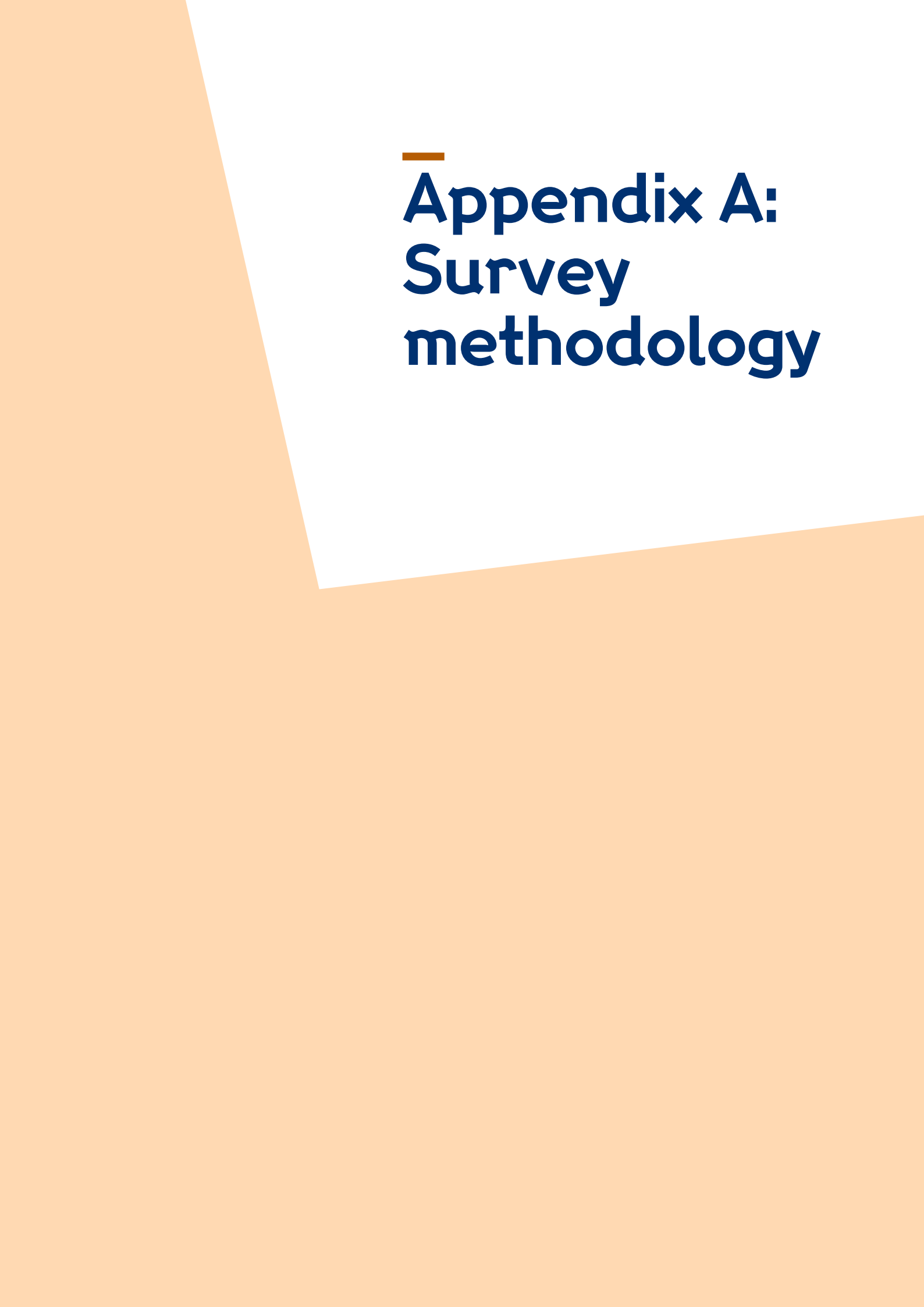# Wellcome Global Monitor: Methodology & Data Analysis

The 2020 Wellcome Global Monitor is the second wave of the world's largest survey into how people worldwide think and feel about science and major health challenges, with a particular focus on understanding perceptions and experiences of mental health issues.

This report provides key methodological details related to the 2020 survey wave and further information about the data analysis presented in this report.

2020

GALLUP

Appendix A: Survey methodology

Appendix A: Survey methodology

The 2020 Wellcome Global Monitor was included as a module within the Gallup World Poll. Since 2005, the World Poll has regularly surveyed people in over 160 countries using mixed methods of telephone and face-to-face interviewing, depending on the country. In a typical year, the poll results represent more than 95% of the world's population aged 15+ by using randomly selected, nationally representative samples.

However, 2020 was far from a typical year. The unprecedented challenges presented by the coronavirus pandemic forced Gallup to pause its global data collection in March 2020 to thoroughly assess risks of continuing work and to prepare contingency plans for the data collection. By May, the continued prevalence of COVID-19 made it clear that there was too much risk of community transmission to conduct face-to-face data collection in 2020. Nonetheless, Gallup recognised the importance of finding a way to collect representative,

high-quality data during this critical period in world history and prepared a contingency methodology based entirely on telephone interviewing (also referred to as computer-assisted telephone interviewing in this document, or CATI). This new methodological approach, detailed below, was driven by several key considerations, including the safety of Gallup World Poll interviewers and respondents and retaining high levels of representativity. Ultimately, the 2020 Gallup World Poll/Wellcome Global Monitor was conducted in 113 countries – representing more than 90% of the global population aged 15+.

As a standard practice, Gallup and its partners complied with all government-issued guidance from local authorities and took this guidance into account throughout the interviewing process, including following social distancing measures when telephone interviews were conducted in a call centre (however, most CATI data collection was done remotely).

Questionnaire development

The 2018 Wellcome Global Monitor was developed using a careful research and design process, which identified the most salient topics related to attitudes towards science or health that could be meaningfully included in a survey fielded throughout the world.

When drafting the 2020 questionnaire, Wellcome identified a key focus area as measuring perceptions and experiences of mental health. Other new topics of interest included views about climate change, whether national leaders value the opinions of

scientists when making public-policy-related decisions, and questions about COVID-19. Wellcome and Gallup also reviewed the 2018 question items to identify which topics should appear again in the 2020 wave, whether by using identical phrasing to that in the 2018 survey or by slightly modifying the wording. Table 1 highlights the topic coverage in the 2018 and 2020 waves of the Wellcome Global Monitor. In total, about one-third of the 2020 questionnaire consisted of repeat items; the remainder comprised new items.

Table 1: Topics covered in Waves I and Wave II of the Wellcome Global Monitor
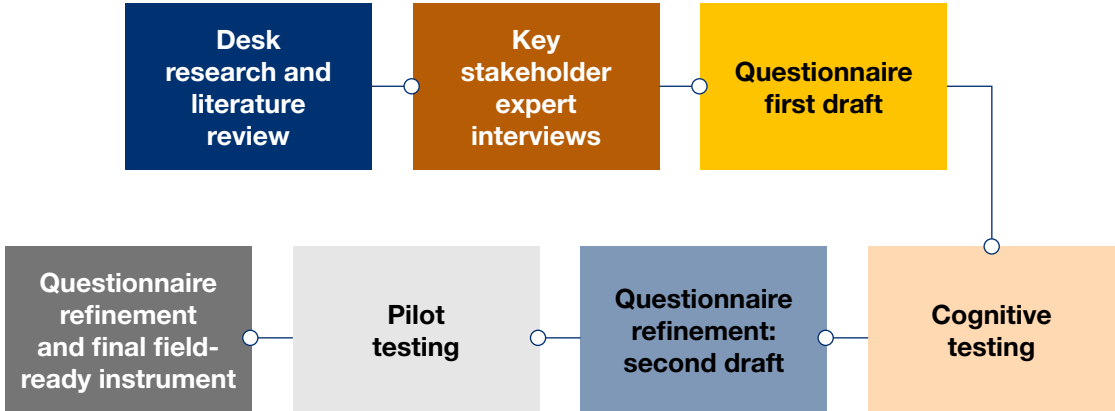
Wellcome Global Monitor Repeating Items/Topics	
Trust in science and health professionals	Religion and science
Trust in neighbours	Jobs and science
Trust in major institutions	Perceived knowledge of science
Inclusion of benefits of science	Confidence in hospitals

Wellcome Global Monitor Wave I (2018) Focus Areas	Wellcome Global Monitor Wave II (2020) Focus Areas
Trust in sources of information about health or medicine	Mental health (anxiety or depression*)
Attitudes about vaccines	- Global perceptions of the importance of mental health for overall wellbeing
Recently sought information about health/science	- Global perceptions of the role of science in finding solutions to anxiety or depression
Interest in learning more about science and health	- How people around the world who have experienced anxiety or depression manage these problems
	Use of social media and seeking health-related information' on social media
	National leaders valuing science/scientists' opinions
	Climate change
	COVID-19

* Defined in the survey as 'anxiety or depression', meaning a person being so anxious or so depressed that they could not continue with their regular daily activities as they normally would for two weeks or longer.

The questionnaire development process also included 1) cognitive testing in eight countries to ensure the questions could be understood across countries and by various demographic groups within any given country; and 2) pilot tests in 10 countries. Graphic 1 presents an overview of this process.

Graphic 1: Systematic development and testing of 2020 Wellcome Global Monitor

Desk research and literature review	Key stakeholder expert interviews	Questionnaire first draft

Questionnaire refinement and final field-ready instrument	Pilot testing	Questionnaire refinement: second draft	Cognitive testing

When designing the questionnaire, Gallup and Wellcome were aware that some of the topics explored in the survey – notably those related to attitudes towards and experiences of mental health – could be a source of discomfort for some respondents. Therefore, Gallup's Institutional Review Board (IRB) reviewed all question items before the testing and fielding of the survey.

Questions were designed to be easily understood in local languages, so expressions that are difficult to translate were avoided. Where possible, response options were kept to a simple binary format such as 'yes/no' to lighten the cognitive burden on respondents and limit the cultural influences on response styles associated with more answer options. For more information See the Wellcome Global Monitor – Questionnaire Development Information for Mental Health Report.

Questionnaire translation

The questionnaire was translated into the major conversational languages of each country and area (autonomous or semi-autonomous regions or territories that are not recognised as sovereign states).

The 2020 Wellcome Global Monitor was originally developed in English. From this starting point, Gallup translators produced several master-language questionnaires in French, Spanish, Portuguese, Russian and Arabic (using one of the two translation methods described below, as deemed appropriate by the Gallup World Poll Regional Directors). Then, local-language translations were produced from the master-language version. For example, the Russian master-language questionnaire was created first (translation from English to Russian) and was then translated from Russian into other languages such as Ukrainian, Kyrgyz and Uzbek.

As a key component of quality assurance, one of the following two methods was used in each country as an independent check of every questionnaire translation:

Method 1

Two independent translations are completed. An independent third party with some knowledge of survey research methods adjudicates the differences. A professional translator translates the final version back into the source language.

Method 2

A translator translates a questionnaire into the target language, and an independent translator back-translates it into the source language. An independent third party with knowledge of survey methods reviews and revises the translation as necessary.

Professional translators – who are experienced in translating survey questionnaires and who have typically worked for years with Gallup's local data collection network (local translators) – were selected. All translators received the same set of notes and guidance regarding the meaning of specific items. Interviewers were instructed to follow the interview script and not to deviate from the translated language.

Measuring experiences and opinions related to anxiety and depression in the Wellcome Global Monitor

Mental health constituted a major new focus of the 2020 Wellcome Global Monitor. In particular, the survey focused on the two most common types of mental disorders – anxiety and depression[1]. The World Health Organization provides the following definitions for these conditions:

Depressive disorders are characterised by sadness, reduced energy and decreased activity. Capacity for enjoyment, interest and concentration are reduced, and marked tiredness after even minimum effort is common. Self-esteem and self-confidence are almost always reduced and, even in a mild form, some ideas of guilt or worthlessness are often present[2,3].

Anxiety disorders are characterised by feelings of anxiety and fear. This group of disorders includes generalised anxiety disorder (GAD), panic disorder, phobias, social anxiety disorder, obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD).

Technical measures of anxiety and depression typically involve structured clinical interviews and multiple-item scales – methods that were beyond the scope of the Wellcome Global Monitor. Crucially, the research objective of the 2020 Wellcome Global Monitor was not to provide a precise epidemiological estimation of the prevalence of anxiety and depression around the world but to establish a broader understanding of attitudes and experiences towards these mental health issues.

In light of these goals, previous research suggested that single-item measures such as those used by Turon et al.[4] or Vilagut et al.[5] may be acceptable ways of measuring experience of mental health problems like anxiety or depression.

Subject matter experts from Wellcome advised on how to formulate the questions, with the initial draft items focusing on attitudes and experiences related to 'extreme anxiety', 'stress' and 'depression'. These questions were tested in the cognitive interview stage of the survey development process. During these interviews (which were conducted in 10 countries and in the following languages: Spanish, Arabic, French, Bengali, Hindi, Bahasa, Swahili, Yoruba, Isizulu, Thai, Vietnamese and English), respondents were asked to provide their own definition of these terms to provide researchers with a sense of how well understood these terms were.

The cognitive interviews found that there was a broad understanding of these concepts. The topic of 'stress' was removed due to its lower research value. The revised questionnaire was pre-tested – a process that served as a small-scale version of the final full-scale survey – in 10 countries and 14 languages. This testing identified no further issues with the question items about personal experiences of and attitudes towards anxiety and depression.

As with the rest of the Wellcome Global Monitor, the mental health sub-module was translated into the major conversational language of every country and area where the final survey was fielded (discussed above). Gallup usually use identical translations in countries in which citizens can speak one language; however, local-language customisations are used when appropriate. Additionally, regional differences are common, so, for example, the French used in Canada, France and Africa is reflected in the French used in the translation and has the relevant variations applied to it.

Interviewer training and quality control

As a standard practice, Gallup and its data collection partners were mindful of complying with all government-issued guidance from local authorities and took this guidance into account throughout the interviewing process, including following social distancing measures for when telephone interviews were conducted from a call centre.

Gallup selects and retains in-country partners based on their experience in nationwide survey research studies in the mode that is typically appropriate for that particular country, and Gallup continued to use data collection partners when fielding the 2020 Wellcome Global Monitor. Given the number of countries involved, however, in some instances where the mode of data collection switched from face-to-face to telephone interviewing (82 countries in the Wellcome Global Monitor), Gallup had to replace or augment the in-country partner that had managed data collection for the World Poll in prior years. Gallup conducted all training remotely using available technologies such as e-learning and video conferencing. The changes were largely necessary to address the lack of telephone data collection experience, technical and infrastructural limitations and compressed timelines.

Gallup provided a standardised training manual to assist the fieldwork team with training and ensure consistency and structure. Topics covered in training included:

1. **Standards for conducting a good-quality interview**
   - how to ask closed-ended questions
   - how to ask open-ended questions
   - rotation of survey questions or response options
   - how to follow or implement skip patterns
   - probing

2. **Respondent selection and disposition coding (i.e., recording the results of each contact)**
   - within-household selection for those reached on a landline or mobile telephone in countries where telephone coverage is low
   - coding practices for each telephone attempt
   - sample release and management

3. **Recruitment and retention of interviewers and field quality control**
   - characteristics of a successful interviewer/ motivation for retention
   - requirements for setting up remote data collection
   - monitoring sample performance and interviewer productivity

Sampling and data collection methodology

All samples were probability based – meaning respondents were selected randomly – and nationally representative of the population aged 15+. Telephone coverage was measured across an entire country, including rural areas, and all eligible landline exchanges and valid mobile service providers were included. The sampling frame represents adults aged 15 and older with access to a phone (either landline or mobile). Gallup used random-digit-dialling (RDD) or a nationally representative list of phone numbers.

How the sample generation and selection process works

Due to the immense challenges presented by the coronavirus pandemic, interviewing for the 2020 Wellcome Global Monitor was conducted solely by telephone. In some countries, Gallup and its data collection partners contacted respondents on landline or mobile telephones; in a small but growing number of countries, respondents were contacted by mobile phone only.

Regardless of the approach, how were potential survey participants identified and contacted? This process is known, in technical terms, as sample generation and selection. The general idea is straightforward: first, Gallup and its data collection partners had to establish a list of all potential participants (known as the sampling frame) and then use random-based methods to contact individuals from within that frame. In 2020, this process worked as follows:

1. In any given country, the first step was to construct the landline and/or mobile frames using either True RDD or List-Assisted RDD (explained below).

2. Second, telephone numbers were picked randomly. This was done by drawing a seed (typically an exchange) using a simple random sample and then a random number (4-6 digits long) was appended to create a random telephone number.

   a. Generally, the mobile frame is constructed using pure RDD, where all exchanges assigned (based on information from the telecom authority) by mobile service providers are used to generate the frame of all possible mobile numbers. The exchanges are used as seeds and a random number of the appropriate length (depending on the country, this could be from 4 to 6 digits) is added to the seed to generate a random telephone number. As mobile exchanges are assigned to service providers, the frame is stratified explicitly by the mobile service provider. Within each stratum, a fixed sample of telephone numbers (sample size is determined by the market share of the service provider, the expected working rate and the response rate) is selected using a simple random sample. In countries where Gallup has information on differential response or working rates of each service provider, that information is taken into account when determining the sample size to draw from each service provider.

   b. The landline frame, which is constructed using True RDD, is built similarly to the mobile frame using exchanges that are assigned to each geographical area/region (instead of to a service provider) based on information provided by the telecom authority. The exchanges are used as seeds and generate all possible numbers first, then select a fixed sample size (using a simple random sample within each stratum), which is estimated based on the population size in each region and the estimated working/response rate. The difference between the True RDD approach to constructing the frame and the List-Assisted RDD approach is how the initial seeds are generated. In the List-Assisted approach, the frame is constructed by accessing various publicly available list sources that provide a comprehensive list of valid exchanges. The more sources that are accessed, the more comprehensive the frame. Unique exchanges identified from these sources form the seed for the random number generation process. Due to the nature of the frame generation process, List-Assisted RDD has a higher working rate because exchanges in the frame come from public list sources and therefore tend to be more active.

The overarching changes to how Gallup collected the 2020 Gallup World Poll/Wellcome Global Monitor data had different methodological implications for each country, depending on how Gallup has historically conducted its interviewing in that country. In traditional telephone countries, Gallup made only limited changes to its sampling/data collection process (described below), whereas major methodological were required for new telephone countries (i.e., those nations where Gallup has, until 2020, relied on face-to-face interviewing) required major methodological changes.

Traditional telephone countries

Gallup typically uses dual-frame (landline and mobile telephone) computer-assisted telephone interviewing (CATI) as the mode of data collection in Northern America, Western Europe, wealthy Asian countries and Pacific countries or territories including Japan, Australia, New Zealand and Taiwan, and Gulf Cooperation Council (GCC) countries. The sampling frame is mobile telephone only in a growing number of countries (e.g., Libya, Finland and UAE) because of their limited landline usage. The split between the expected landline and mobile use in a dual-frame design is based on the information Gallup has on landline and mobile use in those countries from past surveys and other secondary data, as well as on the demographic distribution of the final landline/mobile sample in relation to the target populations. There were no other changes to the design, stratification or execution of the telephone list samples for traditional telephone countries in 2020.

In traditional telephone countries and areas, respondent selection followed the same procedure as in previous years:

- For respondents contacted by landline, random respondent selection was performed within the household (among eligible respondents aged 15 and older), either by asking for someone in the household who is aged 15 or older and whose birthday is the soonest or by randomly selecting a respondent from a list of all eligible household members (as provided by the person Gallup originally contacted).

- For respondents contacted by mobile telephone, no further selection was performed (other than confirming the respondent was at least 15 years of age).

Thirty-one of the 113 countries and areas included in the 2020 Wellcome Global Monitor were traditional telephone countries – meaning the mode of interviewing did not change in 2020 compared to the last year Gallup interviewed there. In these countries, the coverage error (the percentage of the target population not accessible for sampling) remains negligible, according to Gallup estimates* – typically, no more than 1% of the population aged 15+.

New telephone countries

In countries and areas where interviews were conducted by telephone for the first time (i.e., countries in which interviews had previously been conducted face to face in Central and Eastern Europe, Latin America, former Soviet states, developing Asia, the Middle East and Africa), Gallup used one of the following two methods:

- dual-frame (landline and mobile telephone) RDD where landline presence and use were 20% or higher based on historical Gallup estimates

- mobile telephone RDD in countries with limited-to-no landline presence (<20%)

To ensure greater transparency and greater control over the sampling process, RDD samples for all the new telephone countries, except Israel and Uzbekistan, were purchased from Sample Solutions Europe. Stratification of the landline frame was done by geography and, where information about the market share of mobile service providers was known, the mobile frame was explicitly stratified by service providers and the sample drawn was proportional to the market share.

In new telephone countries with combined landline/mobile telephone coverage of 80% or higher, the same respondent selection procedures were applied:

- For respondents contacted by landline telephone, random respondent selection was performed within the household (among eligible respondents aged 15 and older), either by asking for the person aged 15 or older whose birthday was the soonest or by randomly selecting a respondent from a list of all eligible household members.

- For respondents contacted by mobile telephone, no further selection was performed (other than confirming respondent was at least 15 years of age).

In new telephone countries with low combined landline/mobile telephone coverage (below 80%), random respondent selection within the household (among eligible household members aged 15 and older) was performed, regardless of whether the respondent was contacted by landline or mobile telephone. The decision to include both modes (landline and mobile) in random respondent selection, rather than landline only, was made to increase coverage and the representation of individuals in these countries who are less likely to own a mobile phone themselves but have access to such a device through someone else in their household.

The majority of countries included in the 2020 Wellcome Global Monitor were new telephone countries. According to Gallup estimates, the coverage expected is 90% or greater for most countries*. In some nations, such as Russia or China, the coverage is estimated to be closer to 95%.

This under-coverage – though unavoidable, given the scope of the public health challenges in 2020 – may have implications for the underlying sample composition in some countries (i.e., the overall demographic profile of all respondents interviewed in a nation). In many non-traditional telephone countries, samples were skewed towards specific demographic characteristics, often – though not always – towards more educated, younger individuals. To help adjust for these imbalances, Gallup (where it considered necessary) relied on an expanded set of demographic factors when calculating post-stratification weights (further discussed in 'Data weighting', below).

*Gallup estimates that coverage may be less than 80% in a limited number of countries, including Ethiopia, Zambia and Venezuela. Gallup estimates of coverage error primarily come from 2019 World Poll data collected in countries in which interviews were previously conducted face to face. Gallup estimated what percentage of the population aged 15+ had access to a landline or mobile phone. In several countries, Gallup enhanced those estimates with additional information from recently conducted large-scale, face-to-face surveys such as those done via the Demographic and Health Surveys (DHS) Program and, in some cases, more recent estimates provided by the United Nationals telecommunication development sector (ITU-D).

Scripting and testing

Local data collection partners continue to design the surveys in traditional telephone countries, and Gallup continues to test them for accuracy prior to launch.

To ensure consistency in survey designing, Gallup used one of two methods in each new telephone country. Using their own CATI data collection platform, local data collection partners prepared their own script and provided Gallup with links to test the program's logic and to generate synthetic data that was used to confirm that the questionnaire had been programmed correctly. For the remaining countries, Gallup scripted all the country surveys on a single platform (SurveyToGo) and tested them before making them available to local data collection partners.

Response rates

As is the case with Gallup World Poll surveys more generally, the response rates for the Wellcome Global Monitor varied considerably across countries. In general, response rates are lower in countries where interviewing is conducted by telephone than those where it is done in person, though in many countries and territories where telephone interviewing is used, response rates are comparable to those of other polling firms[6].

The Gallup World Poll does not publish individual country response rates.

Data weighting

Data weighting is used to minimise bias in survey estimates and is intended to be used to generate nationally representative estimates within a country. The weighting procedure was formulated based on the sample design and performed in multiple stages.

Gallup constructed a probability weight factor (base weight) to account for the selection of telephone numbers from the respective frames and to correct for unequal selection probabilities that result from selecting one adult in landline households and for dual users coming from both the landline and the mobile frame. For instance, an individual in a five-person household will have a lower probability of selection than someone who lives alone, holding everything else equal. The data-weighting process seeks to address this type of imbalance. **Adjustment to selection probabilities reflecting the relative frame sizes was a new improvement to the weighting process in 2020 and was implemented in all telephone countries, regardless of whether the country was a traditional or non-traditional telephone country**.

Next, the base weights were post-stratified to adjust for non-responses (where selected respondents are never reached or refuse to participate) and to match the weighted sample totals to known target population totals obtained from country-level census data. Gallup made calibration adjustments for gender, age and, where reliable data were available, education. In many non-traditional telephone countries, weights were also adjusted according to an additional set of demographic factors, including employment status (whether employed by an employer, self-employed or not employed), urbanicity, region or some combination of these factors. In general, countries with lower coverage of the target population required a larger set of weighting variables than countries with a minimum level of coverage error.

Where necessary, Gallup implemented procedures to limit or reduce the number and size of extreme sampling weights. This process was done in both stages of the data-weighting process.

In any given country, the unweighted demographic profile (including but not limited to characteristics such as gender, age group, educational attainment level, employment status and region) was compared against reliable statistics (typically census data from the national government); Gallup also compared the final weighted sample to these statistics.

Finally, the approximate study design effect and margin of error were calculated (calculations are presented in Table 2). The design effect calculation reflects the influence of weighting on sampling variance compared to a simple random sample of the same size.

Sampling error/ Precision of estimates

When interpreting survey results, all sample surveys are subject to various types of potential errors. For example, errors may occur due to non-responses (where selected respondents are never reached or refuse to participate), interviewers' administrative errors (where a response can be mistyped or misinterpreted by an interviewer), or incomplete or inaccurate answers given by the respondent.

The sampling design employed in this study was used to produce unbiased estimates of the stated target population. An unbiased sample will have the same characteristics and behaviours as those of the total population from which it was drawn. In other words, if we have a properly drawn sample, we can make statements about the target population within a specific range of certainty. Sampling errors can be estimated and the level of them' can help interpret the final data results. The size of such sampling errors depends largely on the number of interviews and the complexity of the sampling design.

The margin of error (MOE), or the level of precision that it is possible to use when estimating the unknown population proportion 'P' can be derived by using the following formula*:

$$MOE = 1.96 * \sqrt{(P*(1-P)/n)}$$

where 'n' is the sample size (i.e., the number of completed surveys). Even under if the most conservative assumption (P = 0.5) is used, the MOE for a sample size of 1,000 will be $1.96 * \sqrt{(0.25/1000)}$ = 3.1 percentage points under the assumption used in simple random sampling.

Table 2 shows the size of the margin of error associated with the 95% confidence interval for various sample sizes under the assumption of simple random sampling. The sample sizes may be interpreted as indicating the approximate range (plus or minus the figure shown) around the point estimate within which the results of repeated sampling in the same time period could be expected to fall 95% of the time, assuming the same sampling procedures, interviewing process and questionnaire. For any given sample size, the estimated precision is lowest when P = 0.5 (or 50%). For example, the sample size needed to ensure a sampling error (or half-width of confidence interval) of 0.05 at 95% confidence interval level were used for each sample size is around 400 cases when P = 0.5 (or 50%). A sample size of 300 will produce a sampling error close to 0.057 at 95% level of significance when P = 0.5 (or 50%). When P = 0.4 (or 40%), a sample size of 300 will produce a sampling error of 0.056. Table 2 shows estimated precision levels for different values of P and sample sizes under the assumption of simple random sampling.

*This formula is calculated at the 95% confidence level, i.e., α=.05, resulting in $z_{\alpha/2}$ = 1.96.

Table 2: Margin of error associated with 95% confidence interval for percentages for entire sample or subgroups, in percentage points

Sample sizes near	For percentages near					
	5/95% +	10/90% +	20/80% +	30/70% +	40/60% +	50/50% +
400	2.1	2.9	3.9	4.5	4.8	4.9
500	1.9	2.6	3.5	4.0	4.3	4.4
600	1.7	2.4	3.2	3.7	3.9	4.0
800	1.5	2.1	2.8	3.2	3.4	3.5
1,000	1.4	1.9	2.5	2.8	3.0	3.1
1,500	1.1	1.5	2.0	2.3	2.5	2.5
2,000	.96	1.3	1.8	2.0	2.1	2.2
2,500	.85	1.2	1.6	1.8	2.0	2.0
3,000	.78	1.1	1.4	1.6	1.8	1.8
4,000	.68	.93	1.2	1.4	1.5	1.5
5,000	.60	.88	1.2	1.3	1.3	1.4

Although Table 2 reflects precision assuming simple random sampling applies (i.e., all respondents within a target population have an equal probability of being selected for the survey), World Poll surveys rely on more complex designs, even for telephone samples (which was the sole mode of data collection in 2020). In addition to design complexities, data are weighted to correct for unequal probabilities of household selection and post-stratification adjustments. This weighting process introduces a design effect that needs to be considered when computing the sampling error (or precision) of the estimates. The design effect is defined as the ratio of the complex, design-based sample variance to the sample variance obtained from a simple random sample of the same size. To calculate the precision of an estimate using the complex sampling design with a design effect, one must multiply the precision under the assumption of simple random sampling by the square root of the design effect associated with this estimate.

In other words, the precision of an estimate (p) of an unknown population proportion 'P' may be approximated as:

$$\text{Precision (p)} = \{\text{SQRT (Deff)}\} \times \text{SE(p)}$$

where 'Deff' is the design effect associated with the estimate (p)

$$\text{SE(p)} = \text{SQRT}\{p*(1-p)/(n-1)\}$$

n = the unweighted sample size

For the purposes of simplicity, an estimate of 'Deff_wt' is provided for each country, taking into consideration only the variability of weights*. A design effect of 1 means the effective sample size is the same as the nominal sample size, which is 1,000 for most countries on the Gallup World Poll. For proportions close to 50%, a design effect of 2 reduces the effective sample size by 50% or increases the margin of error by 41% compared to a simple random sample size of 1,000.

The design effect was defined formally by Kish (1965, Section 8.2, p. 258) as 'the ratio of the actual variance of a sample to the variance of a simple random sample of the same number of elements'. Based on Kish's approximate formula {design effect = (sample size)(sum of squared weights)/ (square of the sum of weights)}.

Country dataset details, 2020 Wellcome Global Monitor

Country Dataset Details

Gallup Worldwide Research Data Collected from 2020

a – The design effect calculation reflects the weights and does not incorporate the intraclass correlation coefficients. Design effect calculation: n*(sum of squared weights)/[(sum of weights)*(sum of weights)]

b – Margin of error is calculated around a proportion at the 95% confidence level. The maximum margin of error was calculated assuming a reported percentage of 50% and takes into account the design effect. Margin of error calculation: $\sqrt{(0.25/N)}*1.96*\sqrt{(DE)}$

c – Areas with a disproportionately high number of interviews in the sample

d – Reasons for these differences could include household sampling, respondent sampling in the household, errors in self-reports of actual attainment or dated population information

*Handheld data collection

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
Albania	Oct 19 – Nov 23, 2020	1,000	1.50	3.8	Mobile telephone	Albanian	
Algeria	Oct 30 – Nov 14, 2020	1,020	2.01	4.3	Landline and mobile telephone	Arabic	
Argentina	Nov 6, 2020 – Jan 17, 2021	1,001	2.18	4.6	Landline and mobile telephone	Spanish	
Australia	Nov 2 – Dec 15, 2020	1,001	2.05	4.4	Landline and mobile telephone	English	
Austria	Oct 19 – Nov 17, 2020	1,000	1.47	3.8	Landline and mobile telephone	German	
Bahrain	Oct 1 – Nov 4, 2020	1,005	1.83	5.2	Landline and mobile telephone	Arabic, English	Included only Bahrainis, Arab expatriates and non-Arabs who were able to complete the interview in Arabic or English.
Bangladesh	Nov 19 – Dec 12, 2020	1,011	2.24	4.6	Mobile telephone	Bengali	Individuals who did not live in a household and who did not have a mobile phone were excluded from the sampling frame. The exact percentage of the excluded populations is unknown but is smaller than 8.6%.
Belgium	Oct 20 – Nov 18, 2020	1,001	1.18	3.4	Landline and mobile telephone	Dutch, Flemish	
Benin	Nov 21 – Dec 9, 2020	1,007	2.20	4.6	Mobile telephone	Bariba, Fon, French	
Bolivia	Nov 1 – Nov 22, 2020	1,002	1.68	4.0	Mobile telephone	Spanish	
Bosnia and Herzegovina	Nov 15 – Dec 22, 2020	1,002	1.60	3.9	Landline and mobile telephone	Bosnian	

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
Brazil	Nov 3, 2020 – Jan 6, 2021	1,000	2.16	4.6	Landline and mobile telephone	Portuguese	
Bulgaria	Nov 24 – Dec 23, 2020	1,007	2.08	4.4	Landline and mobile telephone	Bulgarian	
Burkina Faso	Nov 12 – Dec 15, 2020	1,002	2.61	5.0	Mobile telephone	Dioula, French, Fulfulde, Moore	
Cambodia	Nov 21 – Dec 18, 2020	1,000	2.38	4.8	Mobile telephone	Khmer	
Cameroon	Oct 29 – Dec 9, 2020	1,006	2.75	5.1	Mobile telephone	French, English, Fulfulde	
Canada	Oct 13 – Nov 24, 2020	1,010	1.47	3.7	Landline and mobile telephone	English, French	Yukon, Northwest Territories and Nunavut were excluded from the sample.
Chile	Nov 9, 2020 – Jan 24, 2021	1,021	1.57	3.8	Landline and mobile telephone	Spanish	
China	Oct 28 – Dec 13, 2020	3,502	2.26	2.5	Mobile telephone	Chinese	Tibet was excluded from the sample. The excluded areas represent less than 1% of the population of China.
Colombia	Oct 15 – Dec 28, 2020	1,000	1.55	3.9	Landline and mobile telephone	Spanish	
Congo Brazzaville	Oct 29 – Dec 14, 2020	1,009	1.93	4.3	Mobile telephone	French, Kituba, Lingala	
Costa Rica	Nov 8, 2020 – Feb 18, 2021	1,001	1.61	3.9	Landline and mobile telephone	Spanish	
Croatia	Nov 25, 2020 – Jan 12, 2021	1,000	1.79	4.1	Landline and mobile telephone	Croatian	
Cyprus	Oct 7 – Dec 15, 2020	1,012	1.99	4.3	Landline and mobile telephone	Greek, English	
Czech Republic	Nov 17 – Dec 22, 2020	1,000	1.59	3.9	Landline and mobile telephone	Czech	
Denmark	Oct 14 – Nov 12, 2020	1,000	1.39	3.7	Mobile telephone	Danish	
Dominican Republic	Oct 29 – Nov 17, 2020	1,000	1.56	3.9	Landline and mobile telephone	Spanish	
Ecuador	Oct 14 – Dec 29, 2020	1,000	1.69	4.0	Landline and mobile telephone	Spanish	
Egypt	Nov 21 – Dec 6, 2020	1,004	2.53	4.9	Landline and mobile telephone	Arabic	
El Salvador	Nov 18 – Dec 28, 2020	1,000	1.97	4.4	Mobile telephone	Spanish	
Estonia	Nov 24 – Dec 15, 2020	1,013	1.50	3.8	Mobile telephone	Estonian, Russian	
Ethiopia	Nov 4 – Dec 7, 2020	1,003	2.57	5.0	Mobile telephone	Amharic, English, Oromo	
Finland	Sep 1 – Oct 21, 2020	1,000	1.59	3.9	Mobile telephone	Finnish, Swedish	
France	Oct 19 – Nov 14, 2020	1,000	1.52	3.8	Landline and mobile telephone	French	
Gabon	Dec 2 – Dec 26, 2020	1,005	2.60	5.0	Mobile telephone	French, Fang	

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
Georgia	Nov 5 – Dec 22, 2020	1,000	1.86	4.2	Landline and mobile telephone	Georgian, Russian	
Germany	Oct 19 – Nov 14, 2020	1,000	2.21	4.6	Landline and mobile telephone	German	
Ghana	Nov 18 – Dec 21, 2020	1,000	1.96	4.3	Mobile telephone	English, Ewe, Twi, Hausa	
Greece	Nov 2 – Nov 26, 2020	1,006	2.17	4.5	Landline and mobile telephone	Greek	
Guinea	Nov 26 – Dec 16, 2020	1,009	3.01	5.4	Mobile telephone	French, Malinke, Pular, Soussou	
Hong Kong	Nov 10 – Dec 20, 2020	1,004	1.27	3.5	Landline and mobile telephone	Chinese	
Hungary	Nov 10 – Dec 11, 2020	1,000	2.03	4.4	Landline and mobile telephone	Hungarian	
India	Nov 24, 2020 – Jan 8, 2021	3,045	2.82	3.0	Mobile telephone	Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Tamil, Telugu, Odia, Punjabi, Assamese	Excluded the population living in the Northeast states and remote islands. The excluded areas represent less than 1% of the population.
Indonesia	Nov 16 – Dec 31, 2020	1,023	1.67	4.0	Mobile telephone	Bahasa, Indonesian	
Iran	Nov 2 – Nov 8, 2020	1,007	1.44	3.7	Landline and mobile telephone	Farsi	
Iraq	Dec 4, 2020 – Jan 2, 2021	1,009	1.47	3.7	Mobile telephone	Arabic, Kurdish	
Ireland	Oct 19 – Nov 13, 2020	1,000	1.44	3.7	Landline and mobile telephone	English	
Israel	Nov 11 – Dec 1, 2020	1,063	1.32	3.5	Landline and mobile telephone	Hebrew, Russian, Arabic	
Italy	Oct 19 – Nov 11, 2020	1,000	2.72	5.1	Landline and mobile telephone	Italian	
Ivory Coast	Nov 12 – Dec 4, 2020	1,005	2.38	4.8	Mobile telephone	French, Dioula	
Japan	Oct 2 – Dec 3, 2020	1,012	1.25	3.4	Landline and mobile telephone	Japanese	For landline RDD, 12 municipalities near the nuclear power plant in Fukushima were excluded. These areas were designated as not-to-call districts due to the devastation caused by the 2011 disasters. The exclusion represents less than 1% of the population of Japan.
Jordan	Dec 21 – Dec 31, 2020	1,005	1.54	3.8	Mobile telephone	Arabic	
Kazakhstan	Nov 26, 2020 – Jan 6, 2021	1,000	1.55	3.9	Mobile telephone	Russian, Kazakh	
Kenya	Oct 29 – Nov 26, 2020	1,002	1.93	4.3	Mobile telephone	English, Swahili/ Kiswahili	
Kosovo	Nov 13 – Dec 15, 2020	1,004	1.87	4.2	Mobile telephone	Albanian, Serbian	
Kyrgyzstan	Nov 26 – Dec 10, 2020	1,000	1.47	3.8	Mobile telephone	Kyrgyz, Russian	
Laos	Nov 18 – Dec 1, 2020	1,000	2.71	5.1	Mobile telephone	Lao	

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
Latvia	Oct 27 – Dec 16, 2020	1,005	1.56	3.9	Mobile telephone	Latvian, Russian	
Lebanon	Dec 11 – Dec 30, 2020	1,035	1.23	3.4	Landline and mobile telephone	Arabic	
Lithuania	Dec 3, 2020 – Jan 21, 2021	1,001	2.00	4.4	Mobile telephone	Lithuanian	
Malaysia	Dec 18, 2020 – Feb 18, 2021	1,004	2.26	4.6	Mobile telephone	Bahasa, Malay, Chinese, English	
Mali	Oct 28 – Nov 15, 2020	1,002	2.16	4.5	Mobile telephone	French, Bambara	
Malta	Sep 6 – Oct 30, 2020	1,002	1.32	3.6	Landline and mobile telephone	Maltese, English	
Mauritius	Oct 20 – Dec 5, 2020	1,000	1.82	4.2	Landline and mobile telephone	Creole, English, French	
Mexico	Nov 17, 2020 – Jan 15, 2021	1,000	1.95	4.3	Landline and mobile telephone	Spanish	
Moldova	Nov 26 – Dec 20, 2020	1,005	1.62	3.9	Mobile telephone	Romanian/ Moldavan, Russian	
Mongolia	Dec 3 – Dec 20, 2020	1,000	1.65	4.0	Mobile telephone	Mongolian	
Montenegro	Nov 22 – Dec 31, 2020	1,027	1.71	4.0	Landline and mobile telephone	Montenegrin	
Morocco	Nov 12 – Dec 3, 2020	1,012	1.44	3.7	Landline and mobile telephone	Moroccan Arabic	
Myanmar	Dec 9 – Dec 25, 2020	1,000	2.05	4.4	Mobile telephone	Myanmar, Burmese	
Namibia	Dec 15 – Dec 28, 2020	1,007	1.89	4.2	Mobile telephone	English, Oshivambo, Afrikaans	
Nepal	Dec 13, 2020 – Jan 6, 2021	1,000	2.47	4.9	Mobile telephone	Nepali	
Netherlands	Sep 10 – Dec 14, 2020	1,000	1.96	4.3	Landline and mobile telephone	Dutch	
New Zealand	Oct 19 – Dec 6, 2020	1,000	1.69	4.0	Landline and mobile telephone	English	
Nicaragua	Sep 24 – Dec 1, 2020	1,000	1.97	4.3	Mobile telephone	Spanish	
Nigeria	Oct 30 – Nov 18, 2020	1,002	2.31	4.7	Mobile telephone	English, Hausa, Igbo, Pidgin English, Yoruba	
North Macedonia	Oct 19 – Nov 26, 2020	1,019	1.40	3.6	Landline and mobile telephone	Macedonian	
Norway	Aug 28 – Oct 10, 2020	1,000	1.60	3.9	Landline and mobile telephone	Norwegian	
Paraguay	Sep 22 – Dec 9, 2020	1,000	1.71	4.1	Landline and mobile telephone	Spanish	
Peru	Sep 11 – Oct 30, 2020	1,001	1.68	4.0	Landline and mobile telephone	Spanish	
Philippines	Oct 19 – Dec 2, 2020	1,000	1.80	4.2	Landline and mobile telephone	Filipino, Iluko, Cebuano, Waray, Bicol	

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
Poland	Nov 9 – Dec 7, 2020	1,002	1.75	4.1	Landline and mobile telephone	Polish	
Portugal	Sep 14 – Oct 21, 2020	1,004	1.81	4.2	Landline and mobile telephone	Portuguese	
Romania	Nov 2 – Dec 17, 2020	1,006	1.60	3.9	Landline and mobile telephone	Romanian	
Russia	Oct 15, – Dec 2, 2020	2,002	1.56	2.7	Landline and mobile telephone	Russian	
Saudi Arabia	Sep 30 – Oct 17, 2020	1,013	1.79	5.0	Landline and mobile telephone	Arabic, English, Hindi, Urdu	Included Saudis, Arab expatriates and non-Arabs who were able to complete the interview in Arabic, English, Urdu or Hindi.
Senegal	Oct 25 – Nov 22, 2020	1,025	1.62	3.9	Mobile telephone	French, Wolof	
Serbia	Nov 4 – Dec 1, 2020	1,000	1.65	4.0	Landline and mobile telephone	Serbian	
Slovakia	Nov 2 – Dec 11, 2020	1,004	1.50	3.8	Landline and mobile telephone	Hungarian, Slovak	
Slovenia	Sep 24 – Nov 9, 2020	1,001	1.90	4.3	Landline and mobile telephone	Slovene	
South Africa	Nov 19 – Dec 13, 2020	1,004	1.93	4.3	Mobile telephone	Afrikaans, English, Sotho, Xhosa, Zulu	
South Korea	Nov 28 – Dec 29, 2020	1,009	1.49	3.8	Landline and mobile telephone	Korean	
Spain	Oct 19 – Nov 12, 2020	1,000	1.60	3.9	Landline and mobile telephone	Spanish	
Sri Lanka	Nov 17, 2020 – Jan 2, 2021	1,011	1.88	4.2	Mobile telephone	Sinhala, Tamil	
Sweden	Sep 8 – Oct 21, 2020	1,000	1.66	4.0	Landline and mobile telephone	Swedish	
Switzerland	Oct 19 – Nov 17, 2020	1,000	1.68	4.0	Landline and mobile telephone	French, German, Italian	
Taiwan	Sep 23 – Oct 19, 2020	1,000	1.74	4.1	Landline and mobile telephone	Chinese	
Tajikistan	Dec 2 – Dec 20, 2020	1,000	1.95	4.3	Mobile telephone	Tajik	
Tanzania	Nov 8 – Nov 22, 2020	1,000	2.44	4.8	Mobile telephone	Swahili, Kiswahili	
Thailand	Dec 8, 2020 – Jan 14, 2021	1,000	2.40	4.8	Mobile telephone	Thai	
Tunisia	Oct 12 – Nov 4, 2020	1,006	1.98	4.3	Landline and mobile telephone	Arabic	
Turkey	Nov 24 – Dec 3, 2020	1,000	2.07	4.5	Landline and mobile telephone	Turkish	
Uganda	Nov 16 – Nov 25, 2020	1,027	2.50	4.8	Mobile telephone	Ateso, English, Luganda, Runyankole	
Ukraine	Oct 28 – Nov 16, 2020	1,000	1.80	4.2	Landline and mobile telephone	Russian, Ukrainian	

Country	Data collection dates	Number of interviews	Design effect[a]	Margin of error[b]	Mode of interviewing	Languages	Geographic Exclusions
United Arab Emirates	Oct 13 – Nov 5, 2020	1,002	1.29	3.5	Mobile telephone	Arabic, English, Hindi, Urdu	Included only Emiratis, Arab expatriates and non-Arabs who were able to complete the interview in Arabic, English, Hindi or Urdu.
United Kingdom	Oct 19 – Nov 16, 2020	1,000	1.61	3.9	Landline and mobile telephone	English	
United States	Aug 4 – Oct 9, 2020	1,001	1.86	4.2	Landline and mobile telephone	English, Spanish	
Uruguay	Nov 20, 2020 – Jan 9, 2021	1,003	1.37	3.6	Landline and mobile telephone	Spanish	
Uzbekistan	Nov 20 – Dec 12, 2020	1,000	1.86	4.2	Landline and mobile telephone	Uzbek, Russian	
Venezuela	Oct 31 – Dec 30, 2020	1,000	1.69	4.0	Landline and mobile telephone	Spanish	
Vietnam	Oct 19 – Dec 6, 2020	1,000	2.62	5.0	Mobile telephone	Vietnamese	
Zambia	Dec 1 – Dec 17, 2020	1,005	1.77	4.1	Mobile telephone	Bemba, English, Lozi, Nyanja, Tonga	
Zimbabwe	Oct 25 – Nov 21, 2020	1,002	1.86	4.2	Mobile telephone	English, Shona, Ndebele	

Appendix B: Data analysis methodology

Appendix B:
Data analysis methodology

The analysis in this report sought to answer the critical research questions that motivated this study. In some instances, this entailed reporting on the top-line results for each country and area in the study; however, more complex data analysis techniques were often required to better understand why and how attitudes to science and health differed across the world or parts of the world, or within a certain population. This section explores the analytical tools and techniques employed in this analysis.

Country groupings used in this analysis

As the 2020 Wellcome Global Monitor was fielded in 113 countries and areas, the survey findings are often reported in various cross-national groupings to help illustrate the global variation in the results without overburdening the reader by presenting data points from 113 different countries. The major types of country groupings used in this report are regional and country income breakdowns.

Regional groupings: The 2018 Wellcome Global Monitor analysis looked at 18 different geographic regions, largely corresponding to the continental sub-region or 'intermediary' regions used by the United Nations Statistics Division (UNSD)[7]. As the 2020 Wellcome Global Monitor was fielded in fewer countries than the 2018 wave* (113 vs 144), the number of regions needed to be reduced. Ultimately, Gallup and Wellcome decided on the groupings below.

Box B.1:
Regional groupings used in this report

When analysing the results from 113 countries in the Wellcome Global Monitor, this report uses the following regional groupings:

Australia/New Zealand: Australia, New Zealand

East Asia: China, Hong Kong, Japan, Mongolia, South Korea, Taiwan

Eastern Europe: Albania, Bosnia and Herzegovina, Bulgaria, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Ukraine

Latin America: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Paraguay, Peru, Uruguay, Venezuela

Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Lebanon, Morocco, Saudi Arabia, Tunisia, United Arab Emirates

Northern America: Canada, United States of America

Russia/Caucasus/Central Asia: Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan

South Asia: Bangladesh, India, Nepal, Sri Lanka

Southeast Asia: Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam

Sub-Saharan Africa: Benin, Burkina Faso, Cameroon, Congo Brazzaville, Cote d'Ivoire, Ethiopia, Gabon, Ghana, Guinea, Kenya, Mali, Mauritius, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe

Western Europe: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Malta, Latvia, Lithuania, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

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*As explained in Appendix A of this report.

Country income level: Countries were divided into four income groupings, as defined by the World Bank[8]*:

- **Low-income**: Gross national income (GNI) per capita of $1,035 or less (in 2019)
- **Lower-middle-income:** GNI per capita of $1,036 to $4,045
- **Upper-middle-income:** GNI per capita of $4,046 to $12,535
- **High-income:** GNI per capita above $12,535

Low-income and lower-middle-income categories were combined in the analysis, given the relatively few low-income countries included in the 2020 Wellcome Global Monitor (6). Overall, 38 countries included in the study were classified as low- or lower-middle-income economies, 32 as upper-middle-income economies and 43 as high-income economies.

Presentation of cross-country results

All results presented at a combined-country level – such as by region or country income level or at the overall (i.e., 'global') level – were weighted by the aged 15+ population size of the countries included in the analysis. This process gives more populated countries more weight than less populated countries.

For example, China has the largest population of the 113 countries included in the 2020 Wellcome Global Monitor. China's aged 15+ population represents about 22% of the total aged 15+ population across the countries and areas surveyed, according to the national census figures that Gallup used in its sampling and weighting processes. Thus, when presenting global estimates in this report, respondents from China were given a greater weight – which corresponds to the share of the population that they make up when determining the final calculation.

Standardisation of income, education and employment groups

Personal information such as income, education and employment can be defined or measured differently across countries, which can create challenges when attempting to compare cross-country results**. For this reason, the 2020 Wellcome Global Monitor examined these characteristics using standardised definitions of income and education (as defined below) that have been developed by the Gallup World Poll. Additionally, employment status was defined in a manner to fit with the definition used by the Bureau of Labor Statistics in the United States***.

Education

Countries have unique ways of classifying education levels, and these classifications need to be preserved during data collection for weighting purposes. In this study, however, to make comparisons across countries by educational attainment, consistent categories needed to be created. All descriptions of education can be placed within three categories: primary, secondary and tertiary. All responses regarding education were coded into their relevant category for global comparison.

- **Primary:** Functional equivalent to completing primary education or lower secondary or less. This level is closest to completing up to eight years of education. The exact definition will vary by country.
- **Secondary:** Functional equivalent to completing some secondary up to some tertiary education. This category typically refers to individuals who have completed nine to 15 years of education but have not completed the equivalent of a bachelor's degree. The exact definition will vary by country.
- **Tertiary:** Functional equivalent to completing four years of post-secondary tertiary education, or the equivalent of a bachelor's degree. This level typically refers to individuals who have completed approximately 16 or more years of education. The exact definition will vary by country.

Income

To provide household income measurements, Gallup asked respondents two questions. The first asked respondents about their monthly household income in local currency before taxes. Respondents were asked to include all income from all wages and salaries in the household, remittances from family members living elsewhere and all other sources. If the respondents hesitated to answer or had difficulty answering the first question, they were presented with a set of income ranges in their local currency and were asked which group they fell into.

- What is your total MONTHLY household income in (country), before taxes? Please include income from wages and salaries, remittances from family members living elsewhere, farming, and all other sources.
- (If don't know or refused, ask:) Would you say your total MONTHLY household income is _____?

Estimates for respondents who answered the second income question were imputed using hot deck imputation but restricting imputing values to the reported range. Estimates for respondents who did not answer either income question were imputed using the same method with no restriction of range. In this imputation process, each missing value is replaced with an observed value from another unit that has characteristics similar to the missing unit.

The hot deck imputation procedure matched respondents who gave answers and those who did not give any answers' (called 'donors' and 'beggars', respectively) by using a set of external independent variables that are expected to be related to household income and a non-response to the household income survey question. To impute household income, the list of these variables included survey items related to respondents' feelings about household income, ratings of standards of living, reporting not having enough money for food, household size and other variables that may vary by country such as urbanicity. Below is an illustration:

> Louise did not report her exact household income but reported $10K-20K in the follow-up closed-ended item. Her household income was imputed by finding a respondent with the same or very similar characteristics on the survey variables who did report their income and whose reported income was between $10K and $20K. That respondent's income value was used to fill in Louise's household income.

After the imputation of income ranges and missing values, income data were annualised and per capita annual income was calculated by dividing household income by the total number of persons living in the household. Per capita annual income was used to create income quintiles within each country's dataset.

Employment
Gallup classified respondents into one of six employment categories based on a respondent's combination of answers to a series of questions about employment.

- Employed full time for an employer: A respondent is considered employed full time for an employer if they are employed by an employer and work for this employer for at least 30 hours per week.

- Employed full time for self: Respondents are considered employed full time for themselves if they are self-employed and work at least 30 hours per week.

- Employed part time, do not want to work full time: Respondents who work either for an employer or themselves and do not work more than 30 hours per week at either job are categorised as employed part time. Additionally, when asked, these respondents indicate that they do not want to work more than 30 hours per week.

- Employed part time, want to work full time: Respondents who work either for an employer or themselves and do not work more than 30 hours per week at either job are categorised as employed part time. Additionally, when asked, these respondents indicate that they do want to work more than 30 hours per week.

- Unemployed: A respondent is unemployed if they report not being employed in the last seven days, either for an employer or themselves. The respondent must also report actively looking for a job in the past four weeks AND being able to begin work in the last four weeks.

- Out of the workforce: Respondents who are out of the workforce were not employed within the last seven days either for an employer or themselves, are not looking for work, AND/OR are not available to start work. Respondents may be full-time students, retired, disabled or homemakers; however, some respondents will not fall into any of these scenarios.

Endnotes

1. World Health Organization. (2017). Depression and Other Common Mental Disorders: Global Health Estimates. Licence: CC BY-NC-SA 3.0 IGO.

2. Ibid.

3. World Health Organization. (2018). International Statistical Classification of Diseases and Related Health Problems (11th revision). Retrieved from https://icd.who.int/browse11/l-m/en

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8. Serajuddin, U., & Hamadeh, N. (2020, July). New World Bank Country Classifications by Income Level: 2020-2021. World Bank Blogs. https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2020-2021

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