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Global survey on COVID-19 beliefs, behaviours and norms

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Policy and communication responses to COVID-19 can benefit from better understanding of people's baseline and resulting beliefs, behaviours and norms. From July 2020 to March 2021, we fielded a global survey on these topics in 67 countries yielding over 2 million responses. This paper provides an overview of the motivation behind the survey design, details the sampling and weighting designed to make the results representative of populations of interest and presents some insights learned from the survey. Several studies have already used the survey data to analyse risk perception, attitudes towards mask wearing and other preventive behaviours, as well as trust in information sources across communities worldwide. This resource can open new areas of enquiry in public health, communication and economic policy by leveraging large-scale, rich survey datasets on beliefs, behaviours and norms during a global pandemic.

Non-pharmaceutical interventions in response to COVID-19 often depend for their effectiveness on the behavioural responses of the public. Even with a vaccine, uptake is not entirely in the control of experts and policy-makers. Rather than being a small factor, there is growing evidence that the prevention behaviours of people are dramatically influenced by many social and cultural factors[1–3]. Analyses of mobility data reveal that the movements of people are predicted and perhaps caused by their partisan affiliation[4], media consumption[5] and the behaviours of their social networks[6]. Thus, the epidemiological and economic effects of policies that close (or open) businesses and schools are substantially determined by people's beliefs. This is consistent with the recognition, at least among public health experts, that health communication is a core part of effective response to epidemics, ideally in concert with other policies and interventions. However, developing and deploying effective policies and communication strategies demands data about people's beliefs and how they have been affected by prior exposure to information from governments, peers and media—and these data are largely lacking, even as massive troves of medical and behavioural traces are used by researchers[3].

This motivated us to conduct a large-scale, international survey related to COVID-19 in 67 countries (Fig. 1 maps the countries included) to help policy-makers and researchers better monitor and understand people's knowledge, beliefs, behaviours, norms and risk perceptions across the world through a collaboration with Facebook and Johns Hopkins University and with input from experts at the World Health Organization and the Global Outbreak Alert and Response Network. The survey is organized into blocks on the basis of the question topics. Every survey begins with questions from the same five blocks: information exposure, knowledge, vaccine and healthcare and demographics. In 'snapshot' countries, all respondents are shown an information block and then three additional blocks that are randomly selected from the remaining blocks. In 'multiwave' countries, respondents are shown four randomly selected blocks. Precise questions and the codebook for the data can be found in the Supplementary Information. In constructing the survey instrument, we drew on input from a wide set of domain experts. The survey consisted of questions related to COVID-19 information exposure and trust in information sources, knowledge about the virus, community norms, prevention behaviours, beliefs about efficacy of measures, vaccine acceptance, risk perceptions and locus of control in addition to demographics. The survey data include weights that use the rich information Facebook has about its users to reduce bias from non-response and differential Facebook use among different subpopulations. This resource article presents the survey dataset and some example use cases of the data.

Results

We now provide some basic results about the survey sampling and weighting as well as assorted analyses using data from some of the modules of the survey, including vaccine acceptance over time, mismatch in COVID-19 perceptions and consumption and trust of various news sources. These are some examples of possible uses of the data. In the Discussion, we show some other examples from other papers using the same data and point to directions for future research using the data.

Characteristics of the sample. Figure 2 shows the sample size we obtained per country and the effective sample size (as measured by Supplementary Information equation (A.2)). Although, on average, we obtain 3,000 users per week, the effective sample size varies widely, Bangladesh being the lowest with an average of only

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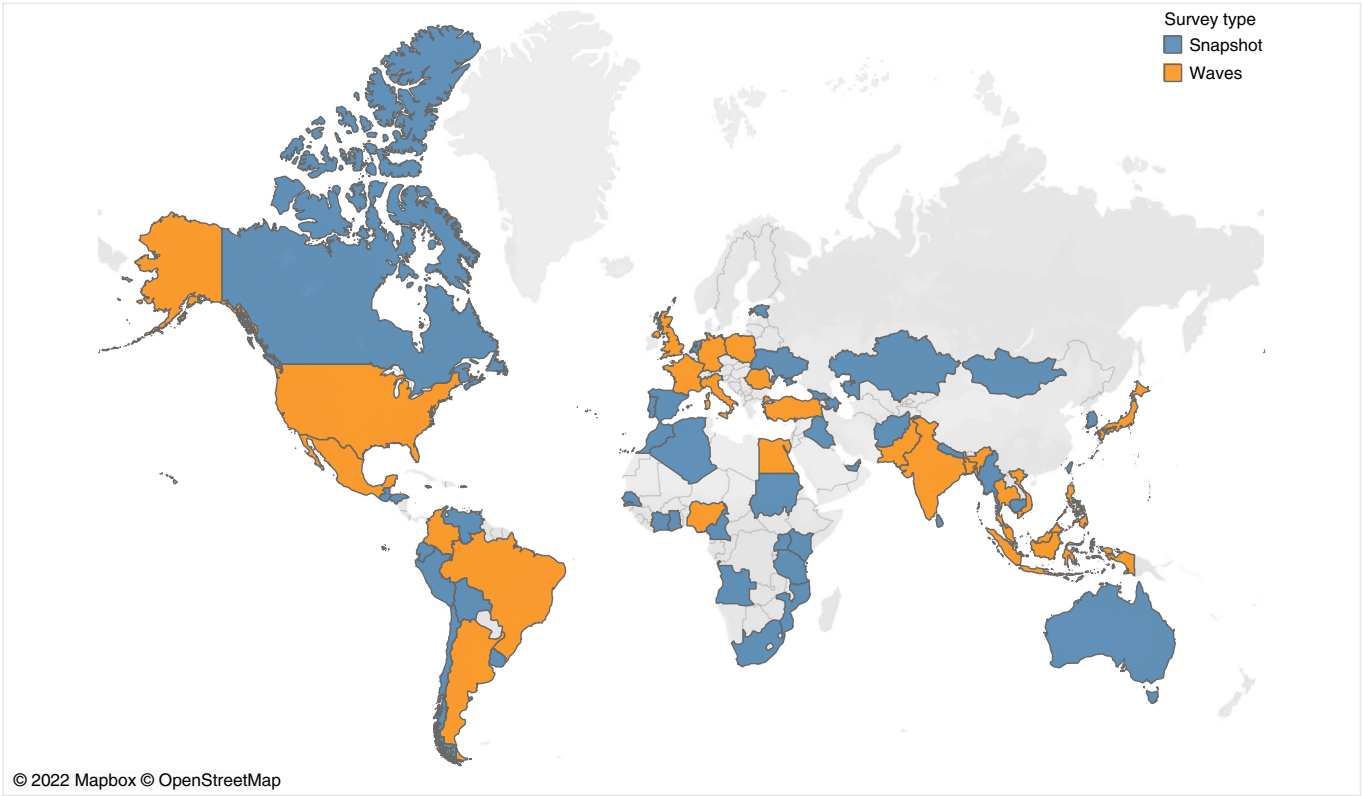

Fig. 1 | World map showing the countries represented in the survey. Twenty-three 'wave' countries were surveyed in 2-week waves from July 2020 until March 2021. Forty-four 'snapshot' countries were surveyed twice, once in July 2020 and another time in November 2020.

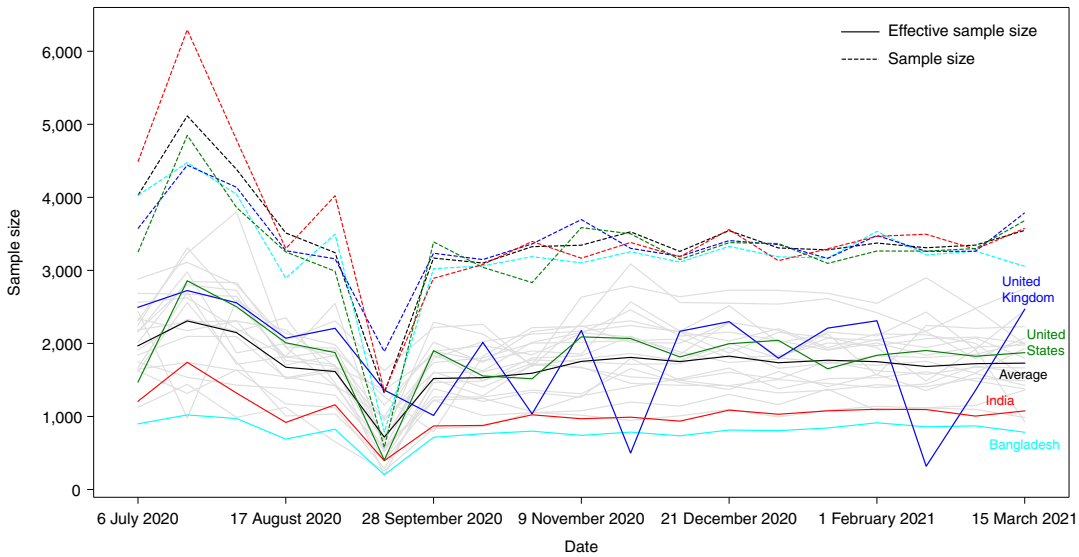

Fig. 2 | Sample sizes and effective sample sizes by country and survey wave. The survey consistently samples (except the wave starting on 14 September 2020) around 3,000 users every wave. However, the effective sample size varies more widely among the countries and within each country. The *x* axis indicates the start date of a 2-week period (a 'wave') of data collection. For clarity, four countries are highlighted; a full version of the plot for all 23 countries is shown in Supplementary Information Fig. A5.

791 users. Supplementary Information Tables A2 and A3 show the unweighted and weighted demographics of our sample, respectively. Supplementary Information Table A1 shows the two most popular languages used, by country.

Next, we plot the (inverse) conversion rate to the survey (how many users saw our survey prompt on their homepage) versus how many clicked and completed our survey. We can see from Fig. 3 that we needed, on average, 260 impressions for a single response. This is in line with the conversion for previous research using Facebook ads for surveys[7]. For most countries with good Facebook penetration (for example, in Europe), this number is around 50. For some countries (for example, Nigeria and India), the number was at least

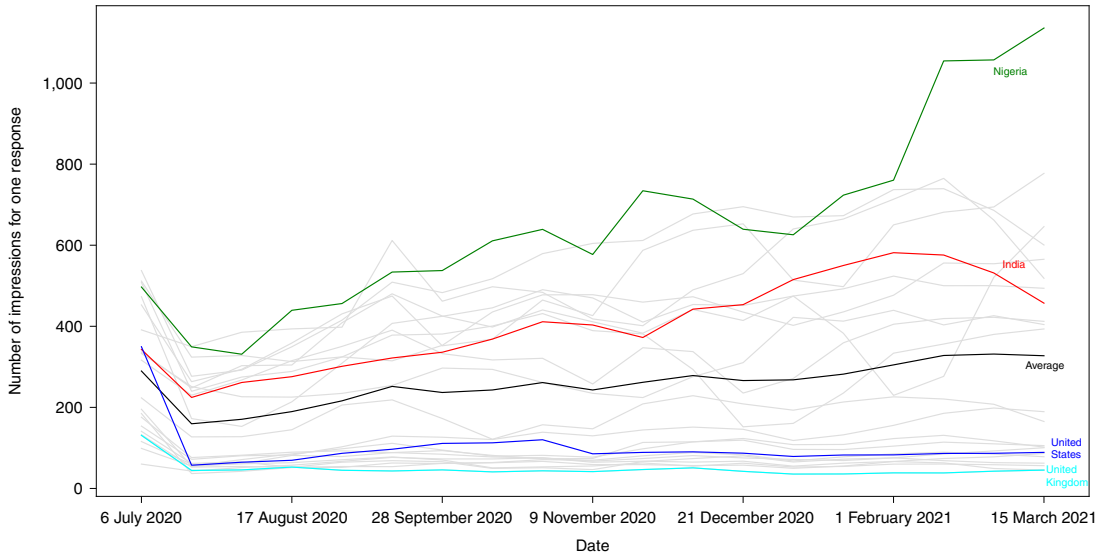

Fig. 3 | Number of impressions per response by country and survey wave. There is substantial heterogeneity in the conversion across countries. For clarity, four countries are highlighted; see Supplementary Information Fig. A6 for plots for all countries.

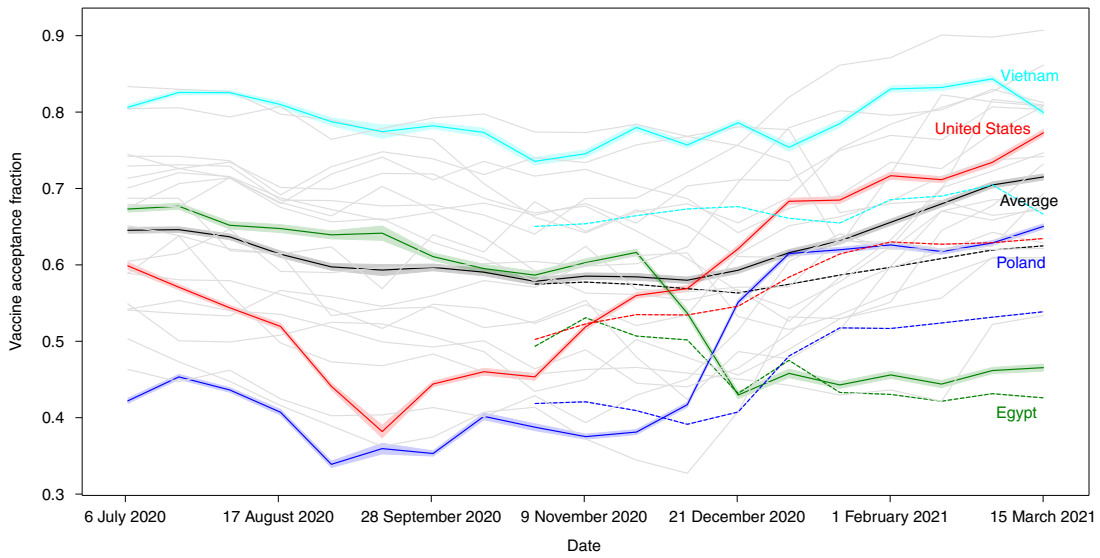

Fig. 4 | The fraction of respondents who say that they would take a vaccine or have taken the vaccine (vaccine acceptance fraction) over time. For clarity, only four countries are highlighted; see Supplementary Information Fig. A7 for individual country results. Bands are 95% confidence intervals.

an order of magnitude higher. This may reflect various differences, including perceived and actual costs of mobile data that would be used when completing the survey. Our survey weights are designed to reduce these biases in sampling.

Vaccine acceptance over time. We look at vaccine hesitancy and its trends over time. First, we computed the fraction of respondents who say that they would take a vaccine or have taken the vaccine (starting July 2020). Figure 4 shows the trends for the 23 wave countries over the duration of the survey (July 2020–March 2021). We observe a few clear trends. There is huge heterogeneity across countries, with Vietnam having a consistent vaccine acceptance of over 80% throughout the time period and countries like the United States and Poland experiencing an initial dip but improving in terms of acceptance later in the months before mass rollout of vaccines. Egypt, which would not see vaccines rolled out at scale for another 6 months, had a steady decline in vaccine acceptance during the same period[8]. On average, across the 23 wave countries, vaccine acceptance has varied in the range of 57% to 71% with slight improvements since late 2020. We notice these improvements across many countries where vaccines were being slowly rolled out, although making a causal connection between vaccine rollout and vaccine acceptance is beyond the scope of this paper.

Starting in wave 9 (end of October 2020), we also asked the following question about perceived vaccine norms: 'Out of 100 people in your community, how many do you think would take a COVID-19 vaccine if it were made available?'. The question helps us gauge perceptions of vaccine acceptance in the community. It is interesting to note that there is a significant difference between individual beliefs ('acceptance') and beliefs about others ('norms'). There is at least a 10% gap between them consistently. Respondents think that at least an additional 10% of the population would not take the vaccine.

Figure 5 shows the proportion of responses to the vaccine acceptance question for the four countries. The figure shows the importance of the 'Don't know' response or people who are yet undecided

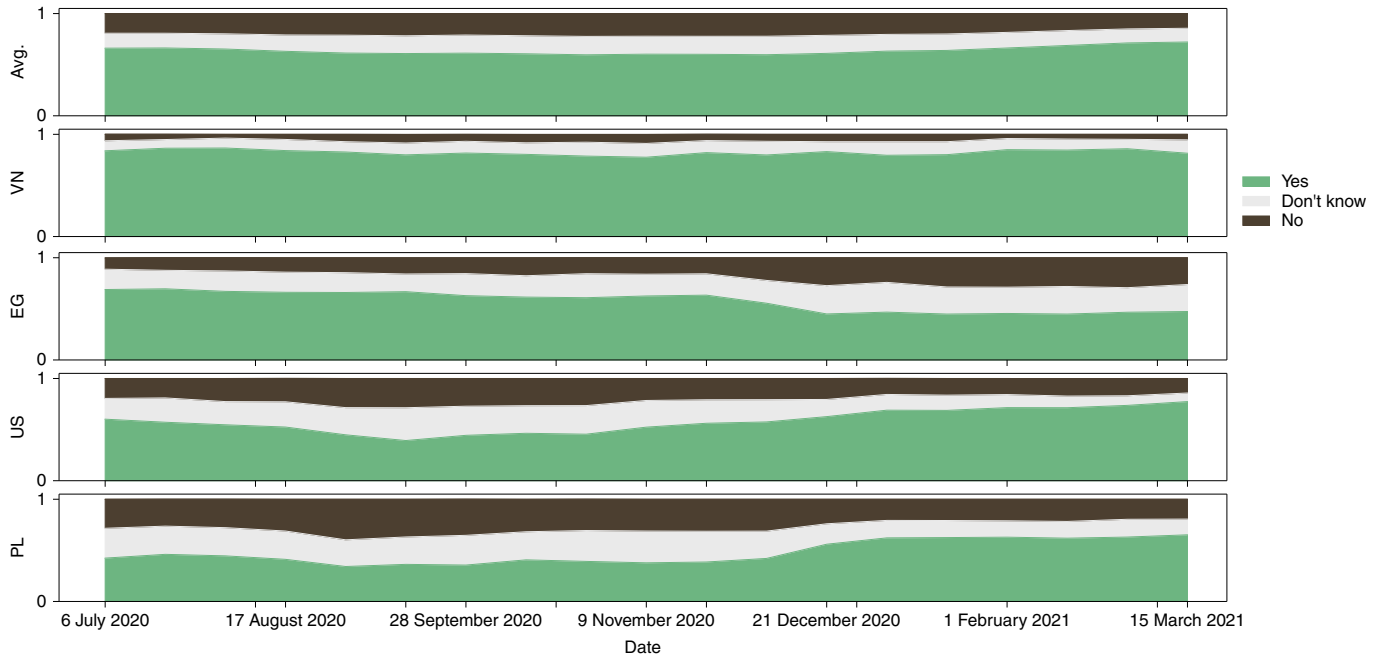

Fig. 5 | Distribution of responses for the vaccine acceptance question for four countries along with the average across our sample. Avg, average across all 23 wave countries; VN, Vietnam; EG, Egypt; US, United States; PL, Poland. We can observe the wide variance across countries about the role of vaccine-hesitant users (respondents saying 'No') and unsure users (respondents saying 'Don't know'). Supplementary Information Fig. A8 shows the result for all the countries in our sample.

on the vaccine. Consider the case of the United States, where the proportion of unsure users declined over time, while the proportion of users saying they would take a vaccine increased. Similarly, in Egypt, the proportion of users who oppose the vaccine as well as those who are unsure has increased in the last few months which is a good case study for policy intervention. Overall, on average, across the 23 countries in our dataset, vaccine acceptance varied between 59% and 72% between July 2020 to March 2021. The proportion of users who are not sure has ranged between 13% and 18% during that same period.

Next, we plotted the correlation between acceptance and norms for the 44 snapshot countries (for wave 9, in which the norms question was asked). We observe similar trends in Fig. 6. In all the 44 countries, respondents think others are much less likely to get the vaccine than they are themselves. We highlighted four countries to indicate the heterogeneity across countries. Note that self-reported intentions to vaccinate might differ from actual vaccine uptake[9].

Mismatch in COVID-19 perceptions. We asked two questions about the perception of seriousness of COVID-19 and perceptions among the community: community_action_importance—'How important is it for you to take actions to prevent the spread of COVID-19 in your community?' (possible answers—extremely important, very important, moderately important, slightly important, not important at all); and community_action_norms—'How important do other people in your community think it is to take actions to prevent the spread of COVID-19?'. If respondents themselves think taking action against COVID-19 to be extremely important, but think others do not take it seriously (or vice versa), they might adapt their behaviour to take steps that would not be necessary. Figure 7 shows the mismatch in beliefs for two countries: the United States and Japan. The figure shows a heat map of the mismatch. The plots are normalized by row (one's own beliefs) and each cell indicates the conditional probability of beliefs about others (columns) given one's own beliefs (rows sum to 1). We see that there

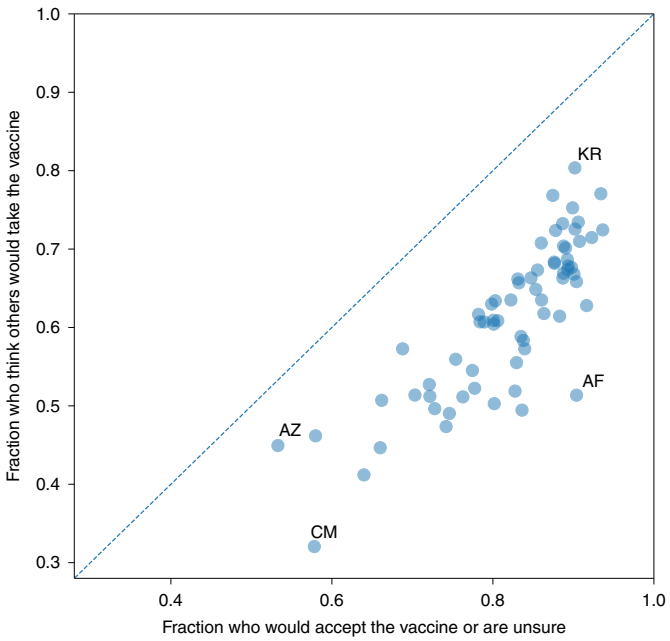

Fig. 6 | Vaccine acceptance versus vaccine norms for all 67 countries in our sample. Each point is the weighted fraction for that country. Across all countries, respondents think that far fewer people in their country say they would take the vaccine. AZ, Azerbaijan; CM, Cameroon; AF, Afghanistan; KR, South Korea.

is a clear difference in the distributions across the United States and Japan, with most people in Japan having a congruent view, compared to the wide range of disagreement in the United States. The two countries were chosen to show an example of how divergent the beliefs about others could be in different cultures.

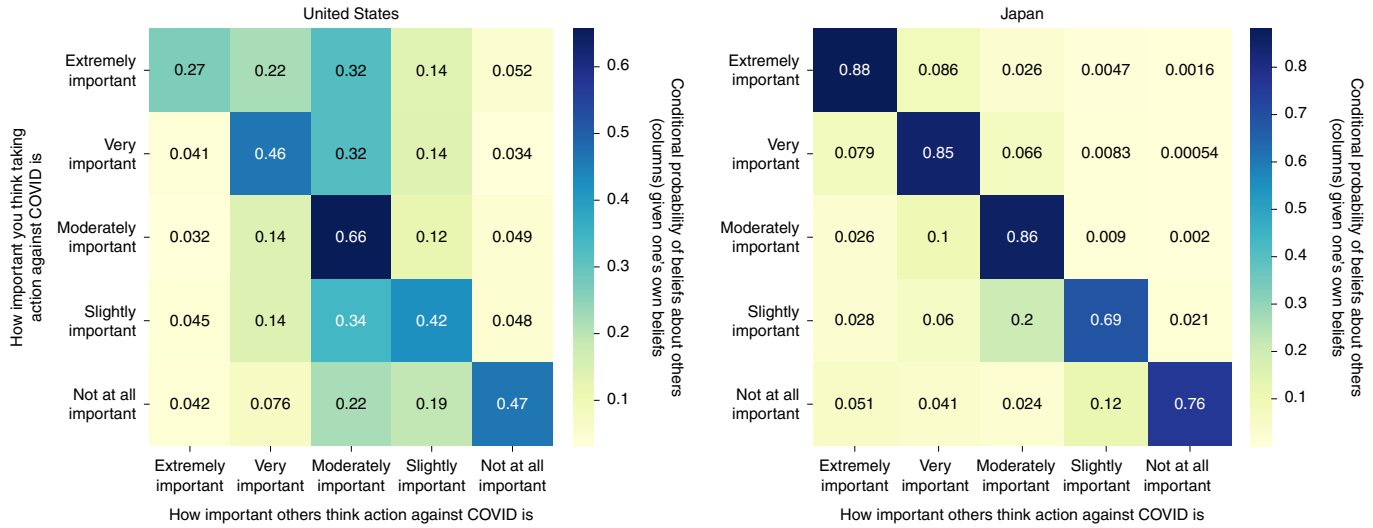

Fig. 7 | Beliefs about the importance of taking action against COVID versus beliefs about the beliefs of others in the United States and Japan. The *y* axis indicates how serious the respondent considers COVID-19 to be and the *x* axis indicates how serious they think others think COVID-19 is. The number in each cell represents the conditional probability of beliefs about others (columns) given one's own beliefs (rows, which sum to 1). For instance, for the United States (plot on the left), the top left cell value of 0.27 indicates that 27% of the users who think taking action against COVID-19 is 'extremely important' also think that others think it is 'extremely important'.

News sources and medium: consumption versus trust. Finally, we asked for the sources/ mediums users consumed COVID-19 related information from and their trust in these sources (pages 20 and 21 in the Supplementary Information list these survey questions). Figure 8 shows the trends for consumption and trust for five sources: online news, radio, television, local health workers and politicians. In a pandemic, it is important to have widely trusted sources provide information that is widely consumed[10–12]. However, as we can see from the figure, most sources do not satisfy this criterion. Some interesting trends emerge: politicians are the least trusted, and in most countries the least used, source of information. Television has high consumption but trust in television varies widely among the countries in our sample. Local health workers are typically well trusted but they are not a source of information for most countries.

Discussion

The paper describes a global, longitudinal survey on COVID-19 behaviours, beliefs and norms. We present three examples of potential use cases for the dataset: (1) vaccine acceptance and norms, (2) mismatch between own beliefs and beliefs about others and (3) trust in versus consumption of various news sources. Some of the trends observed here, particularly at a global scale and including countries in the global south, are valuable for understanding behavioural and social drivers of vaccination[13] and would not have been made available to the research community otherwise. Identifying what people think and feel and the social processes, such as norms[14], that influence their thinking will help researchers identify motivations behind critical health behaviours. Such a strategy is, for instance, extensively used by WHO for measuring behavioural and social drivers of vaccine hesitancy[15]. Overall, this paper provides a valuable resource which should serve as a foundation for future research and give rise to new questions in understanding the COVID-19 pandemic and developing policy solutions around it. For instance, our findings on heterogeneity in vaccine trends across countries (Fig. 4) or the mismatch in perceptions across countries (Fig. 7) are new and may not be explained by existing literature. Combining our data with historic and cultural trends could help identify new insights on the role of country-specific variables in explaining the results[16,17]. Some of the temporal variations in vaccine acceptance (for example, in countries such as the United States, Poland and Egypt, highlighted in Fig. 4) remain unexplained and open venues for future research into factors behind vaccine acceptance trends.

Our survey data can directly inform policies on the national and global stage. For example, others in their study of political messaging and attitudes towards vaccination in Latin America[18] use our surveys to assess the relationship between vaccine acceptance, political vaccination campaigns and political trust. Another study of our survey responses for South Asian countries identified gender, age, knowing someone who tested positive for COVID-19 and perceived effectiveness of mask wearing as significant determinants of COVID-19 vaccine hesitancy, arguing for targeted vaccine education and communication campaigns[19]. Others[20] analysed responses among ten snapshot countries in sub-Saharan Africa in the two survey rounds that happened in July and November 2020 (Fig. 1). They use the 'yes' and 'no' answers to the survey question about handwashing in the past week as their primary outcome. Using a multivariate logistic regression, they identify the main determinants of handwashing that are classified sociodemographic (age, gender, education and rural or urban residence) and ideational (perceived personal health, beliefs about handwashing, knowing someone diagnosed with COVID-19 and perceived norms), adjusting for country-level fixed effects. The authors document clear regional and country-level variations in handwashing, pointing to settings with the greatest opportunity for improvement. Similarly, the significant country-level heterogeneity of our survey measures and, in particular, the vaccine trends, have served as motivation or explanatory factors in other research studies that target local populations; for example, in Spain[21] or Australia[22].

Several other studies have used COVID-19 beliefs, behaviours and norms survey data to analyse risk perception, attitudes towards mask wearing and other preventive behaviours, as well as trust in information sources across communities worldwide. A previous study[23] uses the survey data to identify significant predictors of risk perception in older adults and its association with their preventive behaviours and medical avoidance. They find accurate knowledge to be a crucial factor in disentangling this association. Joining the survey data with COVID-19 cases and death counts worldwide, another study[24] shows that mask wearing and attitudes towards

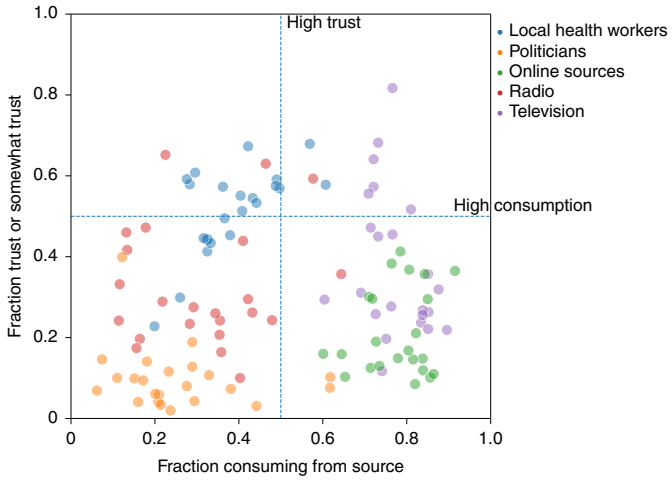

Fig. 8 | Trust versus consumption of news sources and media. Each point is a country and source pair for all wave countries, averaging over all waves of the survey.

masks are associated with fewer cases and deaths across different countries, controlling for socioeconomic factors such as population density, human development and mobility. Another analysis[17] of the survey data reveals that mask usage is higher in countries with more collectivistic (versus individualistic) cultures after controlling for a host of variables such as COVID-19 severity, government policy, population density, GDP per capita and demographics. Others[25] analyse our survey responses to construct various measures of vaccine intention, perceived invincibility and prosocial concerns at the individual level and study their relationships, controlling for perceived personal health and demographic attributes measured in the survey, as well as estimates of country-level cultural collectivism from other studies. They show that perceived invincibility has an overall negative effect on both prosocial concerns and vaccine intentions. These effects are particularly pronounced in counties with low cultural collectivism and shown to be robust across age cohort and gender. This ability to investigate individual health-related behaviours by controlling for country-level variables, such as cultural collectivism, shows the unique contribution of the present resource to the research community. Such investigations would not have been possible without the global COVID-19 beliefs, behaviours and norms survey data.

Yet another study[26] uses the randomized order of the survey questions to show that highlighting accurate information about vaccine norms increases vaccine acceptance. Several layers of randomization throughout the survey provide a ripe ground to explore priming, anchoring and information treatment effects on different demographics in a representative global sample (for example, respondents are randomized to see questions about their risk perception and perceived control over health outcomes which affects their answers to follow-up questions about their adherence to preventive measures in ways that can inform public health communication). The longitudinal data are collected over a period of global pandemic emergency that coincided with high-profile events, providing natural experimental opportunities on national and international scales (for example, the US presidential election, epidemic peaks and emergency use approvals of vaccines in different countries). In addition to in-depth demographic, psychographic and sociometric measurements of health-related behaviours as well as media and news consumption (some of which were show-cased in the Results), the survey resource also has questions about work and travel (full survey instrument given in Supplementary Information D). We expect the confluence of these factors will open new areas of enquiry in public health, communication and economic policy and we are optimistic that future researchers will leverage these large-scale, rich survey data on beliefs, behaviours and norms during the COVID-19 pandemic in innovative ways.

Methods

The survey's purpose was to guide policy and research around individual responses to COVID-19 beyond symptoms and the most closely associated behaviours. The Committee on the Use of Humans as Experimental Subjects at the Massachusetts Institute of Technology (MIT) approved the survey as exempt (project no. E-2294) and informed consent was obtained from all participants. The survey ran from July 2020 until March 2021. It was translated into 51 languages and fielded in 67 countries, yielding over 2 million responses. The full survey instrument is provided in Supplementary Information D. The survey data dictionary is provided in Supplementary Information B and the log of changes to the survey over the course of its duration are provided in Supplementary Information C.

Survey instrument design. There were multiple goals for this survey and associated topics for each goal that formed individual modules of questions. The users of this survey include academic researchers, governments and non-governmental organizations. As the pandemic was occurring during the lifetime of this survey, one of our main goals was to provide ongoing tracking of key measures of knowledge about COVID-19 and how to prevent its spread, which can inform targeting and evaluation of public health campaigns. For researchers, the goal behind the survey was to provide them with a rich dataset spanning multiple countries to conduct more in-depth research. We gave examples of research papers applying this dataset in the Discussion.

More specifically, we wanted to provide data to help achieve the following goals:

- Understand which preventive behaviours are most/least understood and practiced by region/country and how this changes over time
- Identify countries/regions with low knowledge of given preventive behaviours and understand how and why this differs from adjacent countries/regions
- Identify differences in self-reported preventive behaviours associated with differences in psychosocial behavioural determinants
- Identify countries/regions with the biggest gap between knowledge and practices and understand how and why this differs from adjacent countries/regions
- Understand how COVID-19 related policies impact knowledge, attitudes and behaviours by geography

These survey goals led us to build different modules within the survey including (see Supplementary Information D for the full survey instrument):

- Basic demographics and localization
- Knowledge about COVID
- Knowledge about preventive measures
- Current behaviours for prevention
- Beliefs about norms
- Hypotheticals about relaxed restrictions
- Exposure to various sources of information

Sampling and weighting. The survey was fielded in two different ways. First, in countries with a sufficient pool of Facebook users to sample, we fielded a multiwave survey that ran continuously in multiple 2-week waves from July 2020 until March 2021. In each wave, Facebook aimed to deliver 3,000 respondents to our survey. In countries with a more limited survey pool, we fielded a snapshot survey where Facebook aimed to deliver 3,000 respondents over a 2-week period; this was done twice, first in July 2020 and then in November 2020. The list of countries is selected on the basis of survey viability (which is determined by the population of Facebook users in that country), regional representation and feedback from survey partners at the World Health Organization and the Global Outbreak Alert and Response Network. See Fig. 1 for a map showing the countries.

The Facebook team uses non-response modelling and poststratification techniques from survey statistics to design the following components[27,28]:

(1) Sampling—deciding who to present with the invitation to participate in the survey
(2) Weighting—providing a weight per user so that respondents better represent the target population as a whole

Using the total survey error framework, the goals of the sampling and weighting steps are to minimize the representation error due to the coverage, sampling variability and non-response biases[28]. Each sampled user was presented with an online consent form to take part in the MIT survey (the survey instrument in the Supplementary Information gives the text of the consent form). The weights are constructed on the basis of behavioural covariates such as frequency and duration of user activity as well as self-reported demographics. These attributes are used by Facebook in their routine surveys and no new data were collected by Facebook for this purpose. The survey weights do not come from individual survey responses, which Facebook does not collect or have access to but rather come

from internal Facebook data. The exact nature of the client data and algorithms are proprietary to Facebook. The data are protected by Facebook and its original collection is not subject to the consent form but is covered by Facebook's terms of service. MIT has no access to these data per the terms of the data use agreement between Facebook and MIT. Survey respondents consented to MIT receiving their survey weights from Facebook.

The MIT team supplied binary survey completion flags (binary indicators of whether or not each respondent has completed the survey) along with a respondent identifier (a random number associated with each survey respondent) back to the Facebook team. No other data about individual respondents were sent by MIT to Facebook. We provide the completion flags for the following two analytical samples:

(1) Respondents who have completed the basic knowledge and demographics parts of the survey. This part consists of a briefing followed by questions about information exposure, availability of treatments and vaccines and contact with healthcare workers, as well as gender, age, education, overall health, country and, in the case of the United States and India, state as well. We call this the 'demographic completion type'.

(2) Respondents who have reached the end of the entire survey, viewing (and typically answering) additional questions about information sources; information needs; their knowledge about high-risk populations, methods of transmission and disease symptoms; norms and beliefs about distancing, mask wearing and other preventive measures; risk perception and locus of control; work, travel and intentions to visit various locations, followed by a debrief. We call this the 'full survey completion type', although note that there can still be missing data due to non-response to individual questions and random assignment to different survey blocks.

Subsequently, the Facebook team computed and returned sets of survey weights to the MIT team, one set for each analytical sample. No other data about respondents were sent by Facebook to MIT besides a respondent identifier (a random number associated with each survey respondent), their language preference, these survey weights and an indicator of whether these survey weights were clipped (Supplementary Information A). The weights are meant to be used in Háajek estimators (normalized importance sampling estimators) for measuring population means. Specifically, let Y_i be an outcome variable of interest measured for the respondent i whose weight is w_i. The Háajek estimator, $\hat{Y}$, for the population mean of the outcome, $\bar{Y}$, is given by:

$$\hat{Y} = \frac{\sum_{i=1}^{n} w_i Y_i}{\sum_{i=1}^{n} w_i}, \quad (1)$$

This is the default in most statistical software for computing a weighted mean. Subsequently, if interested in population totals, analysts should use $N\hat{Y}$ as an estimator of the total outcome level where N is the population size. That is, analysts should not use the weights in an unnormalized way, as in a Horvitz–Thompson estimator (an unnormalized importance sampling estimator), as, while the weights are approximately on the level of each country's adult population, the clipping and other adjustments to the weights make them unsuitable for direct estimation of total outcome levels without normalization. More generally, users can use these weights in other related estimators that appropriately normalize the weights[29]. Survey weights are critical to maintaining statistical representativeness and especially important for large samples[9]. Supplementary Information A includes a detailed description of the survey weights design and various consistency checks for representativeness of the weighted survey sample.

Reporting summary. Further information on research design is available in the Nature Research Reporting Summary linked to this article.

Data availability

Aggregate data can be found at https://covidsurvey.mit.edu/ and researchers can request access to respondent-level responses (microdata) at https://dataforgood.facebook.com/dfg/docs/preventive-health-survey-request-for-data-access.

Code availability

Analysis code to reproduce figures in the manuscript are available at https://github.com/gvrkiran/Global-Survey-on-COVID-19-Beliefs-Behaviors-and-Norms.

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Author contributions

A.C., K.G., A.M. and M.A.R. led the project with supervision from D.E. and S.A. Authors A.C., K.G., A.M., M.A.R., D.E., S.A., S.B., N.H.G., D.S. and J.S. contributed to designing the survey. A.C. and A.M. led the implementation of the survey design. A.M. managed data processing and exchange. K.G. led the analysis with inputs from A.C., A.M., M.A.R. and D.E. The paper was written by A.C., K.G., A.M., M.A.R. and D.E.

Competing interests

Facebook has sponsored a conference organized by S.A. and D.E. D.E. is a consultant to Twitter. A.C. and D.E. have received funding for other research from Facebook. M.A.R. serves on the advisory committee of a vaccine confidence fund created by Facebook and Merck. The remaining authors declare no competing interests.

Additional information

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For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed	
☐	☒	The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement
☐	☒	A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒	The statistical test(s) used AND whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
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☒	☐	For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted *Give P values as exact values whenever suitable.*
☒	☐	For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☒	☐	For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☒	☐	Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated

Our web collection on statistics for biologists contains articles on many of the points above.

Software and code

Policy information about availability of computer code

Data collection	The survey instrument is provided in the appendix. The Qualtrics survey preview link is here: https://mit.co1.qualtrics.com/jfe/preview/SV_9ZxxxOQGLnp29yR?Q_CHL=preview&Q_SurveyVersionID=current&fbclid=IwAR1gG1ZJNtBVhadC8maaZftWgYeKo6xLN_lfaErJqDIAgA14XjHiqd7dmCE
Data analysis	All analysis done in python was done using python 3.8 with the following packages numpy (1.21.2), pandas (1.3.0), patsy (0.5.1), scipy (1.6.2), stargazer (0.0.5), statsmodels (0.12.2). The multilevel modeling analysis was run using R version 3.5.1 and additional auxiliary analysis was run using R 4.0.21. Analysis code to reproduce figures in the manuscript are available at: https://github.com/gvrkiran/Global-Survey-on-COVID-19-Beliefs-Behaviors-and-Norms

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Aggregate data can be found at this link: https://covidsurvey.mit.edu/, and researchers can request access to respondent-level responses (microdata) by requesting access at this link: https://dataforgood.fb.com/docs/preventative-health-survey-request-for-data-access/

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Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	This resource describes quantitative data from a global survey on COVID-19 beliefs, behaviors and norms, conducted in 67 countries yielding 2.0 million responses.
Research sample	The sample was recruited in collaboration with Facebook and consists of users of Facebook. Users were recruited through a message on their news-feed. The survey was translated to 51 languages and fielded in 67 countries yielding over 2.0 million responses. This is one of the first international social science surveys of this magnitude. Our collaboration with Facebook has enabled both this wide distribution, but also state-of-the-art, privacy-preserving adjustment for non-response leveraging demographic and behavioral variables observed by Facebook. No new data was collected by Facebook for the purpose of this survey. The variables used by Facebook to construct weights are already used in their routine surveys. The weights are designed to make the sample representative of populations of interest.
Sampling strategy	The survey was fielded in two different ways. First, in countries with a sufficient pool of users to sample, we fielded a multi-wave survey that ran continuously in multiple two-week waves from July 2020 until March, 2021. In each wave, Facebook aimed to deliver 3,000 respondents to our survey. In countries with a more limited survey pool, we fielded a snapshot survey where Facebook aimed to deliver 3,000 respondents over a two week period; this was done twice, first in July, 2020 and then in November, 2020.
Data collection	Survey was conducted on Qualtrics. The Qualtrics survey preview link is here: https://mit.co1.qualtrics.com/jfe/preview/SV_9ZxxxOQGLnp29yR?Q_CHL=preview&Q_SurveyVersionID=current&fbclid=IwAR1gG1ZJNtBVhadC8maaZftWgYeKo6xLN_IfaErJqDIAgA14XjHiqd7dmCE Users were blinded to their assigned experimental condition.
Timing	Wave countries: every two weeks from July 2020 until March 2021 Snapshot countries: Twice, in July 2020 and November 2020.
Data exclusions	No data were excluded from the analyses.
Non-participation	On average, we needed around 200 impressions for a single response. This is in line with the conversion for previous research using Facebook ads for surveys (Allcott et al., 2021). The survey data includes weights that use the rich information Facebook has about its users to reduce bias from non-response and differential Facebook use among different subpopulations.
Randomization	For the norms intervention described in Moehring et al. (2021), we provided the treatment at random times (either before or after the outcome was measured) and the treatment contained information about a randomly chosen preventative behavior. All subjects who were eligible for the information eventually saw the information if they completed the survey. Reference: Moehring, A., Collis, A., Garimella, K., Rahimian, M. A., Aral, S., & Eckles, D. (2021). Surfacing norms to increase vaccine acceptance. Available at SSRN 3782082.

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We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☐	☒ Human research participants
☒	☐ Clinical data
☒	☐ Dual use research of concern

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Human research participants

Policy information about studies involving human research participants

Population characteristics	The distribution of demographic characteristics are displayed in the manuscript. The sample was recruited to be representative of the adult population in a country after incorporating survey weights.
Recruitment	Subjects were recruited by Facebook and sent to our platform. In the manuscript we demonstrate substantial sampling and non-response bias that are in large part corrected when survey weights are incorporated. Randomization happens after recruitment, so these biases do not threaten internal validity of the study. Moreover, we show that results are robust to whether or not we adjust using the survey weights.
Ethics oversight	The MIT Committee on the Use of Humans as Experimental Subjects approved both the original survey (protocol E-2294) and the randomized experiment (protocol E-2674) as exempt studies.

Note that full information on the approval of the study protocol must also be provided in the manuscript.

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Supplementary information

Global survey on COVID-19 beliefs, behaviours and norms

In the format provided by the authors and unedited

Supplementary Information:

Global survey on COVID-19 beliefs, behaviors, and norms

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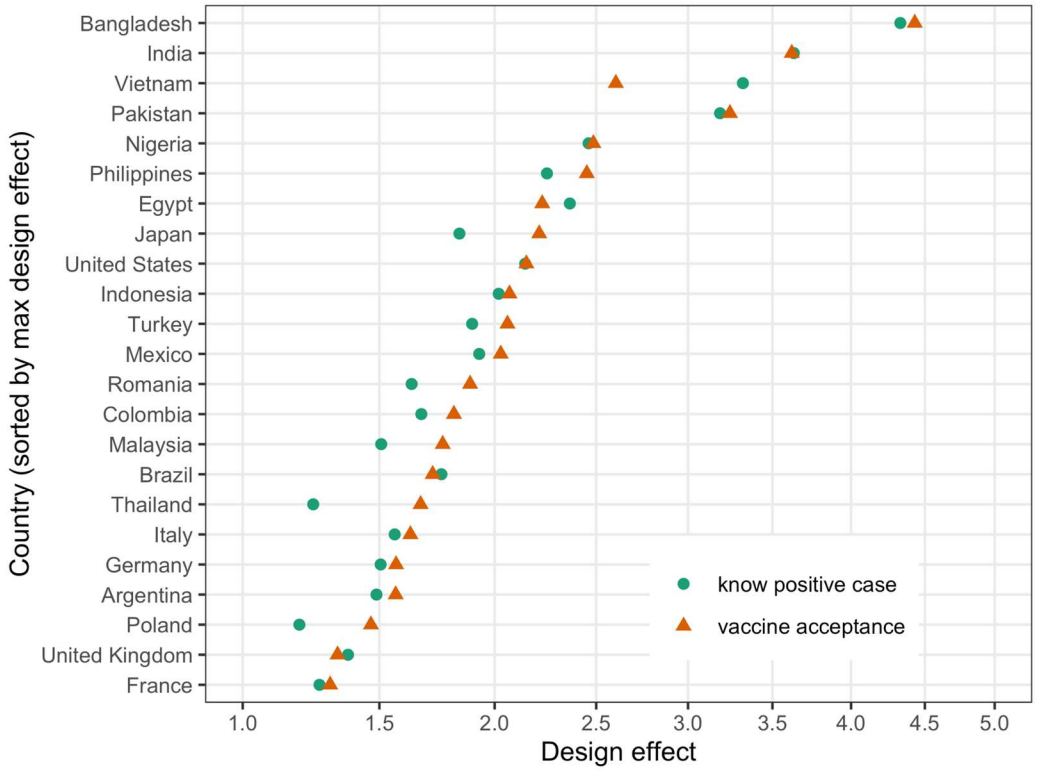
Contents:

Supplementary Information A: Survey weights

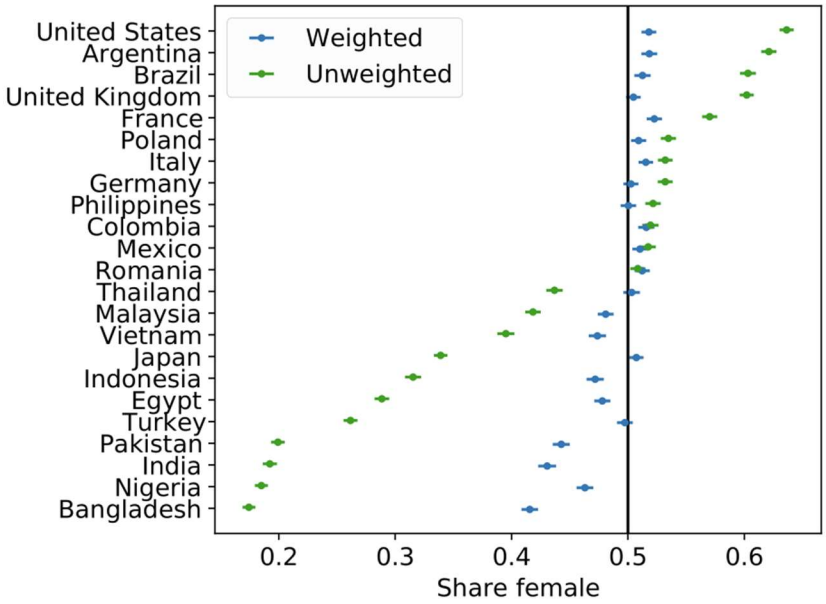
Non-response modeling and post-stratification

Based on the various attributes of each client and their patterns of engagement with the Facebook platform, the Facebook team designed a regularized regression and post-stratification model to issue a set of weights for the survey respondents in each wave. Subsequently, the survey respondents are modeled as differing not only in their demographics (through post-stratification), but also in their response or nonresponse behaviors. The regression model outputs the probability of responding to the survey as a function of the sample attributes. After training the regression model, the resultant non-response weights are calculated for each survey respondent as the inverse of their response probability (i.e., the inverse probability of sampling weights, IPSW). The Facebook team tested multiple models of survey nonresponse behavior with varying degrees of complexity (in terms of the number of included attributes and their interactions) and chose the most parsimonious model with low design effects (Little and Vartivarian, 2005). The non-response weights provide us with a representative sample of the Facebook active user base, irrespective of their non-response behavior or factors that might have prevented them from being exposed to Facebook's invitation to the survey. After weighting for nonresponse, by comparing the demographic data (age bracket and gender) of the respondents with the census data in each country, the weights were readjusted to match the target population which we aim to represent. This uses post-stratification, a common method in survey analysis to correct for known differences between the sample and target populations (Little 1993). For each country, the Facebook team considered a two-way cross-classification of the age brackets and gender, and provided weights for the country's adult population. Although post-stratification reduces the bias and increases the representativeness of the survey sample, the added adjustment to the weights induces an increased design effect. We aimed to keep the overall design effects due to both the non-response and post-stratification weighting below four, and it remained below two for most counties (Supplementary Information A Fig. 1).



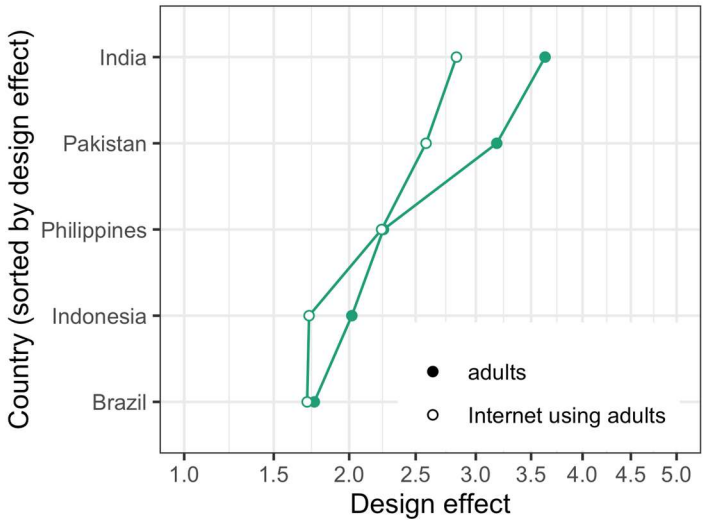
Supplementary Information A Figure 1. *Design effect from weighting wave 1, using the demographic completion weights, for two of the questions that occur prior to the demographics block. Design effects for most countries are near or below two.*

Using the survey data, we can plot the self-reported demographics of each country with and without the weights to see the effect of post stratification (Supplementary Information A Figure 2). In some cases, Facebook's inferred demographics may not match what the users report in the survey. This causes a mismatch between the census data and weighted self-reported demographics (e.g., female population in Pakistan, India and Bangladesh in Supplementary Information A Figure 2 remain below their census levels). Since our survey results come with self-reported demographic information, the researchers who use this data can perform their own adjustments to the weight in trying to match their target population's demographics.



Supplementary Information A Figure 2. *Illustration of change in self-reported share of females in each county after weighting. Unweighted proportions in green show country-specific biases. These are substantially reduced when using weights — here the weights for the demographic completion type. The self-reported fraction of females remains statistically significantly different from 0.5 in several countries, though the bias is substantially reduced after incorporating the survey weights. Data are presented as mean values, error bars are 95% confidence intervals, and n=1,429,453.*

For some countries, weights for another target population are provided (in addition to the adult population weights). In particular, for some countries where data on their Internet-using population was available, there was (a) substantial divergence between their adult Internet users and adult population and (b) substantial divergence between the respondent population and the adult population, such that post-stratification by age and gender results in a large reduction in effective sample size and may also leave much bias remaining. For some of these countries, and where data on demographics of Internet users is available, we include weights where the target population is adult Internet users. Targeting the population of internet-using adults will reduce the design effect (Supplementary Information A Figure 3) as presumably the demographics of the Facebook active user base is more similar to that of adult Internet users than all adults.



Supplementary Information A Figure 3. *Design effect from weighting when post-stratifying to match adult population or Internet-using adult population, for those wave countries where the latter are available. Both design effects are computed for wave 1 with the demographic completion type for knowing a positive case.*

Finally, the weights were clipped (i.e., trimmed, Winsorized) from below and above to control their variance and especially to reduce sensitivity to a few samples with very large weights. In particular, Facebook trimmed the weights within each country at 10 times above and 30 times below their (untrimmed) means for that country; then, because of possible mismatch between the country associated with a respondent in Facebook data and that from the survey data, MIT made further adjustments to the weights within each country. Specifically, MIT has two ways of identifying each participant's country: (i) the respondent's self-reported country in the demographics part of the survey and (ii) the GeoIP location data that MIT obtains from Qualtrics for each respondent. The Facebook team has their own way of determining each participant's country using their internal data which per our legal agreements is not shared with MIT. In addition to providing a weight for each survey respondent, the Facebook team also provides an indicator variable of whether the weight for that respondent has been clipped or not. Subsequently, the MIT team compares each respondent's weight with other respondents that have the same reported or GeoIP-identified country. If a participant's weight is larger than the level at which Facebook has clipped the weights for that country from above (inferred from the clipping indicators), then the MIT team determines that the participant's country is misidentified and such participants' weights are subsequently reset to zero (removed from the sample). Although such misidentified cases happen very rarely (a few such cases have been observed thus far), this correction is important because such large weights could substantially bias the survey results.

Given the final weight w_i for each respondent i, we can compute the design effect and effective sample size. First, one can compute these without reference to a particular outcome:

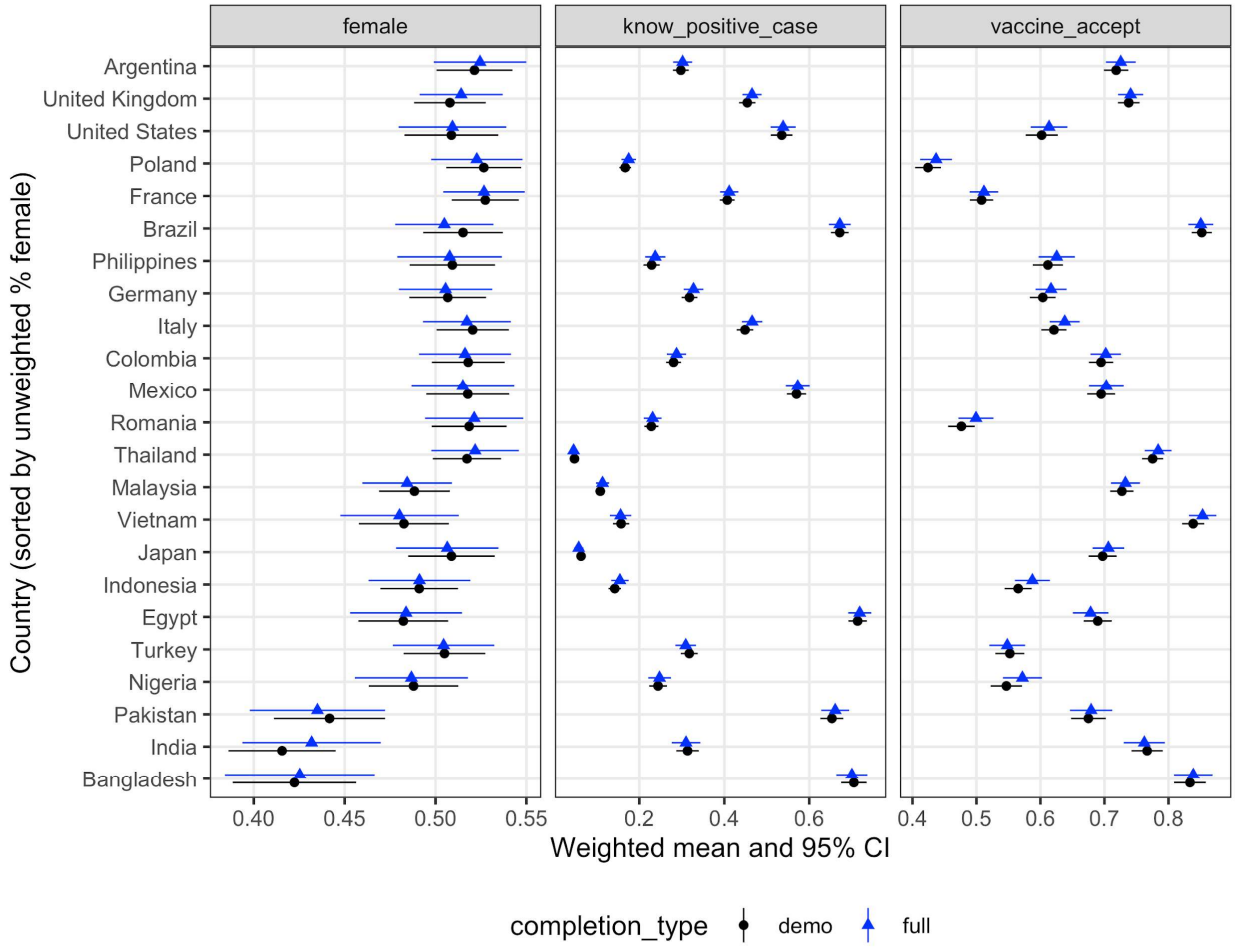
$$(Kish)\ design\ effect\ = \frac{n\ \sum_{i=1}^{n}\ (w_i)^{\ 2}}{(\sum_{i=1}^{n}\ w_i)^2}, \qquad \text{(A.1)}$$

$$(Kish)\ effective\ sample\ size = \frac{(\sum_{i=1}^{n}\ w_i)^2}{\sum_{i=1}^{n}\ (w_i)^{\ 2}}, \qquad \text{(A.2)}$$

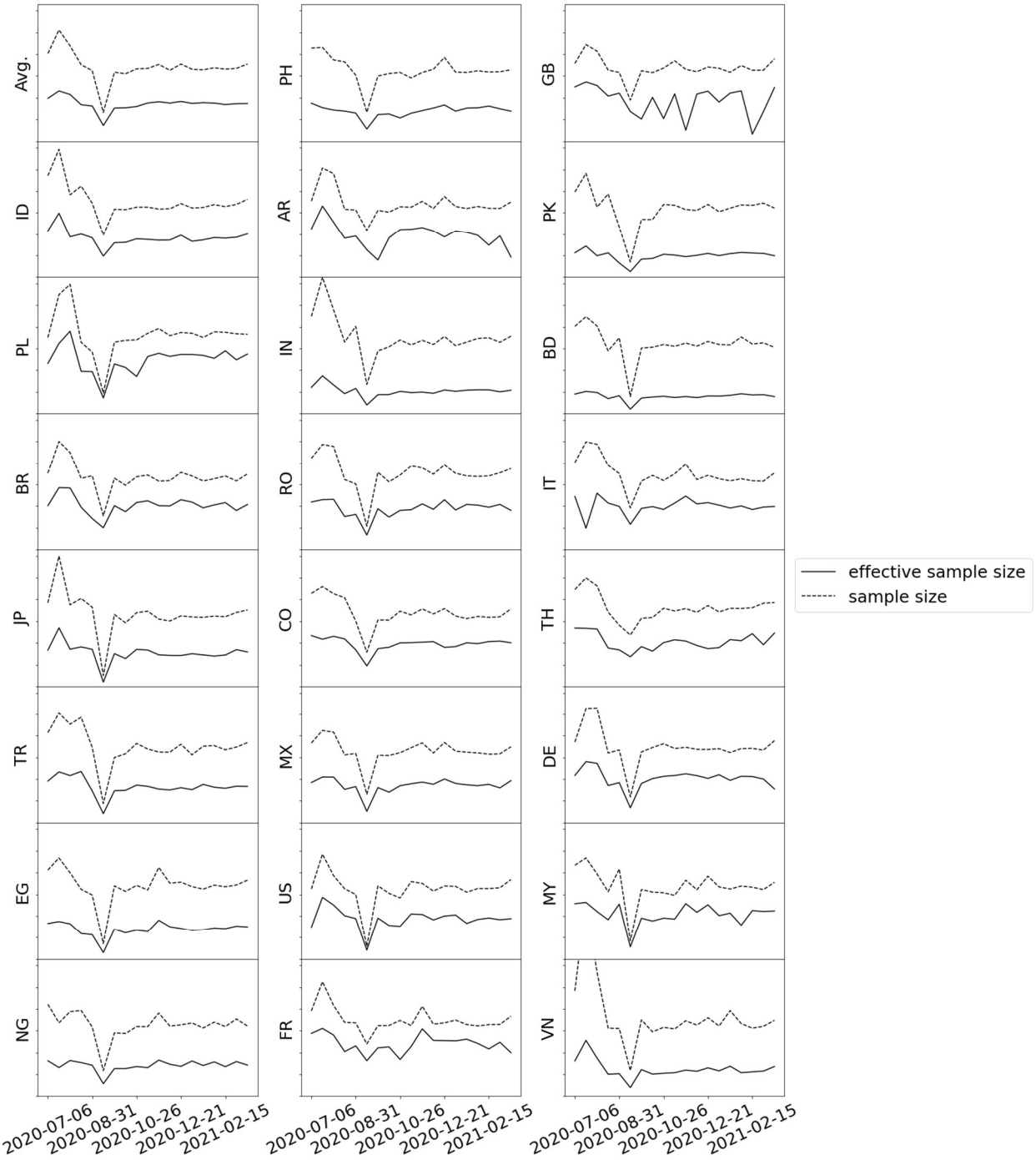
where n is the total number of completed survey responses. These formulas were used by the Facebook team to benchmark the design effects as they did not have access to the outcome data (recall that only random respondent IDs and completion indicators were sent from MIT to Facebook). On the other hand, MIT can additionally compute design effects and effective sample sizes for each outcome, accounting for the correlation between the outcome and the weights. Then the design effect is estimated using the ratio between the variance of the weighted estimator and an unweighted estimator using an equality probability sample; this can also account for further changes in missingness for that particular item, which can be assumed to be missing unconditionally (completely) at random. This is what is reported in Supplementary Information A Figures 1 and 3.

Internal consistency of the non-response models

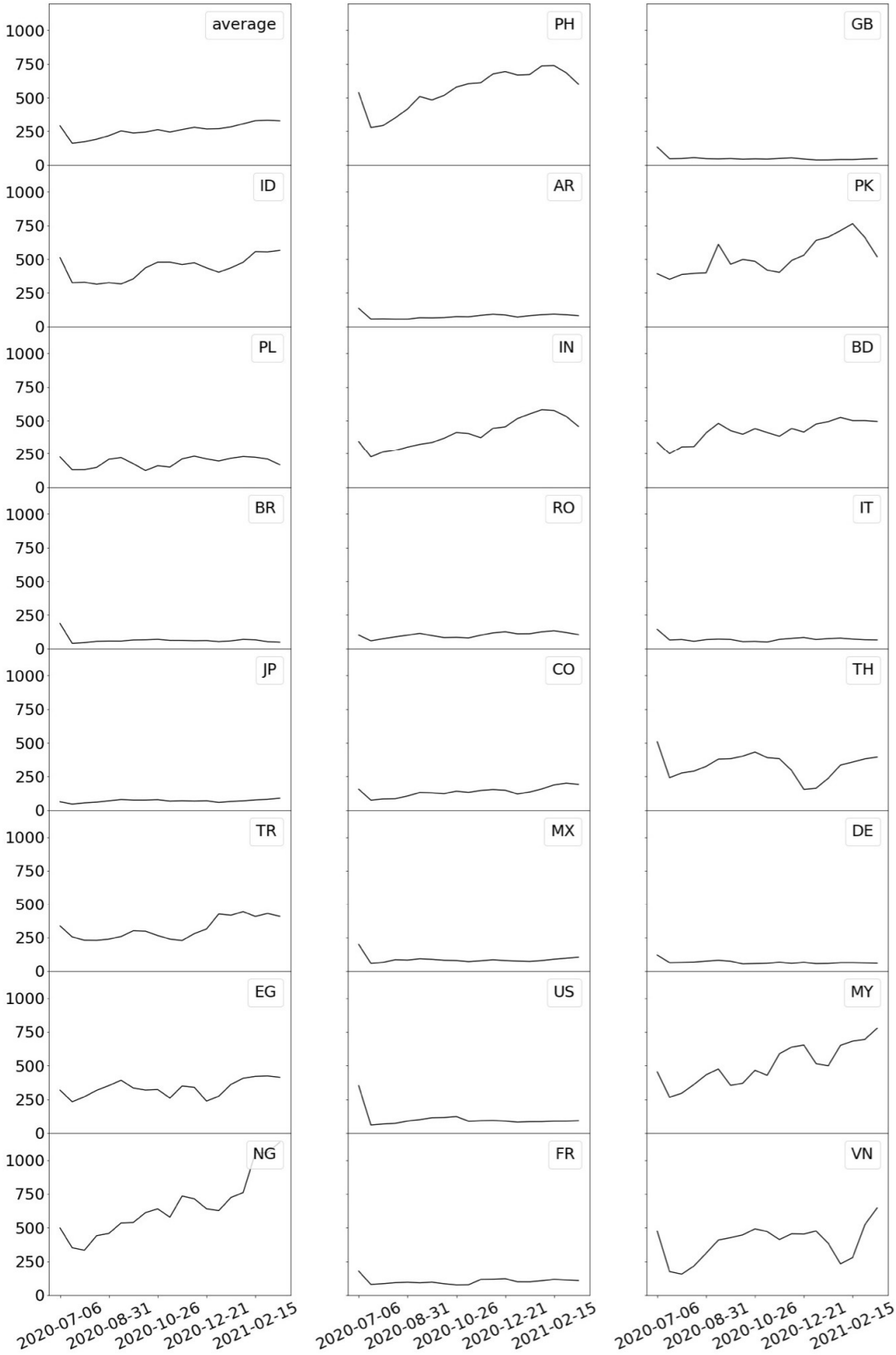
Because of the creation of weights for two different completion types, it is possible to test some observable implications of the assumptions of the non-response model (e.g., whether someone responds is as-good-as-random random conditional on the observables used in the nonresponse model above). In particular, for the questions in the initial blocks of the survey, estimation using either the demographic completion type or full survey completion type should yield very similar answers. Analysis of two substantive questions suggests that these observable implications of this assumption are not egregiously violated (Supplementary Information A Figure 4).



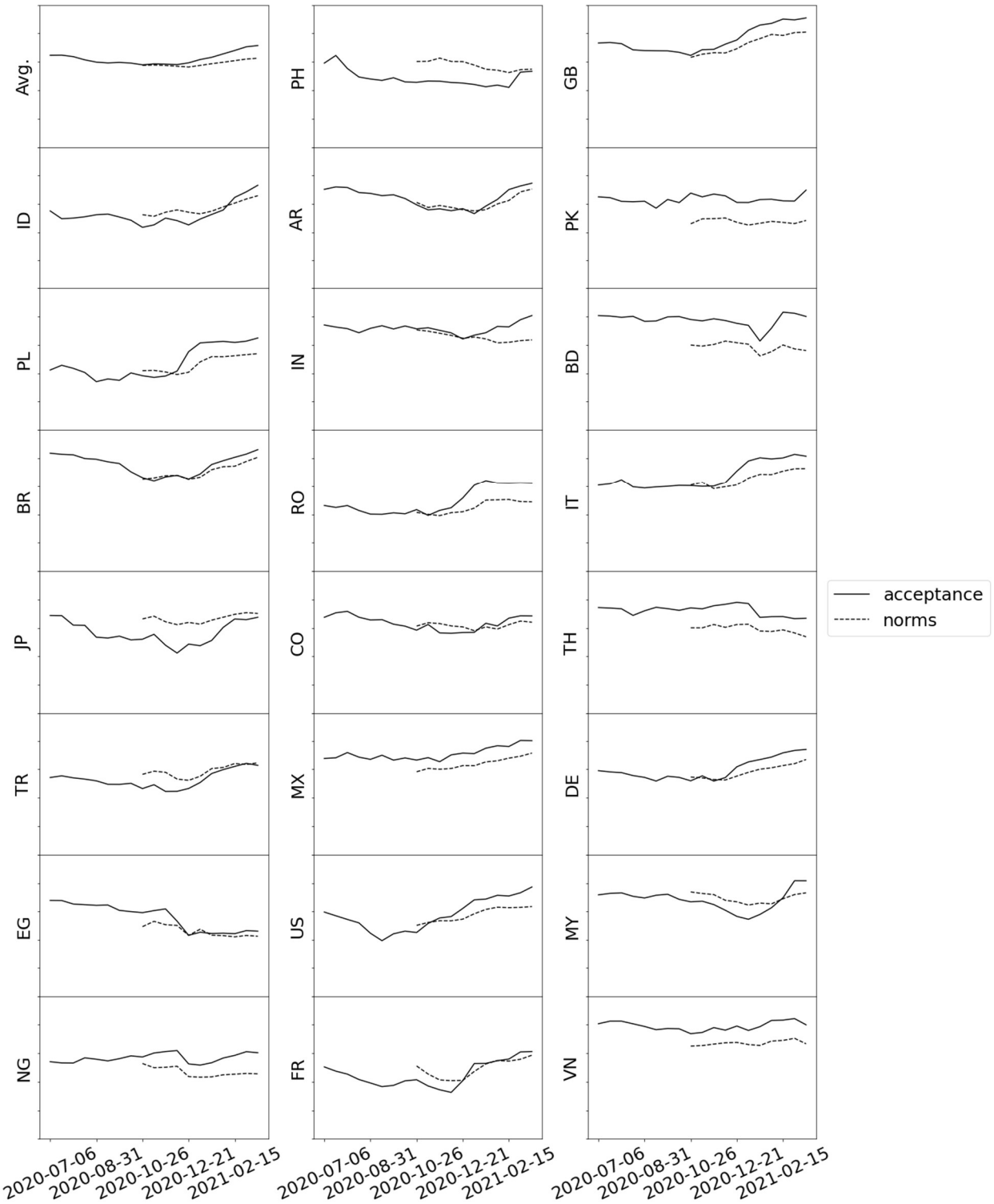
Supplementary Information A Figure 4. *Comparison of weighted estimates of proportions using the demographic completion and full survey completion weights for wave 1. Under conditional ignorability of nonresponse, these should be the same in large samples. Data are presented as weighted mean values, error bars are 95% confidence intervals, and n=88,684.*



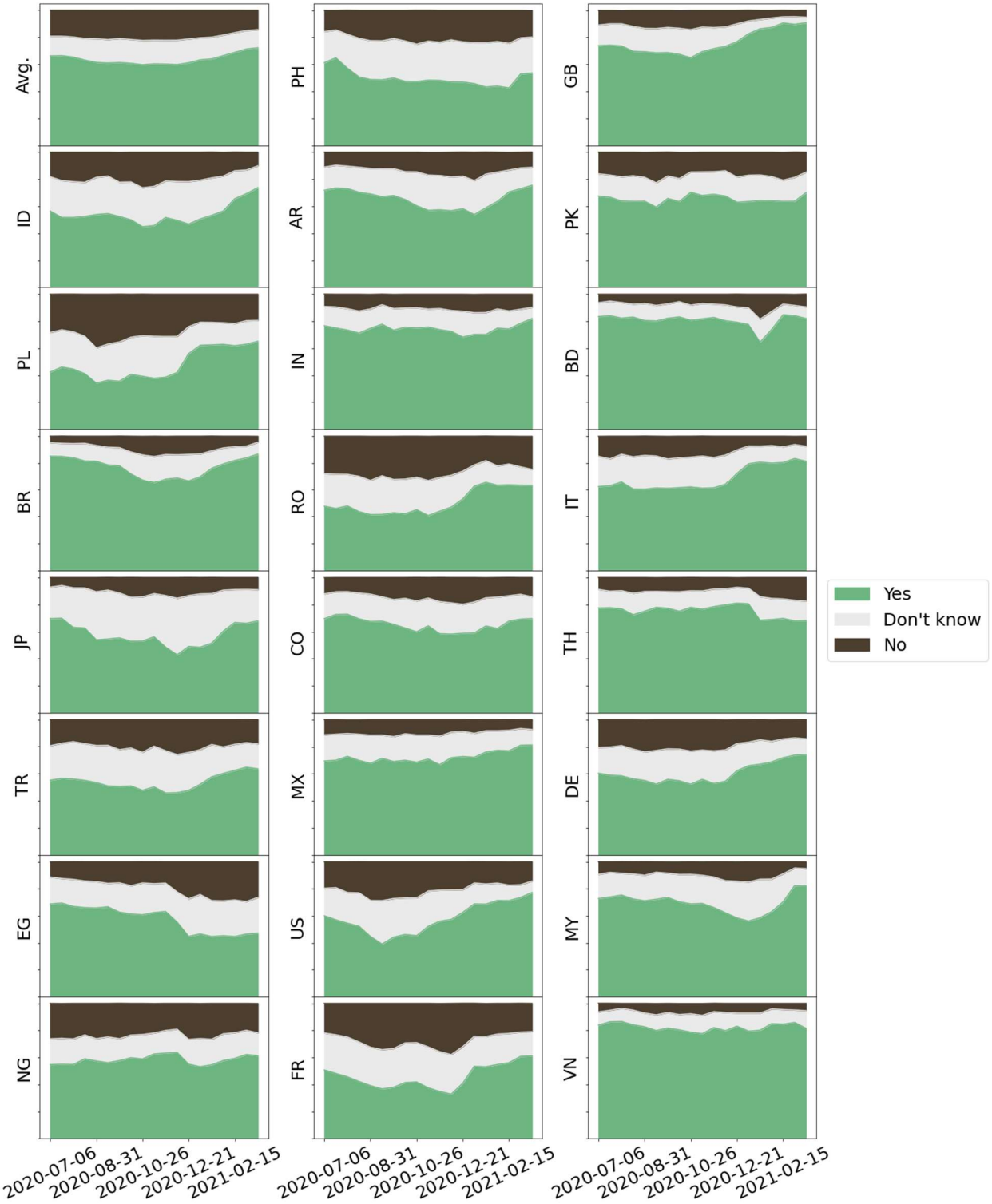
Supplementary Information A Figure 5. *Sample size and effective sample size for the 23 wave countries.*



Supplementary Information A Figure 6. *Number of impressions per response for the 23 wave countries.*



Supplementary Information A Figure 7. *Vaccine acceptance over time for all the wave countries in our sample. The plots show the difference between vaccine acceptance and vaccine norms.*



Supplementary Information A Figure 8. *Distribution of responses for the vaccine acceptance question for the 23 wave countries.*

Supplementary Information A Table 1. *Most popular languages by country. This table shows the most popular two languages for each country. In parenthesis is the unweighted share of completed surveys that each language comprises. The translations were completed by professional translators and, when possible, translations were verified by our team with native speakers to ensure the translations were of high quality.*

Country	First	Second	Country	First	Second
Afghanistan	FA (48.4%)	EN (33.8%)	Mongolia	EN (53.9%)	MN (24.7%)
Algeria	FR (49.6%)	AR (46.3%)	Morocco	FR (53.2%)	AR (36.5%)
Angola	PT (83.3%)	PT-BR (9.3%)	Mozambique	PT (80.9%)	PT-BR (10.1%)
Argentina	ES (83.4%)	ES-ES (15.9%)	Myanmar	MY (66.5%)	EN (23.3%)
Australia	EN (51.5%)	EN-GB (46.2%)	Nepal	EN (51.7%)	EN-GB (43.9%)
Azerbaijan	RU (47.4%)	TR (25.5%)	Netherlands	NL (87.9%)	EN-GB (4.2%)
Bangladesh	EN (38.9%)	EN-GB (38.9%)	Nigeria	EN (75.4%)	EN-GB (24.3%)
Bolivia	ES (84.0%)	ES-ES (14.3%)	Pakistan	EN (50.7%)	EN-GB (38.6%)
Brazil	PT-BR (97.9%)	PT (1.0%)	Peru	ES (88.1%)	ES-ES (10.4%)
Cambodia	EN (60.1%)	KM (14.7%)	Philippines	EN (85.7%)	EN-GB (11.0%)
Cameroon	FR (79.4%)	EN (15.8%)	Poland	PL (95.5%)	RU (1.6%)
Canada	EN (75.3%)	FR (15.2%)	Portugal	PT (92.8%)	PT-BR (2.1%)
Chile	ES (91.6%)	ES-ES (7.0%)	Romania	RO (83.7%)	EN (6.7%)
Colombia	ES (88.6%)	ES-ES (9.4%)	Senegal	FR (94.0%)	EN (2.4%)
Cote d'Ivoire	FR (96.9%)	EN (1.4%)	Singapore	EN-GB (63.3%)	EN (26.2%)
Ecuador	ES (84.7%)	ES-ES (12.7%)	South Africa	EN (71.3%)	EN-GB (27.7%)
Egypt	AR (78.7%)	EN (14.7%)	South Korea	KO (91.5%)	EN (4.2%)
Estonia	RU (41.3%)	EN-GB (29.3%)	Spain	ES-ES (88.5%)	ES (4.5%)
France	FR (94.5%)	EN-GB (1.4%)	Sri Lanka	EN-GB (65.1%)	EN (31.4%)
Georgia	RU (48.5%)	EN (24.5%)	Sudan	AR (91.8%)	EN (5.5%)
Germany	DE (89.1%)	EN (2.1%)	Taiwan	ZH-T (95.3%)	EN (2.5%)
Ghana	EN (64.1%)	EN-GB (34.9%)	Tanzania	EN (44.8%)	EN-GB (31.4%)
Guatemala	ES (89.6%)	ES-ES (7.3%)	Thailand	TH (90.6%)	EN (5.7%)
Honduras	ES (86.1%)	ES-ES (9.0%)	Trinidad & Tobago	EN (71.1%)	EN-GB (26.4%)
India	EN (44.3%)	EN-GB (33.9%)	Turkey	TR (85.7%)	AR (9.4%)
Indonesia	ID (92.9%)	EN (5.3%)	Uganda	EN (72.4%)	EN-GB (26.4%)
Iraq	AR (92.1%)	EN (5.2%)	Ukraine	RU (89.8%)	UK (5.8%)
Italy	IT (96.7%)	EN-GB (0.8%)	UAE	EN (46.9%)	EN-GB (28.9%)
Jamaica	EN (77.0%)	EN-GB (21.9%)	United Kingdom	EN-GB (92.0%)	EN (5.5%)
Japan	JA (96.3%)	EN (1.8%)	United States	EN (94.8%)	ES (3.0%)
Kazakhstan	RU (94.4%)	KAZ (2.0%)	Uruguay	ES (84.2%)	ES-ES (15.0%)
Kenya	EN (63.2%)	EN-GB (35.8%)	Venezuela	ES (80.5%)	ES-ES (18.6%)
Malaysia	EN-GB (36.8%)	MS (26.2%)	Vietnam	VI (93.6%)	EN (4.5%)
Mexico	ES (93.7%)	ES-ES (3.8%)			

Supplementary Information A Table 2. *Demographics (unweighted) for the 67 countries. The values shown in each column are percentages.*

country	N	female	18-30	31-40	41-50	51-60	61-70	over 80	college	sec._school	grad	primary	< primary
AF	5615	6.6	58.4	23.4	9.3	4.2	1.6	1.5	51.5	8.7	30.3	5.0	4.5
AO	6444	29.7	30.1	34.7	19.3	11.5	3.5	0.7	60.8	26.5	10.7	1.3	0.7
AR	64688	63.0	23.2	22.3	20.3	17.6	11.6	4.9	33.0	49.6	6.3	10.6	0.5
AU	6168	58.1	17.2	17.0	17.3	20.3	17.4	10.7	45.0	34.4	19.2	1.2	0.2
AZ	4862	37.4	33.2	24.8	17.9	13.7	8.0	2.2	62.4	15.9	18.0	3.2	0.6
BD	61215	18.0	57.2	23.6	10.1	4.9	2.4	0.9	50.6	8.3	38.7	1.3	1.2
BO	6110	48.2	42.7	25.8	15.5	10.0	4.4	1.3	57.7	22.8	18.0	1.4	0.2
BR	63989	61.3	26.9	25.6	20.2	17.2	8.1	1.9	28.0	41.7	14.5	10.8	5.1
CA	6038	58.9	19.0	18.9	18.0	19.8	15.7	8.3	55.9	24.9	16.2	2.5	0.4
CI	6224	19.3	33.2	30.8	21.7	10.4	3.3	0.4	35.4	26.5	33.1	3.9	1.1
CL	6149	58.0	24.1	23.5	19.9	18.0	10.6	3.8	45.1	41.1	8.4	4.6	0.7
CM	6985	29.6	45.3	27.3	14.6	8.7	3.1	0.4	41.4	25.3	31.2	1.7	0.4
CO	64708	53.8	35.1	25.5	17.5	13.9	6.3	1.6	41.6	41.2	12.5	4.2	0.5
DE	66414	54.2	17.6	23.1	21.2	22.2	11.4	4.3	43.0	45.8	4.0	6.1	1.1
DZ	6377	24.4	30.3	30.8	17.7	12.0	6.9	1.8	42.9	29.5	24.3	2.6	0.8
EC	6319	49.0	43.4	23.8	15.8	10.8	4.7	1.3	47.4	38.0	10.0	4.2	0.4
EE	5017	61.5	30.5	29.2	19.4	12.2	6.9	1.9	47.9	29.9	19.6	2.5	0.1
EG	64541	29.4	38.1	30.2	16.3	9.3	4.4	1.3	62.0	21.4	14.6	1.6	0.4
ES	7159	60.0	18.9	22.4	23.0	20.8	10.7	4.1	36.8	39.3	12.4	10.7	0.7
FR	66703	58.7	21.0	18.0	18.9	19.2	15.0	7.8	23.7	38.4	34.1	3.5	0.3
GB	64120	61.1	16.5	18.7	19.7	21.9	15.3	7.8	51.1	27.2	20.9	0.6	0.2
GE	5710	52.5	30.1	22.2	21.6	16.4	7.3	2.0	60.5	10.5	27.3	1.0	0.6
GH	6486	24.9	47.3	32.7	11.1	5.1	2.7	0.7	51.2	28.0	18.9	1.4	0.5
GT	6535	48.7	47.4	24.8	14.8	8.1	3.5	1.3	45.5	38.9	9.2	5.8	0.6
HN	6115	53.3	40.5	26.6	15.7	11.0	4.8	1.2	44.0	39.7	6.7	8.7	0.9
ID	66821	34.6	33.5	28.1	21.1	13.0	3.4	0.6	58.0	28.8	8.8	3.8	0.7
IN	67157	19.0	48.1	27.4	12.1	6.7	3.7	1.5	50.3	11.0	35.7	1.8	1.2
IQ	6222	20.3	37.1	25.5	18.9	12.7	4.2	1.1	62.2	23.5	9.6	4.1	0.6
IT	66533	54.8	17.3	20.1	21.6	20.8	13.7	6.4	22.5	49.7	21.5	5.5	0.7
JM	5423	65.5	26.3	23.0	20.6	18.4	8.5	2.8	40.0	39.0	17.7	3.0	0.3
JP	63984	36.0	4.8	10.8	23.6	30.8	21.0	8.9	61.7	30.2	7.8	0.2	0.2
KE	7335	30.1	36.4	34.2	18.9	8.2	1.7	0.3	63.4	18.7	14.2	3.4	0.3
KH	5314	22.3	45.6	31.4	10.5	5.3	3.0	2.1	55.5	13.1	24.6	2.9	3.9
KR	7107	34.1	28.7	14.6	16.7	20.8	14.7	4.3	51.5	33.6	13.6	1.0	0.2
KZ	6782	56.5	12.4	28.1	28.2	21.6	8.3	1.4	67.1	18.6	13.6	0.5	0.2
LK	5534	27.7	39.5	27.4	14.6	9.4	5.9	2.9	53.2	16.9	28.0	1.2	0.6
MA	6727	28.8	36.5	25.6	14.3	12.6	8.3	2.3	39.2	24.1	31.4	4.0	1.2
MM	6243	27.5	44.8	26.2	14.8	8.4	3.1	1.4	46.9	22.2	19.8	8.4	2.7
MN	4100	51.5	45.0	29.8	14.8	7.5	2.3	0.3	56.0	9.2	31.8	1.3	1.7
MX	62592	52.9	38.4	24.7	17.6	12.4	5.5	1.4	59.0	26.1	12.5	2.1	0.3
MY	64169	42.3	29.6	27.5	20.4	13.6	6.8	1.8	44.8	37.4	13.2	3.5	1.1
MZ	7292	30.3	39.9	34.4	15.4	6.8	2.3	0.6	43.4	43.9	9.0	2.4	1.3
NG	62043	21.9	33.0	32.7	18.2	10.9	3.8	1.0	54.4	14.6	30.3	0.5	0.2
NL	7323	55.9	10.9	11.9	16.7	24.9	22.4	13.1	38.0	50.2	8.0	3.2	0.7
NP	6517	23.7	57.4	23.3	10.8	5.1	2.5	0.6	59.5	12.2	26.7	1.1	0.6
PE	6490	50.4	37.9	23.7	17.1	12.6	6.7	1.8	50.9	35.6	12.1	1.1	0.3
PH	62038	53.7	43.1	23.7	14.8	10.1	6.0	2.1	64.8	17.8	16.4	0.7	0.3
PK	60324	19.6	53.8	24.6	10.2	5.6	3.0	1.5	52.6	7.6	36.8	1.5	1.6
PL	69165	57.1	25.0	20.6	18.4	14.1	15.3	6.5	39.8	46.8	8.7	4.5	0.3
PT	6392	59.2	18.0	20.8	25.9	19.2	11.5	4.6	30.7	51.4	11.1	5.8	0.9
RO	67238	51.1	21.7	21.6	20.6	18.5	13.3	4.1	40.2	34.2	21.5	3.7	0.4
SD	6738	24.8	48.1	28.1	13.7	6.8	2.2	0.6	67.4	16.5	14.1	1.6	0.4
SG	5779	40.5	21.5	27.7	21.4	16.2	9.3	3.9	50.7	23.7	22.4	2.6	0.5
SN	4751	27.8	35.9	24.1	16.6	12.8	7.9	2.1	30.8	28.2	35.5	4.1	1.4
TH	68700	44.6	18.3	23.6	25.4	20.7	9.7	2.1	46.0	31.3	13.9	8.0	0.7
TR	66859	26.2	21.7	26.9	23.4	16.4	8.8	2.6	38.1	32.6	8.4	19.0	1.9
TT	6655	61.1	20.7	27.7	20.5	18.1	9.4	3.4	40.2	41.2	13.6	4.8	0.2
TW	4856	45.5	24.2	25.6	20.9	16.0	10.4	2.9	60.9	21.6	16.2	1.1	0.2
TZ	5620	18.1	41.5	31.8	14.9	7.2	3.3	0.9	59.9	17.1	18.1	4.3	0.5
UA	6396	62.0	25.2	30.9	21.5	13.8	7.1	1.4	64.0	12.6	23.1	0.2	0.1
UG	7387	25.5	50.2	29.9	12.9	5.2	1.5	0.2	54.5	21.4	22.4	1.3	0.4
AE	6016	32.0	28.8	37.4	20.1	9.6	2.9	0.7	56.9	17.5	23.3	1.5	0.8
US	61632	63.3	12.5	17.8	18.3	19.7	19.1	12.4	52.0	18.8	24.1	4.5	0.6
UY	6189	68.8	18.5	18.6	20.8	21.3	15.1	5.5	26.4	53.0	5.8	14.1	0.6
VE	7382	50.3	21.0	19.2	21.0	22.7	12.9	3.1	49.5	34.3	12.4	3.6	0.3
VN	70233	41.3	52.7	25.0	11.3	6.4	3.6	0.7	64.0	28.2	6.4	0.9	0.6
ZA	6968	58.2	25.5	26.7	20.3	15.4	8.2	3.6	50.3	29.7	19.0	0.8	0.2

Supplementary Information A Table 3. *Demographics (weighted) for the 67 countries. The values shown in each column are percentages.*

country	N	female	18-30	31-40	41-50	51-60	61-70	over 80	college	sec._school	grad	primary	< primary
AF	5615	32.8	63.9	13.2	9.9	6.8	2.4	2.4	46.3	10.1	29.2	6.6	6.6
AO	6444	49.4	43.5	26.0	15.5	10.8	3.2	0.7	56.1	31.8	8.4	1.8	1.1
AR	64688	51.6	29.2	19.9	16.9	14.1	12.7	7.1	27.4	52.6	4.9	13.7	1.0
AU	6168	50.3	21.7	17.7	16.6	17.9	14.5	11.3	43.5	37.1	17.4	1.4	0.3
AZ	4862	51.5	29.3	20.8	17.9	16.5	12.2	3.0	62.1	18.7	14.4	3.3	0.8
BD	61215	40.6	48.5	18.2	13.3	11.0	5.7	2.2	47.9	10.2	36.6	2.2	2.3
BO	6110	49.8	37.7	21.1	14.8	14.2	8.4	3.4	53.5	28.1	15.0	2.6	0.2
BR	63989	51.3	28.9	21.3	17.9	15.9	11.8	4.2	23.4	44.9	10.4	13.8	7.2
CA	6038	50.9	20.7	16.4	16.7	18.6	16.4	11.1	53.4	26.8	15.4	3.3	0.5
CI	6224	45.1	43.8	25.0	16.2	10.3	3.9	0.4	35.6	31.0	28.2	3.3	1.2
CL	6149	50.6	27.0	19.5	17.7	16.3	13.2	6.2	39.3	46.4	6.5	6.3	0.9
CM	6985	48.0	47.4	24.6	13.4	10.1	3.5	0.5	40.9	28.7	27.0	1.9	0.5
CO	64708	51.3	32.5	20.3	17.0	16.0	10.5	3.6	34.1	48.5	9.0	7.2	0.8
DE	66414	50.5	18.1	15.5	16.9	19.7	18.7	11.0	39.2	45.1	3.9	9.4	1.2
DZ	6377	47.1	34.8	22.9	15.9	14.9	8.5	2.5	41.4	30.0	24.0	2.8	1.0
EC	6319	49.8	36.0	20.3	16.3	15.1	8.5	3.4	39.0	45.2	7.3	7.3	0.7
EE	5017	53.4	19.6	18.4	19.4	15.3	18.5	8.7	47.3	31.8	18.0	2.2	0.1
EG	64541	47.8	37.6	23.1	16.1	12.8	7.6	2.3	58.9	24.4	13.2	2.1	0.6
ES	7159	51.0	16.8	16.0	20.4	20.2	17.3	9.2	34.8	40.0	10.3	13.3	0.9
FR	66703	52.3	19.8	14.6	16.9	18.0	18.0	12.5	22.3	41.4	30.1	5.1	0.4
GB	64120	50.6	20.3	16.8	16.6	17.5	16.5	11.8	50.4	29.6	18.6	0.7	0.2
GE	5710	52.7	24.2	16.1	19.7	18.3	15.4	6.1	62.9	14.7	18.7	1.7	1.0
GH	6486	47.3	48.4	24.9	11.9	9.7	4.2	0.6	49.3	31.3	16.5	1.8	0.7
GT	6535	51.1	44.8	22.1	13.6	10.1	6.0	3.1	35.8	44.7	6.7	11.2	1.0
HN	6115	50.4	42.1	22.0	13.5	12.6	7.4	2.2	35.7	45.0	4.8	12.5	1.5
ID	66821	47.7	33.8	22.8	19.7	16.5	5.5	1.4	53.1	30.4	7.8	4.3	0.8
IN	67157	42.1	41.5	20.6	14.2	12.2	7.6	3.4	48.7	13.9	32.2	2.7	1.8
IQ	6222	47.4	45.6	20.4	15.6	12.0	4.8	1.2	60.9	24.9	8.2	4.3	0.8
IT	66533	51.6	16.3	14.0	18.5	19.2	19.3	12.5	20.9	52.4	17.3	7.7	1.2
JM	5423	50.3	32.6	18.8	17.6	15.5	10.6	4.4	37.2	41.5	15.8	3.9	0.3
JP	63984	50.9	12.3	15.0	19.4	16.2	21.9	15.2	59.7	32.5	6.8	0.4	0.2
KE	7335	48.8	46.5	24.0	17.0	10.0	1.9	0.1	60.2	24.0	10.7	4.1	0.4
KH	5314	39.4	43.3	21.3	10.8	9.4	7.4	4.3	48.4	16.4	21.1	4.5	6.0
KR	7107	49.2	22.9	14.8	22.4	17.1	15.8	7.1	51.3	34.0	12.6	1.3	0.4
KZ	6782	52.8	22.0	24.6	22.0	16.6	11.3	3.3	65.5	22.4	10.5	0.4	0.3
LK	5534	50.4	32.7	16.3	15.6	16.7	11.8	6.5	52.8	19.5	25.0	1.4	0.6
MA	6727	48.6	35.2	20.6	13.5	16.6	10.7	3.1	37.0	30.4	23.8	5.7	2.0
MM	6243	41.1	37.9	17.0	17.3	15.7	6.9	2.7	43.3	24.1	17.6	9.4	3.6
MN	4100	50.1	38.2	24.7	16.8	14.4	5.1	0.4	52.5	15.5	25.1	2.3	3.0
MX	62592	51.4	34.5	20.0	18.2	14.9	9.2	3.1	49.5	35.3	9.5	4.3	0.6
MY	64169	47.7	32.6	21.7	18.4	14.1	9.5	3.3	40.3	42.1	11.0	4.4	1.5
MZ	7292	50.7	46.4	26.7	13.9	9.0	2.8	0.7	35.3	51.1	7.9	3.5	1.5
NG	62043	47.3	44.4	24.4	15.0	11.6	3.5	0.8	53.8	19.1	25.8	0.5	0.3
NL	7323	50.0	18.5	16.0	16.7	18.4	17.2	13.2	39.2	48.3	7.7	3.8	0.7
NP	6517	49.9	51.9	19.3	13.3	9.2	4.7	1.1	56.1	14.4	24.2	3.1	1.6
PE	6490	49.5	32.5	20.8	17.2	14.5	10.9	3.9	43.8	43.3	9.7	2.1	0.5
PH	62038	50.3	37.6	20.6	15.4	13.8	9.3	3.2	57.4	24.1	16.0	1.3	0.6
PK	60324	43.3	49.1	18.4	11.6	10.2	6.3	2.8	51.2	8.2	35.1	2.0	2.4
PL	69165	51.7	19.3	18.9	19.9	13.6	18.6	9.4	35.5	50.3	7.7	5.5	0.3
PT	6392	52.8	16.8	14.8	20.2	17.6	20.1	10.4	25.3	54.0	8.3	10.4	1.6
RO	67238	51.0	17.8	16.6	19.0	18.1	20.0	8.2	35.2	40.9	16.9	5.7	0.6
SD	6738	48.0	47.8	20.9	15.4	10.8	3.8	0.8	66.0	16.8	14.3	1.8	0.4
SG	5779	46.6	21.1	19.1	20.9	19.0	13.4	6.4	45.1	32.6	16.9	4.2	0.8
SN	4751	50.3	46.2	21.6	12.5	11.5	6.2	1.4	29.9	32.9	29.6	4.7	1.9
TH	68700	51.0	18.4	16.1	22.8	22.7	15.3	4.4	41.2	34.4	12.1	10.5	1.0
TR	66859	49.7	28.7	21.3	20.4	14.3	10.9	4.2	34.8	33.9	6.7	21.9	2.3
TT	6655	50.7	23.8	21.7	18.0	18.1	12.4	5.8	35.3	46.4	10.9	6.3	0.4
TW	4856	50.7	20.1	17.7	20.1	19.4	16.6	5.9	57.0	28.3	11.5	1.8	0.4
TZ	5620	45.9	49.0	24.7	13.5	8.7	3.0	0.8	58.5	19.8	14.5	5.7	1.0
UA	6396	55.0	18.9	20.6	20.2	16.4	17.8	6.0	64.3	18.9	16.2	0.2	0.1
UG	7387	50.4	56.5	21.4	12.4	7.7	1.7	0.2	53.8	24.6	19.4	1.3	0.5
AE	6016	27.7	35.9	32.8	17.6	9.8	2.8	0.5	53.6	23.4	17.8	2.3	2.0
US	61632	51.5	21.0	17.4	16.9	17.5	15.5	11.6	49.9	21.3	21.2	6.2	0.9
UY	6189	53.1	24.8	17.3	16.7	16.3	16.8	8.0	23.6	53.7	5.0	16.6	0.8
VE	7382	51.2	29.8	20.8	19.3	15.5	11.1	3.3	46.1	39.2	9.3	4.6	0.4
VN	70233	47.6	32.5	22.9	16.5	15.4	10.0	2.5	52.6	38.4	5.6	1.7	0.8
ZA	6968	51.3	35.2	24.7	18.8	12.5	6.0	2.6	45.1	37.8	15.5	1.0	0.1

Supplementary Information A: References

Little, Roderick J. "Post-stratification: A modeler's perspective." *Journal of the American Statistical Association* 88, np. 423 (1993): 1001-1012.

Little, Roderick J., and Sonya Vartivarian. "Does weighting for nonresponse increase the variance of survey means?." *Survey Methodology* 31, no. 2 (2005): 161-168.

Supplementary Information B: Data Dictionary

Missing Values

Data can be missing for a number of reasons, some missing is by design through randomization and other is due to selective answering and dropoff. For all questions, missing values are coded as follows.

- NULL: Null values indicate the question was not shown either due to randomization or because the respondent left the survey before this point.
- -1: The question was viewed but not answered and the respondent completed the block containing this question.
- -2: The question was viewed but not answered and the respondent did not complete the block containing this question.

Sample Code

Below are commands that can load the data in commonly used data analysis software. The data is a compressed tab-delimited text file.

Python (pandas)

```
import pandas as pd
df = pd.read_table('covid_survey_responses.txt.gz', sep='\t',
low_memory=False)
```

R

```
library(readr)
df = read_tsv(
      "covid_survey_responses.txt.gz"),
      col_types = cols(
            us_state = col_character(),
            india_state = col_character(),
            geoip_state = col_character(),
            wave = col_double(),
            weight_demo = col_double(),
            weight_full_survey = col_double(),
            trim_indicator_demo = col_integer(),
            trim_indicator_full_survey = col_integer(),
            weight_internet_demo = col_double(),
            weight_internet_full_survey = col_double(),
            trim_indicator_internet_demo = col_integer(),
            trim_indicator_internet_full_survey = col_integer()
            )
      )
```

Meta Data

Variable	Type	Description
id	string	Unique id assigned to a survey response
start_date	YYYY-MM-DD	Date survey was started
duration	integer	Duration of survey in seconds
language	string	Language code survey was taken in
country	string	Inferred country of residence (See notes below)
reported_country	string	Self-reported country of residence (See notes below)
geoip_country	string	Country of residence inferred from Qualtrics GeoIP (See notes below)
progress	integer	Integer representing share of survey complete, between 0 and 100.
survey_type	string	Survey version, either waves or snapshot
survey_version	string	One of v1, v2, v3, representing the iteration of the survey taken.
wave	int	Wave number if survey_type is waves, null otherwise
device_type	string	Device used to complete survey (desktop, mobile, other)
browser	string	Name of browser used to complete survey
demo_complete	bool	Indicator if the respondent answered all demographic questions not including location questions and had a non-null country
finished	bool	Indicator if the respondent reached the end of the survey
weight_[[completion type]]	float	Weight using respondents who complete [[completion type]] as an analytical sample and adult population as a target population
weight_internet_[[completion type]]	float	Weight using respondents who complete [[completion type]] as an analytical sample and adult internet users as a target population

trim_indicator	bool	Indicator if the respondent's weight was clipped by Facebook.

display_order	string	JSON string containing the order questions, answers, and blocks were displayed.
		
		{
		"block_order": {
		block name: block order
		}
		"question_order": {
		question id: question order within block. Only populated for questions that have a randomized order.
		}
		"block_completions": {
		block: Dictionary indicating if block was started and/or completed.
		}
		"last_finished_block": Last block completed in the survey
		"last_started_block": Last block started in the survey
		"answer_order": {
		question: Dictionary mapping question answers to display positions. Only populated for questions with randomization in answers.
		}
		}
		
		Note for roughly 600 responses the display order was improperly logged and will be null. For these responses, we are also unable to provide the full missingness codes. For these 600 responses, null implies the question was not seen and -1 implies the question was shown but not answered.

If either geoip_country or reported_country were not in the set of sampled countries, we report null for country. If self-reported country was present and in the sampled set, we infer country equal to the self-reported country. If a self-reported country was missing, or the self-reported country was not in the sampled set, we infer the country equal to the country from the GeoIP field. If the GeoIP country is missing or not in the sampled countries as well, then we do not infer a country and this field will be null.

Information Exposure

- `info_exposure_past_week` (string): In the past week, how much, if anything, have you heard or read about coronavirus (COVID-19)? [Nothing, A little, A moderate amount, A lot]
- `info_exposure_more_less_wanted` (string): In the past week, did you see more or less news than you wanted to see about coronavirus (COVID-19)? [Much more, More, About the right amount, Less, Much less]

Knowledge and Positive Cases

- `knowledge_existing_treatments` (string): Which of the following is correct? [There is a drug to treat COVID-19, There is a vaccine for COVID-19, There is both a drug for treatment and a vaccine for COVID-19, There is currently no drug treatment or vaccine for COVID-19, I am unsure which is correct]
- `know_positive_case` (string): Do you personally know someone who has tested positive for COVID-19? [Yes, No, Prefer not to say]

Vaccine and Healthcare

- `vaccine_accept` (string): If a vaccine for COVID-19 becomes available, would you choose to get vaccinated? [Yes, No, Don't know, I have already been vaccinated]
- `healthcare_avoid_contact` (string): In the past week, have you avoided contact with health care facilities or health care workers due to fear of exposure to COVID-19? [Yes, No]
- `healthcare_availability` (string): In the past week, have you been able to get an appointment with a healthcare worker when you needed one, whether related to COVID-19 or not? [Yes, No, I needed one and was not able, No, I did not need an appointment]
- `Flu_vaccine:` (string) Have you taken a flu vaccine this fall or do you plan to take one in the coming weeks? [Yes, No, Don’t Know]. This question was only fielded in North American countries.

Demographics

- `gender` (string): [Male, Female, Other]
- `age` (string): [Under 20, 20-30, 31-40, 41-50, 51-60, 61-70, 71-80, Over 80]
- `education` (string): What is the highest level of education you have completed? [Less than primary school, Primary school, Secondary school, College / university, Graduate school]
- `own_health` (string): In general, how would you rate your overall health? [Excellent, Very good, Good, Fair, Poor]
- `country` (string): In which country do you currently reside?
- `us_state` (string): In which state do you currently reside?
    - Only asked if country == United States of America
- `india_state` (string): In which state or union territory do you currently reside?

    - Only asked if country == India
- `density` (string): Which of these best describes the area where you are currently staying? [City, Town, Village or rural area]

Information Sources, Trust & Needs

- Information Medium: In the past week, from which of the following, if any, have you received news and information about COVID-19? Select all that apply. [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - `news_medium_online_sources`: Online sources (websites, apps, social media)
    - `news_medium_messaging_apps`: Messaging apps / SMS/ text messaging
    - `news_medium_newspapers`: Newspapers
    - `news_medium_television`: Television
    - `news_medium_radio`: Radio
- Information Sources: In the past week, from which of the following, if any, have you received news and information about COVID-19? Select all that apply. [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - `news_sources_local_health_workers`: Local health workers, clinics, and community organizations
    - `news_sources_scientists`: Scientists, doctors, and health experts
    - `news_sources_world_health_organization`: World Health Organization (WHO)
    - `news_sources_government_health_authorities`: Government health authorities or other officials
    - `news_sources_politicians`: Politicians
    - `news_sources_journalists`: Journalists
    - `news_sources_ordinary_people_i_know_personally`: Ordinary people I know personally
    - `news_sources_ordinary_people_i_dont_know_personally`: Ordinary people I don't know personally
- Information Medium Trust: How much do you trust each of the following as a source of COVID-19 news and information? [Do not trust, Somewhat trust, Trust]
    - `news_medium_trust_online_sources`: Online sources (websites, apps, social media)
    - `news_medium_trust_messaging_apps`: Messaging apps / SMS/ text messaging
    - `news_medium_trust_newspapers`: Newspapers
    - `news_medium_trust_television`: Television

    - news_medium_trust_radio: Radio
- Information Sources Trust: How much do you trust each of the following as a source of COVID-19 news and information? [Do not trust, Somewhat trust, Trust]
    - news_sources_trust_local_health_workers: Local health workers, clinics, and community organizations
    - news_sources_trust_scientists: Scientists, doctors, and health experts
    - news_sources_trust_world_health_organization: World Health Organization (WHO)
    - news_sources_trust_government_health_authorities: Government health authorities or other officials
    - news_sources_trust_politicians: Politicians
    - news_sources_trust_journalists: Journalists
    - news_sources_trust_ordinary_people_i_know_personally: Ordinary people I know personally
    - news_sources_trust_ordinary_people_i_do_not_know_personally: Ordinary people I don't know personally
- Information Demand: Which of the following aspects of COVID-19 do you have the most questions about? [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - information_demand_the_cause_of_the_disease: The cause of the disease
    - Information_demand_sy mptoms_and_risk_factors: Symptoms and risk factors
    - information_demand_treatment_of_the_disease: Treatment of the disease
    - information_demand_how_i_can_protect_myself: How I can protect myself
    - information_demand_immunity: Immunity
    - information_demand_vaccine: Scientific progress in development of a vaccine or treatment
    - information_demand_how_other_people_are_coping: How other people are coping
    - information_demand_caring_for_those_most_at_risk_of_covid: Caring for those most at risk of COVID-19
    - information_demand_education: How I can best take care of my children's school education
    - information_demand_differences_between_covid_and_other_dise ases: Differences between COVID-19 and other diseases (e.g. flu)
    - information_demand_the_evolution_of_the_pandemic_in: The evolution of the pandemic in [country selected]
    - information_demand_the_evolution_of_the_pandemic_globally: The evolution of the pandemic globally

    - information_demand_the_economic_impact_of_covid_to_me_personally: The economic impact of COVID-19 to me personally
    - information_demand_the_economic_impact_of_covid_in: The economic impact of COVID-19 in [country selected]
    - information_demand_how_to_maintain_my_mental_health_during_the_isolation: How to maintain my mental health during the isolation
    - information_demand_how_to_maintain_my_social_contact_despite_the_physical_distancing: How to maintain my social contact despite the physical distancing
    - information_demand_other_protection_measures_by_the_government_and_communities: Other protection measures by the government and communities

Basic Knowledge

- Knowledge Risk Groups: Which of the following types of people are at the highest risk of severe illness from COVID-19? Select all that apply. [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - knowledge_high_risk_groups_people_of_certain_religions: People of certain religions
    - knowledge_high_risk_groups_people_of_certain_ages: People of certain ages
    - knowledge_high_risk_groups_people_with_certain_medical_conditions: People with certain medical conditions
    - knowledge_high_risk_groups_people_with_certain_ethnic_backgrounds: People with certain ethnic backgrounds
    - knowledge_high_risk_groups_none_of_the_above: None of the above
- knowledge_spread: Which of the following best describes how COVID-19 spreads? (string) [Human contact, coughing or sneezing, Other, Dirt or pollution, Exposure to animals, Mosquito bites]
- Knowledge Symptoms: Which of the following can be symptoms of COVID-19? Please select as many as apply. [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - knowledge_symptoms_fever: Fever
    - knowledge_symptoms_cough: Cough
    - knowledge_symptoms_shortness_of_breath: Shortness of breath
    - knowledge_symptoms_sore_throat: Sore throat
    - knowledge_symptoms_runny_or_stuffy_nose: Runny or stuffy nose
    - knowledge_symptoms_muscle_or_body_aches: Muscle or body aches
    - knowledge_symptoms_headaches: Headaches
    - knowledge_symptoms_fatigue: Fatigue (tiredness)

    - knowledge_symptoms_diarrhea: Diarrhea
    - knowledge_symptoms_loss_of_taste_and_smell: Loss of taste and smell
    - knowledge_symptoms_none_of_these: None of these

Distancing Familiarity, Importance & Norms

- distancing_familiarity (string): Which of the following best describes your familiarity with the term “physical distancing” during the COVID-19 pandemic? [I have not heard of it, I have heard of it but do not know what it means, I have heard of it and have some idea of what it means, I have heard of it and know what it means]
- distancing_importance (string): How important do you think physical distancing is for slowing the spread of COVID-19? [Not at all important, Slightly important, Moderately important, Very important, Extremely Important]
    - This question was only shown to respondents with distancing_familiarity=I have heard of it and have some idea of what it means or distancing_familiarity=I have heard of it and know what it means
- Distancing Norms: Out of 100 people in your community, how many do you think do the following when they go out in public?
    - distancing_norms_maintain_a_distance_of_at_least_1_meter_from_others: Maintain a distance of at least 1 meter from others
    - distancing_norms_wear_a_face_mask_or_covering: Wear a face mask or covering
- norms_vaccine: Out of 100 people in your community, how many do you think would take a COVID-19 vaccine if it were made available?

Risk Perceptions and Locus of Control

- risk_community (string): How dangerous do you think the COVID-19 risk is to your community? [Not at all dangerous, Slightly dangerous, Moderately dangerous, Very dangerous, Extremely dangerous]
- risk_infection (string): How likely is it that someone of the same age as you in your community becomes sick from COVID-19? [Not at all likely, Slightly likely, Moderately likely, Very likely, Extremely likely]
- control_infection (string): Do you agree with this statement? "I have control over whether I will get COVID-19." [Strongly disagree, Somewhat disagree, Neither agree or disagree, Somewhat agree, Strongly agree]
- infection_severity (string): How serious would it be if you became infected with COVID-19? [Not at all serious, Somewhat serious, Very serious]

Prevention Behaviors in Practice

- prevention_distancing (string): How often are you able to stay at least 1 meter away from people not in your household? [Never, Rarely, Sometimes, Often, Always]

- `prevention_hand_washing` (string): When you clean your hands, how often are you able to clean your hands with soap or alcohol-based handrub? [Never, Rarely, Sometimes, Often, Always]
- `prevention_mask` (string): How often are you able to wear a mask or face covering when you are in public? [Never, Rarely, Sometimes, Often, Always] This question was only added starting in wave 3 on 8/4/2020 at 2:15PM ET.

Behavioral Measures Taken, Efficacy & Norms

- Preventative Measures Taken: What measures have you taken to prevent infection from COVID-19 in the past week? [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - `measures_taken_washing_hands`: Washing hands regularly using disinfectants or soap and water
    - `measures_taken_cover_coughs`: Covering mouth and nose when coughing or sneezing
    - `measures_taken_avoid_sick`: Avoiding close contact with anyone who has a fever and cough
    - `measures_taken_wearing_a_face_mask_or_covering`: Wearing a face mask or covering
    - `measures_taken_meter_distance`: Staying at least 1 meter away from other people when out in public
    - `measures_taken_avoid_touching_face`: Avoiding touching your eyes, nose, and mouth with unwashed hands
    - `measures_taken_taking_herbal_supplements`: Taking herbal supplements
    - `measures_taken_using_homeopathic_remedies`: Using homeopathic remedies
    - `measures_taken_caution_opening_mail`: Using caution when opening letters and packages
    - `measures_taken_getting_the_flu_vaccine`: Getting the flu vaccine
    - `measures_taken_eating_garlic`: Eating garlic, ginger, or lemon
    - `measures_taken_cleaning_or_disinfecting_surfaces`: Cleaning or disinfecting surfaces
    - `measures_taken_using_antibiotics`: Using antibiotics
    - `measures_taken_cleaning_or_disinfecting_a_mobile_phone`: Cleaning or disinfecting a mobile phone
    - `measures_taken_isolation`: Self-isolation
    - `measures_taken_none_of_these`: None of these
- `effect_hand_washing` (string): How effective is handwashing for preventing the spread of COVID-19? [Extremely effective, Very effective, Moderately effective, Slightly effective, Not effective at all]

- `effect_mask` (string): How effective is wearing a face mask for preventing the spread of COVID-19? [Extremely effective, Very effective, Moderately effective, Slightly effective, Not effective at all]
- `country_management` (string): How well is COVID-19 being handled in [country selected]? [Extremely well, Very well, Moderately well, Slightly well, Not well at all]
- `community_management` (string): How well is your community handling COVID-19? [Extremely well, Very well, Moderately well, Slightly well, Not well at all]
- `community_action_importance` (string): How important is it for you to take actions to prevent the spread of COVID-19 in your community? [Extremely important, Very important, Moderately important, Slightly important, Not important at all]
- `community_action_norms` (string): How important do other people in your community think it is to take actions to prevent the spread of COVID-19? [Extremely important, Very important, Moderately important, Slightly important, Not important at all]
- Community Norms: Out of 100 people in your community, how many do you think believe the following because of COVID-19? (Default slider at 50)
    - `community_norms_social_gatherings_should_be_cancelled`: Social gatherings should be canceled
    - `community_norms_maintain_1_meter`: People should stay at least 1 meter away from other people when out in public
    - `community_norms_mask`: People should wear a face mask or covering when out in public
    - `community_norms_close_retail`: Non-essential retail shops should be closed
    - `community_norms_a_general_curfew_should_be_enforced`: A general curfew should be enforced
    - `community_norms_travel_between_countries_should_be_restricted`: Travel between countries should be restricted
    - `community_norms_travel_within_the_country_should_be_restricted`: Travel within the country should be restricted

Employment and Work

- `employed_2020` (string): Have you been working at some point in 2020? [Yes, No]
- `work_changes` (string): How has your work changed since January 31, 2020? [No longer employed, Newly employed, Employed in a different business, Role substantially changed with same business, Little change]
- `work_type` (string): Which best way to describe the work you do most of the time to make money? [I work for my own business, I work in a business that is run by my household or family member, I work in a business that is run by someone else, I work for the government, Other]
- `work_industry` (string): What is the main activity of the business or organization in which you were working before February 2020? [Agriculture, Buying and selling, Construction, Education, Electricity/water/gas/waste, Financial/insurance/real estate

services, Health, Manufacturing, Mining, Personal services, Professional/scientific/technical activities, Public administration,Tourism, Transportation, Other]

Intentions to Visit Locations

- Open Locations: Which of the following businesses, locations, or events are currently open and operating near you? [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - `locations_open_restaurants`: Restaurants
    - `locations_open_parks_and_beaches`: Parks and beaches
    - `locations_open_retail_shops`: Retail shops / shopping malls
    - `locations_open_schools`: Schools
    - `locations_open_performances_and_sporting_events`: Performances and sporting events
    - `locations_open_places_of_employment`: Places of employment
    - `locations_open_places_of_worship`: Places of worship
    - `locations_open_health_care_facilities`: Health care facilities
- Locations Would Attend: Which of the following businesses, locations, or events would you visit or attend in the coming two weeks if they were operating at full capacity? [1=option selected, 0=option shown but not selected, and another option was selected. Note: if all values have -1 or -2, this question was viewed and the options were presented, but no options were selected.]
    - `locations_would_attend_restaurants`: Restaurants
    - `locations_would_attend_parks_and_beaches`: Parks and beaches
    - `locations_would_attend_retail_shops`: Retail shops / shopping malls
    - `locations_would_attend_schools`: Schools
    - `locations_would_attend_performances_and_sporting_events`: Performances and sporting events
    - `locations_would_attend_places_of_employment`: Places of employment
    - `locations_would_attend_places_of_worship`: Places of worship
    - `locations_would_attend_health_care_facilities`: Health care facilities
- Preventative Measures: Compared to a [location] with no precautions at all, are you more or less likely to visit a restaurant with the following precautions? [More likely to visit, Doesn't affect my actions, Less likely to visit]
    - Asked for the following locations: restaurant, healthcare facility, place of worship, and retail shop (`location` could be `restaurants`, `worship`, `health` or `retail`)
    - `prevent_measures_[location]_operating_at_limited_capacity`: Operating at limited capacity

    - `prevent_measures_[location]_everyone_has_to_wear_a_mask`: Everyone has to wear a mask
    - `prevent_measures_[location]_everyone_has_to_pass_a_temperature_check`: Everyone has to pass a temperature check
    - `prevent_measures_[location]_has_additional_hand_washing_stations`: Has additional hand washing stations

Travel

- `travel_restrictions` (string): Have you refrained from traveling between cities because of restrictions on movement due to COVID-19? [Yes, No — I planned to travel and kept plans, No — I did not plan to travel]
- `travel_concerns` (string): Have you refrained from traveling between cities due to fears regarding COVID-19? [Yes, No — I planned to travel and kept plans, No — I did not plan to travel]

Future Actions

- `future_masks` (string): Over the next two weeks, how likely are you to wear a mask when in public? [Always, Almost always, When convenient, Rarely, Never]
- `future_distancing` (string): Over the next two weeks, how likely are you to maintain a distance of at least 1 meter from others when in public? [Always, Almost always, When convenient, Rarely, Never]
- `future_vaccine` (string): If a vaccine against COVID-19 infection is available in the market, would you take it? [Yes, definitely; Probably; Unsure; Probably not; No, definitely not]
    - Only shown if `vaccine_accept != "I have already been vaccinated"]`
- Would you be more or less likely to take a vaccine against COVID-19 infection if it were made available and recommended to you by each of the following [More likely, Less likely, No impact]
    - future_vaccine_friends_and_family (string): Friends and family
    - future_vaccine_local_health_workers (string): Local health workers
    - future_vaccine_world_health_organization (string): WHO
    - future_vaccine_government_health_officials (string): Government health officials
    - future_vaccine_politicians (string): Politicians

Survey Information

Starting in wave 9 of the survey, we added an information block that shared an example of the information that was being learned from the survey with respondents. The information was the (weighted) average number of respondents saying they practice (or would accept for vaccines) a preventative behavior. Respondents self reporting they were in a wave country were randomly shown one of three behaviors (vaccines, masks, or distancing) and were told

> Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that [[country share]]% of people in your country say they [[broad or narrow]] [[preventative behavior]].

The blanks were filled in with one randomly chosen preventative behavior, a broad or narrow definition of the activity, and the true share of responses for the respondent's country. The three behaviors were vaccine acceptance, mask wearing, and social distancing. In the broad condition, we used a more inclusive definition of the preventative behavior and the narrow condition used a more restrictive definition. For example, for vaccine acceptance we either reported the share of people responding “Yes” or the share of people responding “Yes” or "Don't know” to the baseline vaccine acceptance question.

- `eligible_for_information` (int): An indicator if the respondent was eligible for the information. This includes all individuals with survey_information_provided == 1 and additional individuals who dropped off before the end of the tracking questions.
- `survey_information_provided` (int): An indicator if the information was provided, or the information was going to be provided but the respondent stopped the survey before reaching the information block (but finished the tracking questions).
- `survey_information_behavior` (string): A string indicating the behavior the information pertained to, if provided. One of vaccine, maks, dist.
- `survey_information_level` (string): A string indicating whether the respondent was shown the broad (high) definition or the narrow (low) definition of compliance.

Supplementary Information C: Survey Change Log

- 2020-07-12: Changed the intentions to visit with precautions randomization to randomly sample two locations rather than one
- 2020-07-25: Added Taiwan as a country option
- 2020-07-27: Added Republic of Northern Macedonia as a country option
- 2020-07-28: Shortened allowed survey response time to record partial completes 4 hours after latest activity from 48 hours
- 2020-08-04: Added an additional mask question (How often are you able to wear a mask or face covering when you are in public?)
- 2020-09-14: Added race question for the US (Not yet released to partners given as we work on preserving privacy)
- 2020-09-14: Changed randomization so that the BEN and Prevention Behaviors in Practice blocks are sampled for all users. Added one more block to be sampled so other blocks are sampled at the same rate.
- 2020-10-28: Survey V2 launched
    - Added future behavior block
    - Added vaccine norm question
    - Added Flu question
    - Removed healthcare access question (replaced w/ flu)
    - Removed past travel block
    - Removed distancing familiarity question
    - Removed intentions to visit if open question
    - Removed locations open questions
- 2021-01-18: Added option “I have already been vaccinated” to vaccine_accept question.

Supplementary Information D: Survey Instrument

Survey Flow

EmbeddedData
languageValue will be set from Panel or URL.
survey_type = waves
location_state = ${loc://Region}
location_country = ${loc://CountryName}
tokenValue will be set from Panel or URL.
information_vaccine_high = None
information_vaccine_low = None
information_masks_high = None
information_masks_low = None
information_dist_high = None
information_dist_low = None
block_order = block_order;
survey_response_information_version = 1

Block: Briefing (7 Questions)

Branch: New Branch
If
If Are you 18 years or older? No Is Selected
Or Do you consent to take part in this survey run by the Massachusetts Institute of Technology? No Is Selected
Or Do you consent to sharing the information with external researchers? No Is Selected

Block: Debrief - Terminated (2 Questions)

EndSurvey:

Standard: COVID-19 information exposure (3 Questions)
Block: Knowledge and positive cases (4 Questions)
Standard: Vaccine and healthcare (4 Questions)
Standard: Demographics (16 Questions)

BlockRandomizer: 6 -

Group: BEN

Standard: Behavioral measures taken (2 Questions)
Standard: Beliefs about efficacy (6 Questions)
Standard: Importance and norms (5 Questions)

Standard: Prevention behaviors in practice (5 Questions)
Standard: FutureActions (5 Questions)
Standard: Distancing familiarity, importance & norms (5 Questions)

Branch: New Branch
If

If information_vaccine_high Is Not Equal to None
And information_vaccine_low Is Not Equal to None
And information_masks_high Is Not Equal to None
And information_masks_low Is Not Equal to None
And information_dist_high Is Not Equal to None
And information_dist_low Is Not Equal to None

Standard: SurveyResponseInformation (7 Questions)

BlockRandomizer: 2 -

Group: Information Block

Standard: Information sources (3 Questions)
Standard: Information sources – Trust (3 Questions)
Standard: Information Needs (2 Questions)

Standard: Basic knowledge (6 Questions)
Standard: Risk perceptions and locus of control (6 Questions)
Standard: Work (5 Questions)

Group: Intentions to visit

Standard: Intentions to visit locations if open (2 Questions)

Block: Debrief (2 Questions)

EndSurvey: Default

Page Break

Start of Block: Briefing

Q1.1 Browser Meta Info
Browser (1)
Version (2)
Operating System (3)
Screen Resolution (4)
Flash Version (5)
Java Support (6)
User Agent (7)

Display This Question:

If GeoIP Location CountryCode != US

JS

Q1.2 **About This Survey** The goal of this survey is to gain a better public understanding of knowledge, attitudes and practices related to COVID-19 across the world. It is part of a research study led by the Massachusetts Institute of Technology (MIT). You may stop taking the survey at any time and may skip any question. This survey is voluntary and will take about 7 minutes. **How Your Information Will Be Used**

Information We Collect

The information shall be processed for this research purpose only.

This study is conducted by MIT, not by Facebook. The only information MIT receives about you from Facebook is your language preference, a randomly assigned ID number and a statistical number. Facebook generates the statistical number based on information such as your age, gender, location and other information. This statistical number we receive is a single number that will not reveal any specific information about you, it simply helps us with our statistical analysis, to ensure that the information taken from these surveys is representative for your country.

In order to ensure that MIT cannot identify you and to keep your responses confidential, MIT does not collect your name, email or any other information that could be used to identify you. Your responses will be retained indefinitely. **Information We Share**

No individual responses will be shared back to Facebook. Any research results shared with the public will be aggregated and will not identify you individually or your responses. **Agreements**

You must be 18 years or older to take this survey.

If you have questions about the study or on the use of your information, please contact: covid-survey@lists.mit.edu. For data protection information, please see the section "Rights for Individuals in the European Economic Area" on the MIT Data Policy, which provides the relevant further information on your rights if/where personal data is processed as part of this research project in accordance with applicable data protection law.

For this research to be effective, we want to share your responses, along with your randomly assigned ID number and your statistical number, with external researchers in your country and elsewhere. These researchers will include academic institutions and non-governmental organizations. This will include researchers at institutions, such as Johns Hopkins University and the World Health Organization. They follow the applicable security and data protection safeguards and will only use the stated information for the research we have described and will not use the information to identify you.

Display This Question:

If GeoIP Location CountryCode = US

Q1.3 **About This Survey** The goal of this survey is to gain a better public understanding of knowledge, attitudes and practices related to COVID-19 across the world. It is part of a research study led by the Massachusetts Institute of Technology (MIT). You may stop taking the survey at any time and may skip any question. This survey is voluntary and will take about 7 minutes. **How Your Information Will Be Used**

Information We Collect

The information shall be processed for this research purpose only.

This study is conducted by MIT, not by Facebook. The only information MIT receives about you from Facebook is your language preference, a randomly assigned ID number and a statistical number. Facebook generates the statistical number based on information such as your age, gender, location and other information. This statistical number we receive is a single number that will not reveal any specific information about you, it simply helps us with our statistical analysis, to ensure that the information taken from these surveys is representative for your country.

In order to ensure that MIT cannot identify you and to keep your responses confidential, MIT does not collect your name, email or any other information that could be used to identify you.

Your responses will be retained indefinitely.

Information We Share

No individual responses will be shared back to Facebook. Any research results shared with the public will be aggregated and will not identify you individually or your responses.

Agreements

You must be 18 years or older to take this survey.

If you have questions about the study or on the use of your information, please contact: covid-survey@lists.mit.edu.

For this research to be effective, we want to share your responses, along with your randomly assigned ID number and your statistical number, with external researchers in your country and elsewhere. These researchers will include academic institutions and non-governmental organizations. This will include researchers at institutions, such as Johns Hopkins University and the World Health Organization. They follow the applicable security and data protection

safeguards and will only use the stated information for the research we have described and will not use the information to identify you.

Q1.4 Are you 18 years or older?

- Yes (1)
- No (2)

Q1.5 Do you consent to take part in this survey run by the Massachusetts Institute of Technology?

- Yes (1)
- No (2)

Q1.6 Do you consent to sharing the information with external researchers?

- Yes (1)
- No (2)

Q1.7 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

End of Block: Briefing

Start of Block: Debrief - Terminated

Q2.1
Thank you for considering participating in this survey.

According to the World Health Organization (WHO), Coronavirus (COVID-19) is an infectious disease where older people are more likely to develop serious illness.

The best way to prevent the spread is through techniques like: Washing your hands regularly with soap and water Covering your mouth and nose when coughing or sneezing Maintaining at least 1 meter distance between you and other people Wearing a face mask or covering when in public or unable to keep distance from others

You can find the WHO's guidance on Coronavirus (COVID-19) here.

Q2.2 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Debrief - Terminated

Start of Block: COVID-19 information exposure

JS

Q3.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q3.2 In the past week, how much, if anything, have you heard or read about coronavirus (COVID-19)?

- Nothing (1)
- A little (2)
- A moderate amount (3)
- A lot (4)

Q3.3 In the past week, did you see more or less news than you wanted to see about coronavirus (COVID-19)?

- Much more (1)
- More (2)
- About the right amount (3)
- Less (4)
- Much less (5)

End of Block: COVID-19 information exposure

Start of Block: Knowledge and positive cases

JS

Q4.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q4.2 Which of the following is correct?

- ○ There is a drug to treat COVID-19 (1)
- ○ There is a vaccine for COVID-19 (2)
- ○ There is both a drug for treatment and a vaccine for COVID-19 (3)
- ○ There is currently no drug treatment or vaccine for COVID-19 (4)
- ○ I am unsure which is correct (5)

Page Break

Q4.3 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q4.4 Do you personally know someone who has tested positive for COVID-19?

- ○ Yes (1)
- ○ No (2)
- ○ Prefer not to say (3)

Page Break

End of Block: Knowledge and positive cases

Start of Block: Vaccine and healthcare

Q5.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q5.2 If a vaccine for COVID-19 becomes available, would you choose to get vaccinated?

- Yes (1)
- No (2)
- Don't know (3)

Page Break

Q5.3 In the past week, have you avoided contact with health care facilities or health care workers due to fear of exposure to COVID-19?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If GeoIP Location CountryCode != ID

And GeoIP Location CountryCode != AR

And GeoIP Location CountryCode != BR

Q5.6 Have you taken a flu vaccine this fall or do you plan to take one in the coming weeks?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (3)

End of Block: Vaccine and healthcare

Start of Block: Demographics

Q6.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q6.2 What is your gender?

- Male (1)
- Female (2)
- Other (3)

Q6.3 What is your age?

- Under 20 (1)
- 20-30 (2)
- 31-40 (3)
- 41-50 (4)
- 51-60 (5)
- 61-70 (6)
- 71-80 (7)
- Over 80 (8)

Page Break

Q6.4 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

Q6.5 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q6.6 What is the highest level of education you have completed?

- ○ Less than primary school (1)
- ○ Primary school (5)
- ○ Secondary school (2)
- ○ College / university (3)
- ○ Graduate school (4)

Page Break

Q6.7 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q6.8 In general, how would you rate your overall health?

- Excellent (1)
- Very good (2)
- Good (3)
- Fair (4)
- Poor (5)

Page Break

Q6.9 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q6.10 In which country do you currently reside?

▼ Afghanistan (1) ... Zimbabwe (1357)

Display This Question:
If List of Countries = United States of America

Q6.11 In which state do you currently reside?

▼ Alabama (1) ... I do not reside in the United States (53)

Display This Question:
If List of Countries = India

Q6.12 In which state or union territory do you currently reside?

▼ Andaman and Nicobar Islands (1) ... West Bengal (36)

Page Break

Q6.13 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q6.14 Which of these best describes the area where you are currently staying?

- City (1)
- Town (2)
- Village or rural area (3)

Page Break

Display This Question:

If List of Countries = United States of America

Q6.15 Are you of Hispanic, Latino, or Spanish origin?

- ○ Yes (1)
- ○ No, not of Hispanic, Latino, or Spanish origin (2)

Display This Question:

If List of Countries = United States of America

Q6.16 What is your race?

- ☐ American Indian or Alaska Native (1)
- ☐ Asian (2)
- ☐ Black or African American (3)
- ☐ Native Hawaiian or other Pacific Islander (4)
- ☐ White (5)
- ☐ Some other race (6)

End of Block: Demographics

Start of Block: Behavioral measures taken

Q14.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)


JS

Q14.2 What measures have you taken to prevent infection from COVID-19 in the past week?

- ☐ Washing hands regularly using disinfectants or soap and water (1)
- ☐ Covering mouth and nose when coughing or sneezing (2)
- ☐ Avoiding close contact with anyone who has a fever and cough (3)
- ☐ Wearing a face mask or covering (4)
- ☐ Staying at least 1 meter away from other people when out in public (5)
- ☐ Staying at least 2 meters away from other people when out in public (6)
- ☐ Avoiding touching your eyes, nose, and mouth with unwashed hands (7)
- ☐ Taking herbal supplements (8)
- ☐ Using homeopathic remedies (17)
- ☐ Using caution when opening letters and packages (9)
- ☐ Getting the flu vaccine (10)
- ☐ Eating garlic, ginger, or lemon (11)
- ☐ Cleaning or disinfecting surfaces (12)
- ☐ Using antibiotics (13)
- ☐ Cleaning or disinfecting a mobile phone (14)
- ☐ Self-isolation (15)
- ☐ ⊗ None of these (16)

Page Break

End of Block: Behavioral measures taken

Start of Block: Beliefs about efficacy

Q15.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q15.2 How effective is handwashing for preventing the spread of COVID-19?

- Extremely effective (1)
- Very effective (2)
- Moderately effective (3)
- Slightly effective (4)
- Not effective at all (5)

Q15.3 How effective is wearing a face mask for preventing the spread of COVID-19?

- Extremely effective (1)
- Very effective (2)
- Moderately effective (3)
- Slightly effective (4)
- Not effective at all (5)

Page Break

Q15.4 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q15.5 How well is COVID-19 being handled in ${Q6.10/ChoiceGroup/SelectedChoices}?

- Extremely well (1)
- Very well (2)
- Moderately well (3)
- Slightly well (4)
- Not well at all (5)

Q15.6 How well is your community handling COVID-19?

- Extremely well (1)
- Very well (2)
- Moderately well (3)
- Slightly well (4)
- Not well at all (5)

End of Block: Beliefs about efficacy

Start of Block: Importance and norms

Q16.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q16.2 How important is it for you to take actions to prevent the spread of COVID-19 in your community?

- Extremely important (1)
- Very important (2)
- Moderately important (3)
- Slightly important (4)
- Not at all important (5)

Q16.3 How important do other people in your community think it is to take actions to prevent the spread of COVID-19?

- Extremely important (1)
- Very important (2)
- Moderately important (3)
- Slightly important (4)
- Not at all important (5)

Page Break

Q16.4 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q16.5 Out of 100 people in your community, how many do you think believe the following because of COVID-19?

	0 10 20 30 40 50 60 70 80 90 100
Social gatherings should be cancelled ()	
People should stay at least 1 meter away from other people when out in public ()	
People should wear a face mask or covering when out in public ()	
Non-essential retail shops should be closed ()	
A general curfew should be enforced ()	
Travel between countries should be restricted ()	
Travel within the country should be restricted ()	

Page Break

End of Block: Importance and norms

Start of Block: Prevention behaviors in practice

Q13.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q13.2 How often are you able to stay at least 1 meter away from people not in your household?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Always (5)

Page Break

Q13.3 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q13.4 When you clean your hands, how often are you able to clean your hands with soap or alcohol-based handrub?

- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Always (5)

Q13.5 How often are you able to wear a mask or face covering when you are in public?

- Never (1)
- Rarely (4)
- Sometimes (2)
- Often (3)
- Always (5)

End of Block: Prevention behaviors in practice

Start of Block: FutureActions

Q21.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q21.2 Over the next two weeks, how likely are you to wear a mask when in public?

- Always (1)
- Almost always (2)
- When convenient (3)
- Rarely (4)
- Never (5)

Q21.3 Over the next two weeks, how likely are you to maintain a distance of at least 1 meter from others when in public?

- Always (1)
- Almost always (2)
- When convenient (3)
- Rarely (4)
- Never (5)

Page Break

Q21.4 If a vaccine against COVID-19 infection is available in the market, would you take it?

- Yes, definitely (1)
- Probably (2)
- Unsure (3)
- Probably not (4)
- No, definitely not (5)

Q21.5 Would you be more or less likely to take a vaccine against COVID-19 infection if it were made available and recommended to you by each of the following

	More Likely (1)	Less Likely (2)	No Impact (3)
Friends and family (1)			
Local health workers (2)			
World Health Organization (WHO) (3)			
Government health officials (4)			
Politicians (6)			

End of Block: FutureActions

Start of Block: Distancing familiarity, importance & norms

Q11.3 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q11.4 How important do you think physical distancing is for slowing the spread of COVID-19?

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Very important (4)
- Extremely Important (5)

Page Break

Q11.5 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q11.6 Out of 100 people in your community, how many do you think do the following when they go out in public?

	0 10 20 30 40 50 60 70 80 90 100
Maintain a distance of at least 1 meter from others ()	
Wear a face mask or covering ()	

Q11.7 Out of 100 people in your community, how many do you think would take a COVID-19 vaccine if it were made available?

	0 10 20 30 40 50 60 70 80 90 100
1 ()	

End of Block: Distancing familiarity, importance & norms

Start of Block: SurveyResponseInformation

Q22.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q22.2 Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_masks_high}%** of people in **your country** say they always or often wear a mask when in public.

JS

Q22.3 Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_masks_low}%** of people in **your country** say they always wear a mask when in public.

JS

Q22.4
Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_dist_high}%** of people in **your country** say they are always or often able to maintain a distance of 1 meter when in public.

JS

Q22.5
Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_dist_low}%** of people in **your country** say they are always able to maintain a distance of 1 meter when in public.

JS

Q22.6
Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_vaccine_high}%** of people in **your country** say they may take a vaccine if one is made available.

JS

Q22.7
Your responses to this survey are helping researchers in your region and around the world understand how people are responding to COVID-19. For example, we estimate from survey responses in the previous month that **${e://Field/information_vaccine_low}%** of people in **your country** say they will take a vaccine if one is made available.

Page Break

End of Block: SurveyResponseInformation

Start of Block: Information sources

Q7.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q7.2 In the past week, from which of the following, if any, have you received news and information about COVID-19? Select all that apply.

- [ ] Online sources (websites, apps, social media) (1)
- [ ] Messaging apps / SMS / text messaging (2)
- [ ] Newspapers (3)
- [ ] Television (4)
- [ ] Radio (5)

Q7.3 In the past week, from which of the following, if any, have you received news and information about COVID-19? Select all that apply.

- [ ] Local health workers, clinics, and community organizations (1)
- [ ] Scientists, doctors, and health experts (2)
- [ ] World Health Organization (WHO) (3)
- [ ] Government health authorities or other officials (4)
- [ ] Politicians (5)
- [ ] Journalists (8)
- [ ] Ordinary people I know personally (6)
- [ ] Ordinary people I don't know personally (7)

Page Break

End of Block: Information sources

Start of Block: Information sources – Trust

Q8.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q8.2 How much do you trust each of the following as a source of COVID-19 news and information?

	Do not trust (1)	Somewhat trust (2)	Trust (3)
Online sources (websites, apps, social media) (1)	○	○	○
Messaging apps / SMS / text messaging (3)	○	○	○
Television (5)	○	○	○
Radio (6)	○	○	○
Newspapers (7)	○	○	○

Q8.3 How much do you trust each of the following as a source of COVID-19 news and information?

	Do not trust (1)	Somewhat trust (2)	Trust (3)
Local health workers, clinics, and community organizations (1)	○	○	○

Scientists, doctors, health experts (31)	○	○	○
World Health Organization (WHO) (3)	○	○	○
Government health authorities or other officials (5)	○	○	○
Politicians (6)	○	○	○
Journalists (33)	○	○	○
Ordinary people I know personally (7)	○	○	○
Ordinary people I do not know personally (32)	○	○	○

Page Break

End of Block: Information sources – Trust

Start of Block: Information Needs

Q9.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q9.2 Which of the following aspects of COVID-19 do you have the most questions about?

- [ ] The cause of the disease (1)
- [ ] Symptoms and risk factors (2)
- [ ] Treatment of the disease (3)
- [ ] How I can protect myself (4)
- [ ] Immunity (5)
- [ ] Scientific progress in development of a vaccine or treatment (6)
- [ ] How other people are coping (7)
- [ ] Caring for those most at risk of COVID-19 (8)
- [ ] How I can best take care of my children's school education (9)
- [ ] Differences between COVID-19 and other diseases (e.g. flu) (10)
- [ ] The evolution of the pandemic in ${Q6.10/ChoiceGroup/SelectedChoices} (11)
- [ ] The evolution of the pandemic globally (12)
- [ ] The economic impact of COVID-19 to me personally (13)
- [ ] The economic impact of COVID-19 in ${Q6.10/ChoiceGroup/SelectedChoices} (14)
- [ ] How to maintain my mental health during the isolation (15)
- [ ] How to maintain my social contact despite the physical distancing (16)

☐ Other protection measures by the government and communities (17)

End of Block: Information Needs

Start of Block: Basic knowledge

Q10.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q10.2 Which of the following types of people are at the highest risk of severe illness from COVID-19? Select all that apply.

☐ People of certain religions (1)

☐ People of certain ages (2)

☐ People with certain medical conditions (3)

☐ People with certain ethnic backgrounds (4)

☐ ⊗ None of the above (5)

Page Break

Q10.3 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q10.4 Which of the following best describes how COVID-19 spreads?

- ○ Human contact, coughing or sneezing (1)
- ○ Exposure to animals (2)
- ○ Mosquito bites (3)
- ○ Dirt or pollution (4)
- ○ Other (5)

Page Break

Q10.5 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q10.6 Which of the following can be symptoms of COVID-19? Please select as many as apply.

- [ ] Fever (1)
- [ ] Cough (2)
- [ ] Shortness of breath (3)
- [ ] Sore throat (4)
- [ ] Runny or stuffy nose (5)
- [ ] Muscle or body aches (6)
- [ ] Headaches (7)
- [ ] Fatigue (tiredness) (8)
- [ ] Diarrhea (9)
- [ ] Loss of taste and smell (10)
- [ ] ⊗ None of these (11)

Page Break

End of Block: Basic knowledge

Start of Block: Risk perceptions and locus of control

Q12.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q12.2 How dangerous do you think the COVID-19 risk is to your community?

- Not at all dangerous (1)
- Slightly dangerous (2)
- Moderately dangerous (3)
- Very dangerous (4)
- Extremely dangerous (5)

Page Break

Q12.3 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q12.4 How likely is it that someone of the same age as you in your community becomes sick from COVID-19?

- Not at all likely (1)
- Slightly likely (2)
- Moderately likely (3)
- Very likely (4)
- Extremely likely (5)

Q12.5 Do you agree with this statement? "I have control over whether I will get COVID-19."

- Strongly disagree (1)
- Somewhat disagree (4)
- Neither agree or disagree (5)
- Somewhat agree (6)
- Strongly agree (7)

Q12.6 How serious would it be if you became infected with COVID-19?

- ○ Not at all serious (1)
- ○ Somewhat serious (2)
- ○ Very serious (3)

Page Break

End of Block: Risk perceptions and locus of control

Start of Block: Work

Q17.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q17.2 Have you been working at some point in 2020?

- Yes (1)
- No (2)

Q17.3 How has your work changed since January 31, 2020?

- No longer employed (1)
- Newly employed (2)
- Employed in a different business (3)
- Role substantially changed with same business (4)
- Little change (5)

Display This Question:

If Have you been working at some point in 2020? = Yes

Q17.4 Which best way to describe the work you do most of the time to make money?

- ○ I work for my own business (1)
- ○ I work in a business that is run by my household or family member (2)
- ○ I work in a business that is run by someone else (3)
- ○ I work for the government (4)
- ○ Other (5)

Display This Question:

If Have you been working at some point in 2020? = Yes

Q17.5 What is the main activity of the business or organization in which you were working before February 2020?

- ○ Agriculture (1)
- ○ Buying and selling (11)
- ○ Construction (12)
- ○ Education (13)
- ○ Electricity/water/gas/waste (14)
- ○ Financial/insurance/real estate services (15)
- ○ Health (16)
- ○ Manufacturing (17)
- ○ Mining (18)
- ○ Personal services (19)
- ○ Professional/scientific/technical activities (20)
- ○ Public administration (21)
- ○ Tourism (22)
- ○ Transportation (23)
- ○ Other (24)

Page Break

End of Block: Work

Start of Block: Intentions to visit locations if open

Q18.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q18.4 Which of the following businesses, locations, or events would you visit or attend in the coming two weeks if they were operating at full capacity?

- [ ] Restaurants (1)
- [ ] Parks and beaches (2)
- [ ] Retail shops / shopping malls (3)
- [ ] Schools (4)
- [ ] Performances and sporting events (5)
- [ ] Places of employment (6)
- [ ] Places of worship (7)
- [ ] Health care facilities (8)

Page Break

End of Block: Intentions to visit locations if open

Start of Block: Debrief

Q21.1 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

JS

Q21.2
Thank you for participating in this survey, your answers will help researchers in your region and around the world understand how people are responding to COVID-19.

According to the World Health Organization (WHO), Coronavirus (COVID-19) is an infectious disease where older people are more likely to develop serious illness.

The best way to prevent the spread is through techniques like: Washing your hands regularly with soap and water Covering your mouth and nose when coughing or sneezing Maintaining at least 1 meter distance between you and other people Wearing a face mask or covering when in public or unable to keep distance from others

You can find the WHO's guidance on Coronavirus (COVID-19) here.

End of Block: Debrief