Ranking Accuracy of Perception

The ranking for each country was calculated as follows.

For each item that were measured as a percentage (a number out of 100): an accuracy score for each country was calculated as the difference between the mean of the survey estimate and the actual value. The accuracy score was then 'standardised' (adjusted) to acknowledge that a difference for a small (or large) prevalence should be treated differently to the same-sized difference around a prevalence nearer 50%: for example, a difference between 5% and 10% would be considered to be of lower accuracy compared with a difference between 45% and 50%. This standardisation was done by calculating the equivalent accuracy score around an estimate of 50% for each country. For example, for an accuracy score of 5% between 5% and 10%, the equivalent standardised accuracy score around an estimate of 50% was calculated to be 9.5% (i.e. the difference between 45.25% and 54.75%). The countries were then ranked based on the standardised accuracy score.

For the measure of average life expectancy, the countries were ranked on the raw accuracy score – no standardisation was carried out. This is because average life expectancy is a discrete measure rather than a percentage.

Each country was ranked for each item as described above: 1 for the most accurate through to 28 for the least accurate perception. The individual ranks for the items were then added to together for each country. This sum of the ranks was then used to rank the countries over all the measures: the country with the lowest sum of the ranks having the most accurate perception overall and hence being ranked 1.

The Standardisation Approach

Mean survey measure = P_s
Actual measure = P_a

Accuracy score = $| P_s - P_a |$

Mid-point of measures = $P_m = (P_s + P_a) / 2$
Spread around mid-point of measures (sd_m) = $\sqrt{P_m \times (100 - P_m)}$
Spread around 50% ($sd_{50\%}$) = $\sqrt{50 \times (100 - 50)} = 50$

Standardised accuracy score = $| P_s - P_a | \times (sd_{50\%} / sd_m) = | P_s - P_a | \times (50 / sd_m)$