 | New York | 73 | Chile | 134 | Pakistan | 195 |
| Wyoming | 13 | Indonesia | 74 | Qatar | 135 | Angola | 196 |
| Virginia | 14 | Malaysia | 75 | Myanmar | 136 | Guinea | 197 |
| South Carolina | 15 | Mongolia | 76 | Philippines | 137 | Chad | 198 |
| DC | 16 | South Africa | 77 | Ethiopia | 138 | Gabon | 199 |
| Netherlands | 17 | Somalia | 78 | Belarus | 139 | Serbia | 200 |
| Georgia USA | 18 | Hong Kong | 79 | Malawi | 140 | Benin | 201 |
| Colorado | 19 | Costa Rica | 80 | Portugal | 141 | Haiti | 202 |
| Iceland | 20 | Mexico | 81 | Italy | 142 | Yemen | 203 |
| Vermont | 21 | Kazakhstan | 82 | Latvia | 143 | Liberia | 204 |
| Norway | 22 | Venezuela | 83 | Brazil | 144 | Iran | 205 |
| Thailand | 23 | Vietnam | 84 | Morocco | 145 | Sierra Leone | 206 |
| Switzerland | 24 | Trinidad & Tobago | 85 | Slovakia | 146 | Egypt | 207 |
| Maryland | 25 | Kenya | 86 | Croatia | 147 | Syria | 208 |
| Texas | 26 | Russia | 87 | Jamaica | 148 | Nagorno Karabakh | 209 |
| Arizona | 27 | Uruguay | 88 | Lesotho | 149 | Palestine | 210 |
| New Hampshire | 28 | Kentucky | 89 | USA | 150 | CAR | 211 |
| Delaware | 29 | South Korea | 90 | Algeria | 151 | Togo | 212 |
| China | 30 | Belgium | 91 | Malta | 152 | Armenia | 213 |
| Illinois | 31 | Kyrgyzstan | 92 | Burundi | 153 | South Sudan | 214 |
| Utah | 32 | Uganda | 93 | Bangladesh | 154 | Iraq | 215 |
| Washington | 33 | Laos | 94 | Zambia | 155 | | |
| Maine | 34 | Argentina | 95 | Gambia | 156 | | |
| Sweden | 35 | Rwanda | 96 | Israel | 157 | | |
| Ireland | 36 | Suriname | 97 | N. Cyprus | 158 | | |
| Japan | 37 | Eswatini | 98 | Niger | 159 | | |
| Denmark | 38 | Bhutan | 99 | Bulgaria | 160 | | |
| Idaho | 39 | Sri Lanka | 100 | Madagascar | 161 | | |
| Missouri | 40 | West Virginia | 101 | Cyprus | 162 | | |
| Mississippi | 41 | Mauritania | 102 | Peru | 163 | | |
| Pennsylvania | 42 | Senegal | 103 | Congo Kins | 164 | | |
| Oregon | 43 | Kosovo | 104 | Azerbaijan | 165 | | |
| Panama | 44 | Kuwait | 105 | Dominican R | 166 | | |
| Louisiana | 45 | Colombia | 106 | Lithuania | 167 | | |
| New Zealand | 46 | Guatemala | 107 | Bahrain | 168 | | |
| Florida | 47 | Nigeria | 108 | N. Macedonia | 169 | | |
| Michigan | 48 | Tanzania | 109 | Hungary | 170 | | |
| New Mexico | 49 | Estonia | 110 | Mozambique | 171 | | |
| Connecticut | 50 | UK | 111 | India | 172 | | |
| Finland | 51 | Ecuador | 112 | Sudan | 173 | | |
| Uzbekistan | 52 | Tajikistan | 113 | Nepal | 174 | | |
| Somaliland | 53 | Honduras | 114 | Libya | 175 | | |
| Paraguay | 54 | Poland | 115 | Greece | 176 | | |
| Massachusetts | 55 | El Salvador | 116 | Georgia | 177 | | |
| Alabama | 56 | Mali | 117 | Bolivia | 178 | | |
| UAE | 57 | Djibouti | 118 | Turkey | 179 | | |
| Germany | 58 | Zimbabwe | 119 | Cambodia | 180 | | |
| California | 59 | Turkmenistan | 120 | Albania | 181 | | |
| Indiana | 60 | Mauritius | 121 | Montenegro | 182 | | |
| North Carolina | 61 | France | 122 | Jordan | 183 | | |

Appendix Table 1. World Bank GDP per capita rankings US\$ -214 countries

| | | |
|-----|----------------------|-----------|
| 208 | Afghanistan | \$517 |
| 113 | Albania | \$6,494 |
| 143 | Algeria | \$3,765 |
| 80 | American Samoa | \$12,845 |
| 33 | Andorra | \$43,048 |
| 166 | Angola | \$2,138 |
| 75 | Antigua and Barbuda | \$14,901 |
| 87 | Argentina | \$10,729 |
| 129 | Armenia | \$4,670 |
| 56 | Aruba | \$23,384 |
| 18 | Australia | \$59,934 |
| 22 | Austria | \$53,268 |
| 118 | Azerbaijan | \$5,384 |
| 48 | Bahamas, The | \$28,239 |
| 57 | Bahrain | \$22,232 |
| 160 | Bangladesh | \$2,503 |
| 68 | Barbados | \$17,034 |
| 107 | Belarus | \$7,304 |
| 24 | Belgium | \$51,768 |
| 133 | Belize | \$4,421 |
| 181 | Benin | \$1,428 |
| 4 | Bermuda | \$110,870 |
| 153 | Bhutan | \$3,001 |
| 150 | Bolivia | \$3,415 |
| 110 | Bosnia Herzegovina | \$6,916 |
| 106 | Botswana | \$7,348 |
| 105 | Brazil | \$7,519 |
| 42 | Brunei Darussalam | \$31,723 |
| 85 | Bulgaria | \$11,635 |
| 193 | Burkina Faso | \$918 |
| 214 | Burundi | \$237 |
| 149 | Cabo Verde | \$3,446 |
| 176 | Cambodia | \$1,591 |
| 174 | Cameroon | \$1,662 |
| 23 | Canada | \$52,051 |
| 9 | Cayman Islands | \$85,347 |
| 211 | Central African Rep. | \$512 |
| 201 | Chad | \$696 |
| 10 | Channel Islands | \$74,463 |
| 70 | Chile | \$16,503 |
| 81 | China | \$12,556 |
| 114 | Colombia | \$6,131 |
| 179 | Comoros | \$1,495 |
| 207 | Congo, Dem. Rep. | \$584 |
| 165 | Congo, Rep. | \$2,214 |
| 82 | Costa Rica | \$12,509 |
| 158 | Cote d'Ivoire | \$2,579 |
| 67 | Croatia | \$17,399 |
| 93 | Cuba | \$9,478 |
| 72 | Curacao | \$16,110 |
| 44 | Cyprus | \$30,799 |
| 50 | Czech Republic | \$26,379 |
| 14 | Denmark | \$67,803 |
| 151 | Djibouti | \$3,364 |
| 104 | Dominica | \$7,560 |
| 99 | Dominican Republic | \$8,604 |
| 116 | Ecuador | \$5,935 |
| 141 | Egypt, Arab Rep. | \$3,876 |
| 134 | El Salvador | \$4,409 |
| 100 | Equatorial Guinea | \$8,462 |
| 205 | Eritrea | \$643 |

| | | |
|-----|--------------------|-----------|
| 49 | Estonia | \$27,281 |
| 137 | Eswatini | \$4,215 |
| 192 | Ethiopia | \$944 |
| 15 | Faroe Islands | \$66,321 |
| 121 | Fiji | \$5,086 |
| 21 | Finland | \$53,983 |
| 32 | France | \$43,519 |
| 63 | French Polynesia | \$20,183 |
| 101 | Gabon | \$8,017 |
| 197 | Gambia, The | \$836 |
| 123 | Georgia | \$5,042 |
| 26 | Germany | \$50,802 |
| 162 | Ghana | \$2,445 |
| 62 | Greece | \$20,277 |
| 20 | Greenland | \$54,570 |
| 89 | Grenada | \$9,929 |
| 40 | Guam | \$34,624 |
| 124 | Guatemala | \$5,026 |
| 186 | Guinea | \$1,174 |
| 199 | Guinea-Bissau | \$813 |
| 94 | Guyana | \$9,375 |
| 171 | Haiti | \$1,815 |
| 155 | Honduras | \$2,831 |
| 27 | Hong Kong | \$49,661 |
| 64 | Hungary | \$18,773 |
| 13 | Iceland | \$68,384 |
| 164 | India | \$2,277 |
| 136 | Indonesia | \$4,292 |
| 156 | Iran, Islamic Rep. | \$2,757 |
| 122 | Iraq | \$5,048 |
| 5 | Ireland | \$99,152 |
| 8 | Isle of Man | \$86,482 |
| 25 | Israel | \$51,430 |
| 37 | Italy | \$35,551 |
| 131 | Jamaica | \$4,587 |
| 35 | Japan | \$39,285 |
| 135 | Jordan | \$4,406 |
| 88 | Kazakhstan | \$10,042 |
| 169 | Kenya | \$2,007 |
| 178 | Kiribati | \$1,515 |
| 38 | Korea, Rep. | \$34,758 |
| 125 | Kosovo | \$4,987 |
| 51 | Kuwait | \$24,812 |
| 182 | Kyrgyz Republic | \$1,276 |
| 159 | Lao PDR | \$2,551 |
| 61 | Latvia | \$20,642 |
| 157 | Lebanon | \$2,670 |
| 187 | Lesotho | \$1,167 |
| 203 | Liberia | \$673 |
| 115 | Libya | \$6,018 |
| 2 | Liechtenstein | \$169,049 |
| 55 | Lithuania | \$23,433 |
| 3 | Luxembourg | \$135,683 |
| 31 | Macao SAR, China | \$45,422 |
| 210 | Madagascar | \$515 |
| 204 | Malawi | \$643 |
| 86 | Malaysia | \$11,371 |
| 97 | Maldives | \$8,995 |
| 194 | Mali | \$918 |
| 41 | Malta | \$33,257 |
| 138 | Marshall Islands | \$4,171 |
| 173 | Mauritania | \$1,723 |

| | | |
|-----|--------------------------|-----------|
| 98 | Mauritius | \$8,812 |
| 90 | Mexico | \$9,926 |
| 148 | Micronesia | \$3,477 |
| 119 | Moldova | \$5,315 |
| 1 | Monaco | \$173,688 |
| 132 | Mongolia | \$4,535 |
| 95 | Montenegro | \$9,367 |
| 147 | Morocco | \$3,497 |
| 212 | Mozambique | \$500 |
| 185 | Myanmar | \$1,187 |
| 128 | Namibia | \$4,729 |
| 83 | Nauru | \$12,252 |
| 184 | Nepal | \$1,223 |
| 19 | Netherlands | \$58,061 |
| 39 | New Caledonia | \$34,695 |
| 28 | New Zealand | \$48,802 |
| 167 | Nicaragua | \$2,091 |
| 206 | Niger | \$595 |
| 168 | Nigeria | \$2,085 |
| 111 | North Macedonia | \$6,721 |
| 60 | Northern Mariana | \$20,660 |
| 7 | Norway | \$89,203 |
| 71 | Oman | \$16,439 |
| 177 | Pakistan | \$1,538 |
| 78 | Palau | \$14,244 |
| 77 | Panama | \$14,517 |
| 154 | Papua New Guinea | \$2,916 |
| 117 | Paraguay | \$5,400 |
| 112 | Peru | \$6,692 |
| 146 | Philippines | \$3,549 |
| 66 | Poland | \$17,841 |
| 52 | Portugal | \$24,262 |
| 43 | Puerto Rico | \$31,430 |
| 16 | Qatar | \$61,276 |
| 76 | Romania | \$14,862 |
| 84 | Russian Federation | \$12,173 |
| 198 | Rwanda | \$834 |
| 139 | Samoa | \$3,939 |
| 30 | San Marino | \$45,516 |
| 161 | Sao Tome & Principe | \$2,449 |
| 54 | Saudi Arabia | \$23,586 |
| 175 | Senegal | \$1,607 |
| 96 | Serbia | \$9,215 |
| 79 | Seychelles | \$13,307 |
| 209 | Sierra Leone | \$516 |
| 11 | Singapore | \$72,794 |
| 47 | Sint Maarten (Dutch) | \$28,988 |
| 59 | Slovak Republic | \$21,088 |
| 46 | Slovenia | \$29,201 |
| 163 | Solomon Islands | \$2,337 |
| 213 | Somalia | \$446 |
| 109 | South Africa | \$6,994 |
| 190 | South Sudan | \$1,120 |
| 45 | Spain | \$30,116 |
| 142 | Sri Lanka | \$3,815 |
| 65 | St. Kitts and Nevis | \$18,230 |
| 92 | St. Lucia | \$9,571 |
| 58 | St. Martin (French) | \$21,459 |
| 102 | St. Vincent & Grenadines | \$7,997 |
| 200 | Sudan | \$764 |
| 126 | Suriname | \$4,836 |
| 17 | Sweden | \$60,239 |

| | | |
|-----|-----------------------|----------|
| 6 | Switzerland | \$93,457 |
| 183 | Syrian Arab Republic | \$1,266 |
| 195 | Tajikistan | \$897 |
| 188 | Tanzania | \$1,136 |
| 108 | Thailand | \$7,233 |
| 180 | Timor-Leste | \$1,458 |
| 191 | Togo | \$992 |
| 130 | Tonga | \$4,625 |
| 74 | Trinidad and Tobago | \$15,243 |
| 140 | Tunisia | \$3,924 |
| 91 | Turkey | \$9,587 |
| 103 | Turkmenistan | \$7,612 |
| 53 | Turks & Caicos | \$24,047 |
| 120 | Tuvalu | \$5,292 |
| 196 | Uganda | \$858 |
| 127 | Ukraine | \$4,836 |
| 36 | United Arab Emirates | \$36,285 |
| 29 | United Kingdom | \$47,334 |
| 12 | United States | \$69,288 |
| 69 | Uruguay | \$17,021 |
| 170 | Uzbekistan | \$1,983 |
| 152 | Vanuatu | \$3,127 |
| 73 | Venezuela, RB | \$16,056 |
| 144 | Vietnam | \$3,694 |
| 34 | Virgin Islands (U.S.) | \$39,552 |
| 145 | West Bank and Gaza | \$3,664 |
| 202 | Yemen, Rep. | \$691 |
| 189 | Zambia | \$1,121 |
| 172 | Zimbabwe | \$1,737 |

Source:

<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

Appendix Table 2. Sustainable Ranking by UN Sustainable Development Report

| | | | | | |
|----|------------------------|-----|---------------------|-----|--------------------------|
| 1 | Finland | 62 | Suriname | 123 | Sao Tome and Principe |
| 2 | Denmark | 63 | Ecuador | 124 | Rwanda |
| 3 | Sweden | 64 | Algeria | 125 | Pakistan |
| 4 | Norway | 65 | Kazakhstan | 126 | Senegal |
| 5 | Austria | 66 | Armenia | 127 | Cote d'Ivoire |
| 6 | Germany | 67 | Maldives | 128 | Ethiopia |
| 7 | France | 68 | Dominican Republic | 129 | Syrian Arab Republic |
| 8 | Switzerland | 69 | Tunisia | 130 | Tanzania |
| 9 | Ireland | 70 | Bhutan | 131 | Zimbabwe |
| 10 | Estonia | 71 | Turkey | 132 | Mauritania |
| 11 | United Kingdom | 72 | Malaysia | 133 | Togo |
| 12 | Poland | 73 | Barbados | 134 | Cameroon |
| 13 | Czech Republic | 74 | Mexico | 135 | Lesotho |
| 14 | Latvia | 75 | Colombia | 136 | Uganda |
| 15 | Slovenia | 76 | Sri Lanka | 137 | Eswatini |
| 16 | Spain | 77 | Uzbekistan | 138 | Burkina Faso |
| 17 | Netherlands | 78 | Tajikistan | 139 | Nigeria |
| 18 | Belgium | 79 | El Salvador | 140 | Zambia |
| 19 | Japan | 80 | Jordan | 141 | Burundi |
| 20 | Portugal | 81 | Oman | 142 | Mali |
| 21 | Hungary | 82 | Indonesia | 143 | Mozambique |
| 22 | Iceland | 83 | Jamaica | 144 | Papua New Guinea |
| 23 | Croatia | 84 | Morocco | 145 | Malawi |
| 24 | Slovak Republic | 85 | UAE | 146 | Sierra Leone |
| 25 | Italy | 86 | Montenegro | 147 | Afghanistan |
| 26 | New Zealand | 87 | Egypt, Arab Rep. | 148 | Congo, Rep. |
| 27 | Korea, Rep. | 88 | Iran, Islamic Rep. | 149 | Niger |
| 28 | Chile | 89 | Mauritius | 150 | Yemen, Rep. |
| 29 | Canada | 90 | Bolivia | 151 | Haiti |
| 30 | Romania | 91 | Paraguay | 152 | Guinea |
| 31 | Uruguay | 92 | Nicaragua | 153 | Benin |
| 32 | Greece | 93 | Brunei Darussalam | 154 | Angola |
| 33 | Malta | 94 | Qatar | 155 | Djibouti |
| 34 | Belarus | 95 | Philippines | 156 | Madagascar |
| 35 | Serbia | 96 | Saudi Arabia | 157 | Congo, Dem. Rep. |
| 36 | Luxembourg | 97 | Lebanon | 158 | Liberia |
| 37 | Ukraine | 98 | Nepal | 159 | Sudan |
| 38 | Australia | 99 | Turkmenistan | 160 | Somalia |
| 39 | Lithuania | 100 | Belize | 161 | Chad |
| 40 | Cuba | 101 | Kuwait | 162 | Central African Republic |
| 41 | United States | 102 | Bahrain | 163 | South Sudan |
| 42 | Bulgaria | 103 | Myanmar | | |
| 43 | Cyprus | 104 | Bangladesh | | |
| 44 | Thailand | 105 | Panama | | |
| 45 | Russian Federation | 106 | Guyana | | |
| 46 | Moldova | 107 | Cambodia | | |
| 47 | Costa Rica | 108 | South Africa | | |
| 48 | Kyrgyz Republic | 109 | Mongolia | | |
| 49 | Israel | 110 | Ghana | | |
| 50 | Azerbaijan | 111 | Lao PDR | | |
| 51 | Georgia | 112 | Honduras | | |
| 52 | Fiji | 113 | Gabon | | |
| 53 | Brazil | 114 | Namibia | | |
| 54 | Argentina | 115 | Iraq | | |
| 55 | Vietnam | 116 | Botswana | | |
| 56 | China | 117 | Guatemala | | |
| 57 | North Macedonia | 118 | Kenya | | |
| 58 | Peru | 119 | Trinidad and Tobago | | |
| 59 | Bosnia and Herzegovina | 120 | Venezuela | | |
| 60 | Singapore | 121 | India | | |
| 61 | Albania | 122 | Gambia, The | | |

<https://dashboards.sdindex.org/rankings>

<https://s3.amazonaws.com/sustainabledevelopment.report/2022/2022-sustainable-development-report.pdf>

Countries are ranked based on seventeen metrics covering education, pollution & health, and inequality. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement.

Appendix Table 3. Ranks by country HDI 2019

| | | | |
|--------------------------|-----|---------------------|-----|
| Afghanistan | 133 | Dominican Republic | 75 |
| Albania | 61 | Ecuador | 73 |
| Algeria | 77 | Egypt | 95 |
| Angola | 116 | El Salvador | 101 |
| Argentina | 44 | Estonia | 28 |
| Armenia | 69 | Ethiopia | 136 |
| Australia | 8 | Finland | 11 |
| Austria | 18 | France | 25 |
| Azerbaijan | 74 | Gabon | 97 |
| Bahrain | 40 | Georgia | 54 |
| Bangladesh | 109 | Germany | 6 |
| Belarus | 49 | Ghana | 110 |
| Belgium | 14 | Greece | 31 |
| Belize | 90 | Guatemala | 103 |
| Benin | 123 | Guinea | 140 |
| Bhutan | 105 | Haiti | 134 |
| Bolivia | 87 | Honduras | 108 |
| Bosnia and Herzegovina | 64 | Hong Kong | 4 |
| Botswana | 81 | Hungary | 38 |
| Brazil | 71 | Iceland | 5 |
| Bulgaria | 52 | India | 107 |
| Burkina Faso | 143 | Indonesia | 88 |
| Burundi | 146 | Iran | 62 |
| Cambodia | 113 | Iraq | 100 |
| Cameroon | 120 | Ireland | 2 |
| Canada | 16 | Israel | 19 |
| Central African Republic | 149 | Italy | 29 |
| Chad | 148 | Ivory Coast | 127 |
| Chile | 41 | Jamaica | 82 |
| China | 72 | Japan | 20 |
| Colombia | 70 | Jordan | 83 |
| Congo (Brazzaville) | 117 | Kazakhstan | 47 |
| Congo (Kinshasa) | 138 | Kenya | 112 |
| Costa Rica | 55 | Kuwait | 57 |
| Croatia | 42 | Kyrgyzstan | 98 |
| Cyprus | 32 | Latvia | 35 |
| Czech Republic | 26 | Lebanon | 78 |
| Denmark | 10 | Lesotho | 130 |
| Liberia | 139 | Serbia | 58 |
| Libya | 85 | Sierra Leone | 144 |
| Lithuania | 33 | Singapore | 12 |
| Luxembourg | 22 | Slovakia | 37 |
| Madagascar | 129 | Slovenia | 21 |
| Malawi | 137 | South Africa | 93 |
| Malaysia | 56 | South Korea | 23 |
| Mali | 145 | South Sudan | 147 |
| Malta | 27 | Spain | 24 |
| Mauritania | 122 | Sri Lanka | 63 |
| Mauritius | 59 | Sudan | 135 |
| Mexico | 65 | Sweden | 7 |
| Moldova | 76 | Switzerland | 3 |
| Mongolia | 80 | Syria | 119 |
| Montenegro | 45 | Tajikistan | 102 |
| Morocco | 99 | Tanzania | 128 |
| Mozambique | 142 | Thailand | 68 |
| Myanmar | 115 | Togo | 131 |
| Namibia | 106 | Trinidad and Tobago | 60 |
| Nepal | 111 | Tunisia | 79 |
| Netherlands | 9 | Turkey | 50 |
| New Zealand | 15 | Turkmenistan | 91 |
| Nicaragua | 104 | Uganda | 124 |

| | | | |
|-------------------------|-----|----------------------|-----|
| Niger | 150 | Ukraine | 66 |
| Nigeria | 126 | United Arab Emirates | 30 |
| Norway | 1 | United Kingdom | 13 |
| Pakistan | 121 | United States | 17 |
| Palestinian Territories | 94 | Uruguay | 51 |
| Panama | 53 | Uzbekistan | 86 |
| Paraguay | 84 | Venezuela | 92 |
| Peru | 67 | Vietnam | 96 |
| Philippines | 89 | Yemen | 141 |
| Poland | 34 | Zambia | 114 |
| Portugal | 36 | Zimbabwe | 133 |
| Qatar | 43 | | |
| Romania | 46 | | |
| Russia | 48 | | |
| Rwanda | 125 | | |
| Saudi Arabia | 39 | | |
| Senegal | 132 | | |

Appendix Table 4. Mean well-being weighted scores in 164 countries and 50 states and the District of Columbia, 2008-2017

| | Cantril | Enjoy | Smile | Wellrested | Pain | Worry | Sadness | Anger |
|--------------------|---------|-------|-------|------------|-------|-------|---------|-------|
| Afghanistan | 3.861 | 0.609 | 0.528 | 0.684 | 0.284 | 0.365 | 0.287 | 0.228 |
| Alabama | 6.935 | 0.841 | 0.811 | 0.697 | 0.284 | 0.312 | 0.191 | 0.139 |
| Alaska | 7.07 | 0.884 | 0.847 | 0.702 | 0.245 | 0.284 | 0.143 | 0.12 |
| Albania | 5.03 | 0.652 | 0.668 | 0.62 | 0.378 | 0.417 | 0.262 | 0.252 |
| Algeria | 5.532 | 0.575 | 0.634 | 0.661 | 0.34 | 0.372 | 0.149 | 0.258 |
| Angola | 4.425 | 0.574 | 0.621 | 0.664 | 0.451 | 0.572 | 0.284 | 0.197 |
| Argentina | 6.449 | 0.838 | 0.861 | 0.725 | 0.348 | 0.441 | 0.216 | 0.147 |
| Arizona | 6.959 | 0.852 | 0.83 | 0.71 | 0.242 | 0.315 | 0.177 | 0.135 |
| Arkansas | 6.83 | 0.836 | 0.8 | 0.689 | 0.297 | 0.317 | 0.194 | 0.142 |
| Armenia | 4.347 | 0.497 | 0.612 | 0.462 | 0.353 | 0.517 | 0.377 | 0.4 |
| Australia | 7.306 | 0.809 | 0.777 | 0.678 | 0.236 | 0.321 | 0.185 | 0.142 |
| Austria | 7.225 | 0.781 | 0.769 | 0.734 | 0.205 | 0.256 | 0.138 | 0.107 |
| Azerbaijan | 4.952 | 0.595 | 0.581 | 0.564 | 0.283 | 0.294 | 0.202 | 0.209 |
| Bahrain | 5.786 | 0.676 | 0.706 | 0.726 | 0.384 | 0.47 | 0.296 | 0.351 |
| Bangladesh | 4.747 | 0.675 | 0.615 | 0.619 | 0.229 | 0.297 | 0.227 | 0.149 |
| Belarus | 5.568 | 0.576 | 0.576 | 0.579 | 0.252 | 0.267 | 0.232 | 0.143 |
| Belgium | 6.961 | 0.79 | 0.819 | 0.674 | 0.293 | 0.372 | 0.185 | 0.159 |
| Belize | 5.956 | 0.75 | 0.757 | 0.739 | 0.268 | 0.362 | 0.267 | 0.224 |
| Benin | 3.741 | 0.555 | 0.694 | 0.56 | 0.391 | 0.465 | 0.253 | 0.228 |
| Bhutan | 5.196 | 0.816 | 0.816 | 0.841 | 0.363 | 0.435 | 0.124 | 0.297 |
| Bolivia | 5.784 | 0.751 | 0.786 | 0.674 | 0.345 | 0.536 | 0.361 | 0.273 |
| Bosnia Herzegovina | 5.018 | 0.558 | 0.547 | 0.516 | 0.315 | 0.483 | 0.226 | 0.259 |
| Botswana | 4.034 | 0.689 | 0.735 | 0.659 | 0.3 | 0.303 | 0.207 | 0.157 |
| Brazil | 6.798 | 0.76 | 0.789 | 0.638 | 0.322 | 0.479 | 0.222 | 0.163 |
| Bulgaria | 4.351 | 0.621 | 0.606 | 0.609 | 0.238 | 0.336 | 0.247 | 0.113 |
| Burkina | 4.075 | 0.588 | 0.613 | 0.614 | 0.331 | 0.441 | 0.241 | 0.189 |
| Burundi | 3.493 | 0.645 | 0.582 | 0.653 | 0.233 | 0.308 | 0.164 | 0.172 |
| California | 6.951 | 0.842 | 0.834 | 0.708 | 0.235 | 0.336 | 0.194 | 0.15 |
| Cambodia | 4.178 | 0.781 | 0.798 | 0.649 | 0.302 | 0.506 | 0.377 | 0.243 |
| Cameroon | 4.567 | 0.602 | 0.662 | 0.673 | 0.406 | 0.423 | 0.246 | 0.218 |
| Canada | 7.429 | 0.862 | 0.838 | 0.694 | 0.279 | 0.382 | 0.196 | 0.15 |
| Central | 3.355 | 0.531 | 0.609 | 0.66 | 0.582 | 0.58 | 0.38 | 0.262 |
| Chad | 4.029 | 0.588 | 0.546 | 0.646 | 0.425 | 0.455 | 0.286 | 0.261 |
| Chile | 6.499 | 0.818 | 0.834 | 0.658 | 0.363 | 0.461 | 0.245 | 0.199 |
| China | 5.036 | 0.861 | 0.785 | 0.81 | 0.16 | 0.237 | 0.083 | 0.145 |

| | | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Colombia | 6.352 | 0.813 | 0.851 | 0.751 | 0.297 | 0.414 | 0.252 | 0.195 |
| Colorado | 6.973 | 0.86 | 0.826 | 0.704 | 0.23 | 0.306 | 0.161 | 0.134 |
| Comoros | 3.744 | 0.71 | 0.618 | 0.678 | 0.284 | 0.253 | 0.094 | 0.19 |
| Congo Kinshasa | 4.349 | 0.611 | 0.576 | 0.696 | 0.372 | 0.355 | 0.221 | 0.229 |
| Congo Brazzaville | 4.262 | 0.592 | 0.642 | 0.676 | 0.372 | 0.418 | 0.302 | 0.236 |
| Connecticut | 6.878 | 0.838 | 0.822 | 0.702 | 0.218 | 0.326 | 0.175 | 0.144 |
| Costa Rica | 7.186 | 0.854 | 0.886 | 0.751 | 0.296 | 0.4 | 0.209 | 0.175 |
| Croatia | 5.516 | 0.561 | 0.649 | 0.604 | 0.291 | 0.531 | 0.209 | 0.127 |
| Cyprus | 5.982 | 0.76 | 0.766 | 0.566 | 0.295 | 0.484 | 0.295 | 0.239 |
| Czechia | 6.496 | 0.748 | 0.672 | 0.626 | 0.248 | 0.339 | 0.15 | 0.225 |
| DC | 7.153 | 0.856 | 0.834 | 0.712 | 0.173 | 0.314 | 0.153 | 0.127 |
| Delaware | 6.88 | 0.838 | 0.813 | 0.702 | 0.257 | 0.31 | 0.181 | 0.137 |
| Denmark | 7.638 | 0.893 | 0.773 | 0.696 | 0.252 | 0.308 | 0.162 | 0.129 |
| Djibouti | 4.84 | 0.73 | 0.582 | 0.717 | 0.278 | 0.188 | 0.144 | 0.197 |
| Dominica | 5.147 | 0.719 | 0.803 | 0.683 | 0.341 | 0.446 | 0.282 | 0.152 |
| Ecuador | 5.88 | 0.828 | 0.864 | 0.749 | 0.309 | 0.441 | 0.267 | 0.175 |
| Egypt | 4.388 | 0.514 | 0.617 | 0.642 | 0.442 | 0.457 | 0.325 | 0.312 |
| El Salvador | 6.014 | 0.788 | 0.875 | 0.768 | 0.347 | 0.457 | 0.267 | 0.198 |
| Estonia | 5.529 | 0.766 | 0.644 | 0.629 | 0.212 | 0.309 | 0.189 | 0.092 |
| Eswatini | 4.867 | 0.822 | 0.825 | 0.701 | 0.341 | 0.307 | 0.221 | 0.225 |
| Ethiopia | 4.438 | 0.658 | 0.685 | 0.591 | 0.202 | 0.274 | 0.212 | 0.193 |
| Finland | 7.496 | 0.758 | 0.784 | 0.68 | 0.243 | 0.354 | 0.143 | 0.069 |
| Florida | 6.86 | 0.837 | 0.825 | 0.713 | 0.246 | 0.32 | 0.185 | 0.139 |
| France | 6.617 | 0.763 | 0.787 | 0.636 | 0.303 | 0.338 | 0.194 | 0.23 |
| Gabon | 4.312 | 0.512 | 0.653 | 0.614 | 0.395 | 0.473 | 0.273 | 0.266 |
| Georgia | 4.218 | 0.569 | 0.497 | 0.522 | 0.294 | 0.262 | 0.18 | 0.257 |
| Georgia USA | 6.942 | 0.848 | 0.824 | 0.712 | 0.232 | 0.3 | 0.171 | 0.139 |
| Germany | 6.715 | 0.763 | 0.759 | 0.724 | 0.226 | 0.244 | 0.165 | 0.123 |
| Ghana | 4.726 | 0.623 | 0.808 | 0.723 | 0.352 | 0.288 | 0.212 | 0.168 |
| Greece | 5.321 | 0.683 | 0.685 | 0.593 | 0.288 | 0.509 | 0.257 | 0.246 |
| Guatemala | 6.241 | 0.811 | 0.88 | 0.763 | 0.334 | 0.436 | 0.252 | 0.189 |
| Guinea | 3.841 | 0.662 | 0.682 | 0.613 | 0.429 | 0.525 | 0.255 | 0.211 |
| Haiti | 4.015 | 0.548 | 0.6 | 0.632 | 0.371 | 0.331 | 0.324 | 0.272 |
| Hawaii | 7.216 | 0.89 | 0.86 | 0.738 | 0.202 | 0.266 | 0.147 | 0.123 |
| Honduras | 5.317 | 0.769 | 0.863 | 0.762 | 0.316 | 0.415 | 0.255 | 0.158 |
| Hong Kong | 5.439 | 0.644 | 0.711 | 0.773 | 0.161 | 0.35 | 0.114 | 0.162 |

| | | | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Hungary | 5.129 | 0.734 | 0.62 | 0.559 | 0.298 | 0.377 | 0.228 | 0.163 |
| Iceland | 7.438 | 0.89 | 0.858 | 0.593 | 0.32 | 0.27 | 0.117 | 0.091 |
| Idaho | 6.932 | 0.862 | 0.822 | 0.693 | 0.256 | 0.323 | 0.164 | 0.127 |
| Illinois | 6.89 | 0.852 | 0.826 | 0.712 | 0.215 | 0.313 | 0.169 | 0.141 |
| India | 4.575 | 0.702 | 0.645 | 0.684 | 0.318 | 0.363 | 0.264 | 0.26 |
| Indiana | 6.819 | 0.844 | 0.809 | 0.696 | 0.257 | 0.316 | 0.177 | 0.141 |
| Indonesia | 5.268 | 0.853 | 0.874 | 0.832 | 0.216 | 0.332 | 0.211 | 0.214 |
| Iowa | 6.914 | 0.869 | 0.83 | 0.731 | 0.219 | 0.275 | 0.149 | 0.114 |
| Iran | 4.754 | 0.587 | 0.668 | 0.601 | 0.372 | 0.526 | 0.459 | 0.468 |
| Iraq | 4.682 | 0.48 | 0.536 | 0.501 | 0.53 | 0.583 | 0.461 | 0.492 |
| Ireland | 7.052 | 0.839 | 0.808 | 0.721 | 0.187 | 0.298 | 0.196 | 0.143 |
| Israel | 7.281 | 0.697 | 0.646 | 0.626 | 0.304 | 0.441 | 0.234 | 0.296 |
| Italy | 6.105 | 0.669 | 0.73 | 0.628 | 0.25 | 0.517 | 0.297 | 0.15 |
| Ivory Coast | 4.246 | 0.638 | 0.72 | 0.626 | 0.454 | 0.457 | 0.254 | 0.219 |
| Jamaica | 5.571 | 0.74 | 0.792 | 0.617 | 0.246 | 0.358 | 0.274 | 0.2 |
| Japan | 5.956 | 0.733 | 0.815 | 0.801 | 0.198 | 0.277 | 0.117 | 0.15 |
| Jordan | 5.386 | 0.643 | 0.629 | 0.677 | 0.396 | 0.411 | 0.242 | 0.288 |
| Kansas | 6.932 | 0.866 | 0.83 | 0.719 | 0.23 | 0.292 | 0.153 | 0.124 |
| Kazakhstan | 5.746 | 0.746 | 0.678 | 0.686 | 0.222 | 0.205 | 0.168 | 0.119 |
| Kentucky | 6.734 | 0.825 | 0.789 | 0.665 | 0.308 | 0.354 | 0.215 | 0.143 |
| Kenya | 4.308 | 0.755 | 0.762 | 0.712 | 0.249 | 0.245 | 0.163 | 0.145 |
| Kosovo | 5.516 | 0.694 | 0.653 | 0.68 | 0.262 | 0.241 | 0.108 | 0.182 |
| Kuwait | 6.366 | 0.72 | 0.774 | 0.807 | 0.318 | 0.328 | 0.175 | 0.236 |
| Kyrgyzstan | 5.097 | 0.709 | 0.717 | 0.721 | 0.204 | 0.156 | 0.177 | 0.133 |
| Laos | 4.822 | 0.876 | 0.884 | 0.738 | 0.389 | 0.309 | 0.224 | 0.34 |
| Latvia | 5.446 | 0.705 | 0.566 | 0.596 | 0.245 | 0.348 | 0.212 | 0.133 |
| Lebanon | 5.028 | 0.52 | 0.55 | 0.602 | 0.302 | 0.433 | 0.249 | 0.28 |
| Lesotho | 4.173 | 0.741 | 0.771 | 0.661 | 0.317 | 0.338 | 0.186 | 0.172 |
| Liberia | 3.912 | 0.451 | 0.704 | 0.573 | 0.424 | 0.433 | 0.344 | 0.236 |
| Libya | 5.613 | 0.7 | 0.699 | 0.688 | 0.428 | 0.448 | 0.273 | 0.367 |
| Lithuania | 5.707 | 0.594 | 0.581 | 0.62 | 0.237 | 0.347 | 0.268 | 0.191 |
| Louisiana | 6.947 | 0.838 | 0.823 | 0.716 | 0.256 | 0.316 | 0.192 | 0.146 |
| Luxembourg | 6.969 | 0.777 | 0.77 | 0.699 | 0.257 | 0.267 | 0.172 | 0.161 |
| Madagascar | 3.923 | 0.671 | 0.801 | 0.576 | 0.36 | 0.325 | 0.196 | 0.184 |
| Maine | 6.831 | 0.847 | 0.821 | 0.697 | 0.257 | 0.306 | 0.171 | 0.121 |
| Malawi | 4.092 | 0.649 | 0.761 | 0.74 | 0.335 | 0.34 | 0.256 | 0.157 |

| | | | | | | | | |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Malaysia | 5.832 | 0.806 | 0.799 | 0.78 | 0.202 | 0.286 | 0.176 | 0.203 |
| Mali | 4.179 | 0.754 | 0.746 | 0.678 | 0.279 | 0.356 | 0.145 | 0.109 |
| Malta | 6.337 | 0.586 | 0.776 | 0.714 | 0.301 | 0.596 | 0.234 | 0.233 |
| Maryland | 7.033 | 0.845 | 0.82 | 0.702 | 0.211 | 0.306 | 0.164 | 0.139 |
| Massachusetts | 6.948 | 0.837 | 0.816 | 0.702 | 0.219 | 0.335 | 0.183 | 0.142 |
| Mauritania | 4.523 | 0.745 | 0.752 | 0.676 | 0.334 | 0.242 | 0.14 | 0.173 |
| Mauritius | 5.727 | 0.744 | 0.797 | 0.636 | 0.402 | 0.284 | 0.207 | 0.176 |
| Mexico | 6.882 | 0.781 | 0.825 | 0.748 | 0.285 | 0.381 | 0.2 | 0.112 |
| Michigan | 6.808 | 0.847 | 0.818 | 0.706 | 0.255 | 0.309 | 0.176 | 0.138 |
| Minnesota | 6.995 | 0.873 | 0.836 | 0.731 | 0.205 | 0.269 | 0.144 | 0.114 |
| Mississippi | 6.925 | 0.841 | 0.807 | 0.707 | 0.267 | 0.31 | 0.194 | 0.143 |
| Missouri | 6.789 | 0.846 | 0.813 | 0.695 | 0.253 | 0.311 | 0.17 | 0.135 |
| Moldova | 5.702 | 0.634 | 0.545 | 0.524 | 0.382 | 0.35 | 0.3 | 0.198 |
| Mongolia | 4.902 | 0.696 | 0.602 | 0.797 | 0.186 | 0.298 | 0.114 | 0.125 |
| Montana | 6.983 | 0.871 | 0.833 | 0.715 | 0.255 | 0.299 | 0.15 | 0.121 |
| Montenegro | 5.233 | 0.587 | 0.518 | 0.542 | 0.28 | 0.53 | 0.192 | 0.384 |
| Morocco | 5.053 | 0.615 | 0.745 | 0.742 | 0.33 | 0.336 | 0.2 | 0.24 |
| Mozambique | 4.618 | 0.473 | 0.716 | 0.68 | 0.316 | 0.516 | 0.261 | 0.137 |
| Myanmar | 4.381 | 0.766 | 0.836 | 0.629 | 0.393 | 0.338 | 0.162 | 0.208 |
| Nagorno- | 4.856 | 0.499 | 0.551 | 0.438 | 0.347 | 0.529 | 0.398 | 0.401 |
| Namibia | 4.508 | 0.626 | 0.841 | 0.712 | 0.302 | 0.384 | 0.21 | 0.18 |
| Nebraska | 6.985 | 0.871 | 0.839 | 0.727 | 0.215 | 0.279 | 0.15 | 0.121 |
| Nepal | 4.562 | 0.699 | 0.588 | 0.692 | 0.331 | 0.344 | 0.229 | 0.231 |
| Netherlands | 7.455 | 0.866 | 0.828 | 0.712 | 0.211 | 0.358 | 0.165 | 0.095 |
| Nevada | 6.745 | 0.841 | 0.826 | 0.708 | 0.251 | 0.329 | 0.187 | 0.148 |
| New Hampshire | 6.907 | 0.851 | 0.82 | 0.699 | 0.223 | 0.312 | 0.16 | 0.126 |
| New Jersey | 6.884 | 0.829 | 0.819 | 0.699 | 0.214 | 0.335 | 0.183 | 0.149 |
| New Mexico | 7.006 | 0.855 | 0.822 | 0.705 | 0.255 | 0.314 | 0.187 | 0.144 |
| New York | 6.874 | 0.826 | 0.815 | 0.699 | 0.231 | 0.329 | 0.189 | 0.151 |
| New Zealand | 7.291 | 0.846 | 0.818 | 0.67 | 0.226 | 0.294 | 0.167 | 0.132 |
| Nicaragua | 5.737 | 0.756 | 0.866 | 0.771 | 0.342 | 0.445 | 0.286 | 0.186 |
| Niger | 4.134 | 0.711 | 0.657 | 0.616 | 0.407 | 0.295 | 0.186 | 0.156 |
| Nigeria | 5.105 | 0.658 | 0.822 | 0.731 | 0.275 | 0.292 | 0.18 | 0.222 |
| North Carolina | 6.885 | 0.85 | 0.819 | 0.712 | 0.25 | 0.309 | 0.182 | 0.137 |
| North Dakota | 7.040 | 0.882 | 0.843 | 0.742 | 0.2 | 0.259 | 0.135 | 0.107 |
| North Macedonia | 4.900 | 0.607 | 0.546 | 0.579 | 0.324 | 0.455 | 0.228 | 0.314 |

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|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Northern | 5.751 | 0.64 | 0.715 | 0.619 | 0.233 | 0.352 | 0.336 | 0.363 |
| Norway | 7.572 | 0.874 | 0.811 | 0.668 | 0.229 | 0.299 | 0.17 | 0.123 |
| Ohio | 6.773 | 0.838 | 0.808 | 0.695 | 0.259 | 0.321 | 0.185 | 0.146 |
| Oklahoma | 6.843 | 0.849 | 0.818 | 0.69 | 0.285 | 0.312 | 0.179 | 0.141 |
| Oregon | 6.858 | 0.859 | 0.822 | 0.7 | 0.279 | 0.326 | 0.177 | 0.127 |
| Pakistan | 5.182 | 0.604 | 0.645 | 0.601 | 0.402 | 0.356 | 0.287 | 0.345 |
| Palestine | 4.666 | 0.575 | 0.601 | 0.557 | 0.412 | 0.496 | 0.301 | 0.381 |
| Panama | 6.82 | 0.801 | 0.885 | 0.799 | 0.24 | 0.313 | 0.183 | 0.122 |
| Paraguay | 5.655 | 0.879 | 0.896 | 0.835 | 0.254 | 0.396 | 0.14 | 0.093 |
| Pennsylvania | 6.869 | 0.845 | 0.815 | 0.713 | 0.239 | 0.304 | 0.172 | 0.138 |
| Peru | 5.661 | 0.753 | 0.802 | 0.682 | 0.339 | 0.511 | 0.319 | 0.239 |
| Philippines | 5.116 | 0.795 | 0.837 | 0.724 | 0.269 | 0.364 | 0.34 | 0.305 |
| Poland | 5.893 | 0.767 | 0.764 | 0.64 | 0.205 | 0.298 | 0.189 | 0.218 |
| Portugal | 5.252 | 0.617 | 0.766 | 0.695 | 0.338 | 0.543 | 0.322 | 0.094 |
| Puerto Rico | 7.039 | 0.834 | 0.839 | 0.699 | 0.413 | 0.415 | 0.305 | 0.191 |
| Qatar | 6.554 | 0.731 | 0.728 | 0.759 | 0.33 | 0.358 | 0.245 | 0.298 |
| Rhode Island | 6.81 | 0.827 | 0.82 | 0.707 | 0.24 | 0.338 | 0.193 | 0.144 |
| Romania | 5.456 | 0.654 | 0.651 | 0.572 | 0.35 | 0.458 | 0.305 | 0.144 |
| Russia | 5.598 | 0.674 | 0.641 | 0.632 | 0.211 | 0.226 | 0.181 | 0.096 |
| Rwanda | 3.646 | 0.735 | 0.699 | 0.709 | 0.269 | 0.311 | 0.167 | 0.111 |
| Saudi Arabia | 6.415 | 0.749 | 0.719 | 0.776 | 0.332 | 0.347 | 0.199 | 0.267 |
| Senegal | 4.281 | 0.726 | 0.738 | 0.704 | 0.388 | 0.336 | 0.139 | 0.15 |
| Serbia | 5.025 | 0.554 | 0.452 | 0.512 | 0.297 | 0.559 | 0.236 | 0.306 |
| Sierra Leone | 4.29 | 0.414 | 0.678 | 0.633 | 0.503 | 0.477 | 0.36 | 0.318 |
| Singapore | 6.521 | 0.685 | 0.706 | 0.781 | 0.221 | 0.251 | 0.135 | 0.156 |
| Slovakia | 6.062 | 0.761 | 0.663 | 0.665 | 0.28 | 0.361 | 0.176 | 0.261 |
| Slovenia | 5.923 | 0.593 | 0.657 | 0.71 | 0.262 | 0.508 | 0.17 | 0.17 |
| Somalia | 5.151 | 0.88 | 0.87 | 0.678 | 0.294 | 0.231 | 0.194 | 0.158 |
| Somaliland | 4.888 | 0.779 | 0.711 | 0.719 | 0.155 | 0.172 | 0.114 | 0.121 |
| South Africa | 4.825 | 0.763 | 0.795 | 0.758 | 0.242 | 0.307 | 0.174 | 0.143 |
| South Carolina | 6.94 | 0.85 | 0.824 | 0.721 | 0.258 | 0.298 | 0.178 | 0.139 |
| South Dakota | 6.933 | 0.868 | 0.832 | 0.725 | 0.209 | 0.268 | 0.142 | 0.123 |
| South Korea | 5.941 | 0.63 | 0.706 | 0.731 | 0.241 | 0.347 | 0.147 | 0.147 |
| South Sudan | 3.397 | 0.495 | 0.705 | 0.55 | 0.57 | 0.598 | 0.429 | 0.435 |
| Spain | 6.397 | 0.619 | 0.775 | 0.722 | 0.292 | 0.49 | 0.256 | 0.237 |
| Sri Lanka | 4.284 | 0.775 | 0.873 | 0.651 | 0.321 | 0.197 | 0.202 | 0.194 |

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|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Sudan | 4.385 | 0.602 | 0.645 | 0.616 | 0.361 | 0.316 | 0.208 | 0.203 |
| Suriname | 6.269 | 0.813 | 0.818 | 0.728 | 0.351 | 0.297 | 0.178 | 0.275 |
| Sweden | 7.369 | 0.871 | 0.797 | 0.647 | 0.223 | 0.246 | 0.164 | 0.127 |
| Switzerland | 7.539 | 0.799 | 0.802 | 0.714 | 0.227 | 0.278 | 0.17 | 0.126 |
| Syria | 4.104 | 0.483 | 0.602 | 0.59 | 0.235 | 0.544 | 0.385 | 0.456 |
| Taiwan | 6.26 | 0.837 | 0.83 | 0.757 | 0.173 | 0.178 | 0.073 | 0.133 |
| Tajikistan | 4.871 | 0.628 | 0.638 | 0.712 | 0.232 | 0.246 | 0.156 | 0.192 |
| Tanzania | 3.634 | 0.701 | 0.746 | 0.723 | 0.309 | 0.219 | 0.202 | 0.164 |
| Tennessee | 6.837 | 0.839 | 0.805 | 0.69 | 0.281 | 0.325 | 0.197 | 0.142 |
| Texas | 7.044 | 0.849 | 0.836 | 0.71 | 0.232 | 0.312 | 0.179 | 0.145 |
| Thailand | 6.182 | 0.841 | 0.855 | 0.802 | 0.25 | 0.262 | 0.098 | 0.136 |
| The Gambia | 4.118 | 0.762 | 0.914 | 0.625 | 0.541 | 0.394 | 0.253 | 0.185 |
| Togo | 3.427 | 0.486 | 0.634 | 0.58 | 0.501 | 0.617 | 0.369 | 0.283 |
| Trinidad & Tobago | 6.394 | 0.845 | 0.86 | 0.647 | 0.237 | 0.261 | 0.19 | 0.194 |
| Tunisia | 4.816 | 0.564 | 0.596 | 0.642 | 0.384 | 0.45 | 0.161 | 0.291 |
| Turkey | 5.35 | 0.513 | 0.588 | 0.632 | 0.219 | 0.352 | 0.339 | 0.373 |
| Turkmenistan | 5.738 | 0.711 | 0.569 | 0.712 | 0.308 | 0.233 | 0.212 | 0.18 |
| Uganda | 4.249 | 0.641 | 0.705 | 0.679 | 0.382 | 0.385 | 0.296 | 0.283 |
| Ukraine | 4.689 | 0.618 | 0.578 | 0.558 | 0.284 | 0.313 | 0.212 | 0.136 |
| United Arab Emirates | 6.897 | 0.758 | 0.778 | 0.806 | 0.294 | 0.332 | 0.191 | 0.218 |
| United Kingdom | 6.873 | 0.824 | 0.818 | 0.691 | 0.207 | 0.264 | 0.177 | 0.132 |
| United States | 7.081 | 0.837 | 0.81 | 0.685 | 0.292 | 0.382 | 0.22 | 0.178 |
| Uruguay | 6.316 | 0.827 | 0.833 | 0.721 | 0.314 | 0.433 | 0.207 | 0.137 |
| Utah | 7.037 | 0.877 | 0.833 | 0.685 | 0.238 | 0.343 | 0.164 | 0.129 |
| Uzbekistan | 5.775 | 0.871 | 0.707 | 0.845 | 0.205 | 0.152 | 0.115 | 0.167 |
| Venezuela | 6.191 | 0.78 | 0.858 | 0.754 | 0.256 | 0.36 | 0.19 | 0.161 |
| Vermont | 6.909 | 0.852 | 0.814 | 0.704 | 0.238 | 0.302 | 0.168 | 0.124 |
| Vietnam | 5.3 | 0.465 | 0.768 | 0.745 | 0.124 | 0.326 | 0.192 | 0.121 |
| Virginia | 6.978 | 0.851 | 0.821 | 0.704 | 0.223 | 0.302 | 0.162 | 0.133 |
| Washington | 6.924 | 0.86 | 0.828 | 0.696 | 0.26 | 0.314 | 0.167 | 0.13 |
| West Virginia | 6.696 | 0.815 | 0.776 | 0.653 | 0.334 | 0.357 | 0.22 | 0.158 |
| Wisconsin | 6.82 | 0.858 | 0.827 | 0.717 | 0.227 | 0.289 | 0.152 | 0.129 |
| Wyoming | 7.039 | 0.873 | 0.816 | 0.714 | 0.249 | 0.289 | 0.137 | 0.109 |
| Yemen | 4.014 | 0.543 | 0.512 | 0.546 | 0.334 | 0.385 | 0.208 | 0.27 |
| Zambia | 4.749 | 0.706 | 0.751 | 0.67 | 0.312 | 0.387 | 0.252 | 0.214 |
| Zimbabwe | 4.167 | 0.696 | 0.758 | 0.641 | 0.254 | 0.309 | 0.17 | 0.126 |

Appendix Table 5. Correlation Matrix in the micro data, 2008-2017

correl cantril enjoy smile wellrested pain sad worry anger pos neg if year>=2008 & year<2018
 (obs=3,293,125)

| | cantril | enjoy | smile | wellre-d | pain | sad | worry | anger | ositive | negative |
|------------|---------|---------|---------|----------|---------|---------|---------|---------|---------|----------|
| cantril | 1.0000 | | | | | | | | | |
| enjoy | 0.2786 | 1.0000 | | | | | | | | |
| smile | 0.2296 | 0.4613 | 1.0000 | | | | | | | |
| wellrested | 0.1753 | 0.3088 | 0.2656 | 1.0000 | | | | | | |
| pain | -0.1821 | -0.1951 | -0.1604 | -0.2357 | 1.0000 | | | | | |
| sad | -0.2203 | -0.2849 | -0.2467 | -0.2163 | 0.2550 | 1.0000 | | | | |
| worry | -0.2366 | -0.2702 | -0.2254 | -0.2616 | 0.2687 | 0.4420 | 1.0000 | | | |
| anger | -0.1701 | -0.2077 | -0.1791 | -0.1792 | 0.1792 | 0.3276 | 0.2975 | 1.0000 | | |
| positive | 0.3015 | 0.7719 | 0.7570 | 0.7218 | -0.2646 | -0.3310 | -0.3371 | -0.2512 | 1.000 | |
| negative | -0.2962 | -0.3489 | -0.2951 | -0.3285 | 0.6389 | 0.7252 | 0.7581 | 0.6186 | 0.4326 | 1.000 |

Appendix Table 6. GWP sample sizes, 2008-2017

| | | | | | | | | | | | |
|--------------------------|-----------|--------------------|---------|--------|------------|--------|--------|------------------|--------------|-------------------|------------|
| USA Daily Tracker | 2,575,022 | | Denmark | 10,746 | | Latvia | 7,959 | | Portugal | 10,931 | Uzbekistan |
| | 9,799 | | | | | | | | | | |
| USA GWP | 12,170 | Djibouti | | 4,979 | Lebanon | | 14,026 | | Puerto Rico | 500 | Venezuela |
| | 9,911 | | | | | | | | | | |
| Afghanistan | 11,898 | Dominican Republic | | 9,874 | Lesotho | | 2,944 | | Qatar | 6,944 | Vietnam |
| | 593 | | | | | | | | | | |
| Albania | 9,000 | Ecuador | | 9,979 | Liberia | | 5,877 | | Romania | 8,899 | Yemen |
| 899 | | | | | | | | | | | |
| Algeria | 8,033 | Egypt | | 19,789 | Libya | | 3,973 | | Russia | 22,494 | Zambia |
| | 8,933 | | | | | | | | | | |
| Angola | 3,942 | El Salvador | | 9,820 | Lithuania | | 8,807 | | Rwanda | 8,967 | Zimbabwe |
| 9,946 | | | | | | | | | | | |
| Argentina | 9,971 | Estonia | | 8,184 | Luxembourg | | 8,983 | | Saudi Arabia | 15,327 | |
| Armenia | 9,921 | Eswatini | | 1,000 | Madagascar | | 7,966 | Senegal | 9,942 | | |
| Australia | 9,994 | Ethiopia | | 6,461 | Malawi | | 7,984 | Serbia | 9,014 | | |
| Austria | 10,978 | Finland | | 9,728 | Malaysia | | 8,967 | Sierra Leone | 7,831 | | |
| Azerbaijan | 9,838 | France | | 11,687 | | | | Mali | 9,886 | Singapore | 10,521 |
| Bahrain | 13,168 | Gabon | | 6,956 | | | | Malta | 8,998 | Slovakia | 7,975 |
| Bangladesh | 11,876 | Georgia | | 10,006 | | | | Mauritania | 12,864 | Slovenia | 9,478 |
| Belarus | 10,168 | Germany | | 35,065 | | | | Mauritius | 3,981 | Somalia | 3,173 |
| Belgium | 10,000 | Ghana | | 9,898 | | | | Mexico | 10,990 | Somaliland region | 7,000 |
| Belize | 501 | Greece | | 8,986 | | | | Moldova | 9,833 | South Africa | 10,981 |
| Benin | 7,784 | Guatemala | | 9,730 | | | | Mongolia | 8,932 | South Korea | 11,797 |
| Bhutan | 3,016 | Guinea | | 6,897 | | | | Montenegro | 8,966 | South Sudan | 3,877 |
| Bolivia | 9,773 | Haiti | | 4,508 | | | | Morocco | 9,920 | Spain | 11,995 |
| Bosnia and Herzegovina | 9,001 | Honduras | | 9,837 | | | | Mozambique | 3,936 | Sri Lanka | 10,167 |
| Botswana | 8,940 | Hong Kong | | 8,273 | | | | Myanmar | 6,609 | Sudan | 7,571 |
| Brazil | 11,060 | Hungary | | 9,025 | | | | Nagorno-Karabakh | 996 | Suriname | 490 |
| Bulgaria | 8,956 | Iceland | | 3,602 | | | | Namibia | 1,972 | Sweden | 10,706 |
| Burkina Faso | 8,921 | India | | 41,684 | | | | Nepal | 10,676 | Switzerland | 6,500 |
| Burundi | 3,993 | Indonesia | | 12,062 | | | | Netherlands | 9,738 | Syria | 11,304 |
| Cambodia | 10,496 | Iran | | 11,436 | | | | New Zealand | 9,001 | Taiwan | 9,913 |
| Cameroon | 10,081 | Iraq | | 14,800 | | | | Nicaragua | 9,696 | Tajikistan | 9,944 |
| Canada | 12,088 | Ireland | | 10,470 | | | | Niger | 9,944 | Tanzania | 9,991 |
| Central African Republic | 3,967 | Israel | | 9,978 | | | | Nigeria | 8,915 | Thailand | 10,945 |
| Chad | 9,926 | Italy | | 11,976 | | | | Northern Cyprus | 4,982 | The Gambia | 981 |
| Chile | 10,217 | Ivory Coast | | 5,927 | | | | North Macedonia | 9,075 | Togo | 5,914 |
| China | 46,407 | Jamaica | | 1,966 | | | | Norway | 7,977 | Trinidad & Tobago | 2,004 |
| Colombia | 9,927 | Japan | | 13,939 | | | | Oman | 1,998 | Tunisia | 12,232 |
| Comoros | 6,989 | Jordan | | 13,973 | | | | Pakistan | 16,205 | Turkey | 11,943 |
| Congo (Kinshasa) | 7,960 | Kazakhstan | | 9,772 | | | | Palestine | 13,975 | Turkmenistan | 7,959 |

| | | | | | | | |
|-------------------|-------|------------|--------|-------------|--------|---------|--------|
| Congo Brazzaville | 7,365 | Kenya | 11,165 | Panama | 9,952 | Uganda | 9,886 |
| Costa Rica | 9,928 | Kosovo | 10,065 | Paraguay | 8,948 | Ukraine | 9,922 |
| Croatia | 8,807 | Kuwait | 12,932 | Peru | 9,862 | UAE | 16,657 |
| Cyprus | 8,473 | Kyrgyzstan | 9,904 | Philippines | 10,960 | UK | 31,178 |
| Czech Republic | 9,056 | Laos | 3,751 | Poland | 9,841 | Uruguay | 9,888 |