

FREQUENTLY ASKED QUESTIONS

What is the original source of the data for Figure 2.2? How are the rankings calculated?

The rankings in figure 2.2 use data that come from the Gallup World Poll (for more information see the [Gallup World Poll methodology](#)). The rankings are based on answers to the main life evaluation question asked in the poll. This is called the Cantril ladder: it asks respondents to think of a ladder, with the best possible life for them being a 10, and the worst possible life being a 0. They are then asked to rate their own current lives on that 0 to 10 scale.

The rankings are from nationally representative samples, for the years 2013-2015. They are based entirely on the survey scores, using the Gallup weights to make the estimates representative. The sub-bars show the estimated extent to which each of six factors – levels of GDP, life expectancy, generosity, social support, freedom, and corruption – contribute to making life evaluations higher in each country than they are in Dystopia, a hypothetical country that has values equal to the world's lowest national averages for each of the six factors (see FAQs: What is Dystopia?). They have no impact on the total score reported for each country, but instead are just a way of explaining for each country the implications of the model estimated in Table 2.1. People often ask why some countries rank higher than others – the sub-bars (including the residuals, which show what is not explained) are an attempt to provide an answer to that question.

What is your sample size for figure 2.2?

We use the most recent years in order to provide an up-to-date measure, and to measure changes over time. We combine data from the years 2013-2015 to make the sample size large enough to reduce the random sampling errors. (The horizontal lines at the right-hand end of each of the main bars show the 95% confidence interval for the estimate.) The typical annual sample is 1,000 people. So if a country had surveys in each year, then the sample size would be 3,000 people. However, there are many countries that have not had annual surveys, and there were a few 2015 surveys still missing from our final analysis using data available before the end of January, 2016. If a country was not surveyed in any year between 2013 and 2015, we use their 2012 surveys if available; there are only 4 such countries out of a total of 157. In no case do we go further back than 2012. Tables 1-3 of the online statistical appendix show the sample size for each country in each year.

Is this sample size really big enough to calculate rankings?

A sample size of 2,000 to 3,000 is large enough to give a fairly good estimate at the national level. This is confirmed by the 95% confidence intervals shown at the right-hand end of each country bar.

What is the confidence interval?

The confidence intervals, as shown by the horizontal lines at the right-hand end of the country bars, show the range of values within which there is a 95% likelihood of the population mean being located. These are useful to readers wishing to see whether countries differ significantly in the average life evaluations.

Where do the sub-bars come from for each of the six explanatory factors?

The sub-bars show, tentatively, what share of a country's overall score can be explained by each of the six factors in Table 2.1. The sub-bars are calculated by multiplying average national data for the period 2013-2015 for each of the six factors (minus the value of that variable in Dystopia) by the coefficient on this variable in the first equation of Table 2.1. This product then shows the average amount by which the overall happiness score (the life evaluation) is higher in a country because they perform better than Dystopia on that variable.

To describe an example, let's look at the variable of life expectancy in the case of Brazil. First we calculate the number of years by which healthy life expectancy in Brazil exceeds that in the country with the lowest life expectancy. Then we multiply this number of years by the estimated Table 2.1 coefficient for life expectancy. This product then shows the average amount by which the overall happiness score (the life evaluation) is higher in Brazil because life expectancy is higher there than it is in the country with the lowest life expectancy. This process is repeated for each country and each of the six variables.

Because of the way they were constructed, these six bars will in total always be less than each country's average life evaluation. They also will not alter in any way the width of the overall life evaluation bar on which the rankings are based. The difference between what is attributed to the six factors and the total life evaluations is the sum of two parts. These are the average life evaluations in Dystopia, and each

country's residual. You may find the following FAQs useful: What is Dystopia? What are the residuals?

What is Dystopia?

Dystopia is an imaginary country that has the world's least-happy people. The purpose in establishing Dystopia is to have a benchmark against which all countries can be favorably compared (no country performs more poorly than Dystopia) in terms of each of the six key variables, thus allowing each sub-bar to be of positive width. The lowest scores observed for the six key variables, therefore, characterize Dystopia. Since life would be very unpleasant in a country with the world's lowest incomes, lowest life expectancy, lowest generosity, most corruption, least freedom and least social support, it is referred to as "Dystopia," in contrast to Utopia.

What are the residuals?

The residuals, or unexplained components, differ for each country, reflecting the extent to which the six variables either over- or under-explain average 2013-2015 life evaluations. These residuals have an average value of approximately zero over the whole set of countries. Figure 2.2 shows the average residual for each country when the equation in Table 2.1 is applied to average 2013-2015 data for the six variables in that country. We combine these residuals with the estimate for life evaluations in Dystopia so that the combined bar will always have positive values. As can be seen in Figure 2.2, although some life evaluation residuals are quite large, occasionally exceeding one point on the scale from 0 to 10, they are always much smaller than the calculated value in Dystopia, where the average life is rated at 2.33 on the 0 to 10 scale.

Why do we use these six factors to explain life evaluations?

The variables used reflect what has been broadly found in the research literature to be important in explaining national-level differences in life evaluations. Some important variables, such as unemployment or inequality, do not appear because comparable international data are not yet available for the full sample of countries. The variables are intended to illustrate important lines of correlation rather than to reflect clean causal estimates, since some of the data are drawn from the same survey sources, some are correlated with each other (or with other important factors for which we do not have measures), and in several instances there are likely to be two-way relations between life evaluations and the chosen variables (for example, healthy people are

overall happier, but as Chapter 4 in the *World Happiness Report 2013* demonstrated, happier people are overall healthier).

What is a data “wave”?

Gallup refers to the surveys in each calendar year as being part of that year’s survey wave. Not every country is surveyed every year, and thus the size of the survey waves also varies from year to year.

Can I download any of the data used in the Report?

The online data appendices show how the data are constructed, and include the main national and regional averages underlying the figures and tables in Chapter 2. Those wishing access to more detailed data from the Gallup World Poll should contact Gallup directly: