

The Executive Opinion Survey: The Voice of the Business Community

For the last 40 years, the Executive Opinion Survey (the Survey) has been a key ingredient of the *Global Competitiveness Report* series and other Forum benchmarking activities. It is the longest-running and most extensive survey of its kind and provides a yearly evaluation of critical aspects of competitiveness for which statistical data is missing because it is either impossible or extremely difficult to measure on a global scale. The aim of the Survey is to capture reality as well as possible, and business leaders are arguably the best positioned to assess the business environment in which they operate.

Through the Survey, respondents are asked to evaluate the situation for specific domains at the country level—such as the appetite for entrepreneurial risk, the level of corruption, and the extent of the skills gap. The results complement other statistical data to provide a more complete assessment of the business environment and the drivers of productivity.

The indicators derived from the Survey are used in the calculation of the Global Competitiveness Index 4.0 (GCI 4.0) in addition to a number of other World Economic Forum indexes, such as the Global Gender Gap Index and the Travel & Tourism Competitiveness Index; and several publications, including *The Inclusive Growth and Development Report* and *The Global Risks Report*; as well as many Forum initiatives. A truly unique source of data, the Survey has also long been used by numerous international and nongovernmental organizations, think tanks and academia for empirical and policy work.

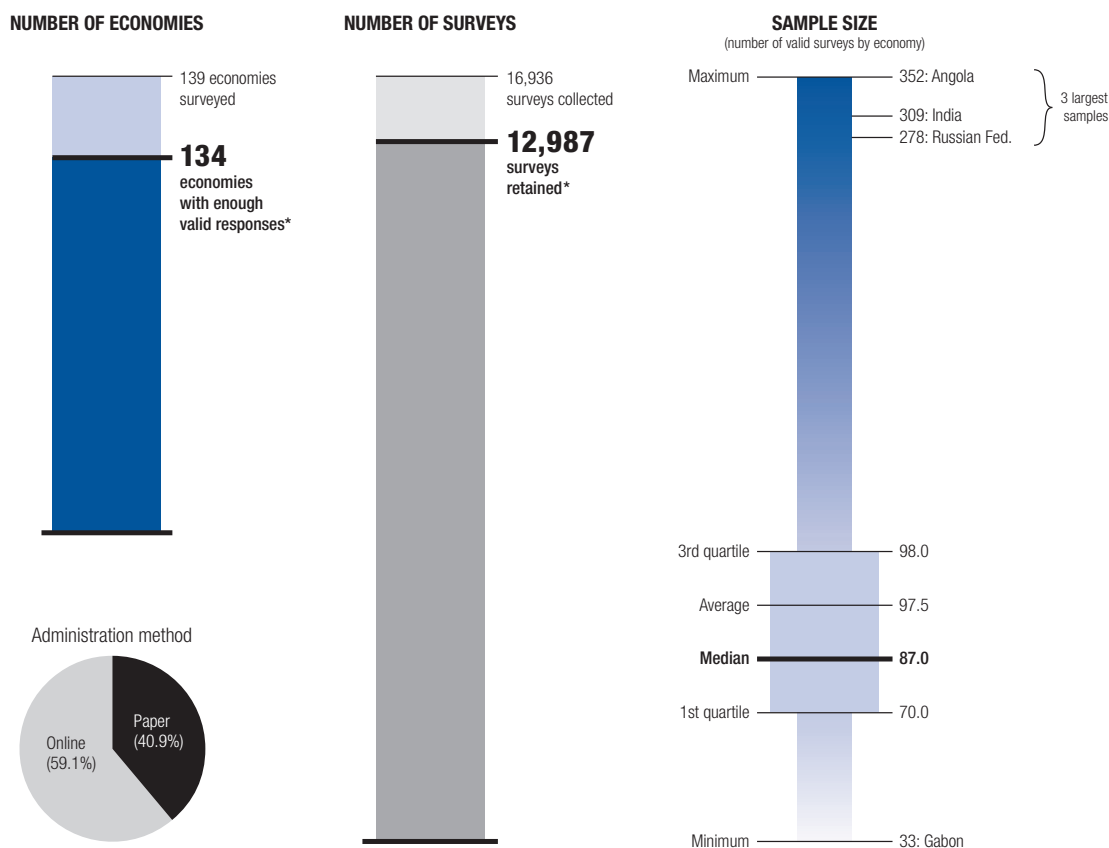
The survey 2019 in numbers

The 2019 edition of the Survey captured the views of 16,936 business executives in 139 economies between January and April 2019. Following the data editing process described below, a total of 12,987 responses were retained. In an effort to move away from paper surveys, this year more than half of the retained surveys (59.1%) were completed online (see Figure 1). The 2019 edition of the Survey was made available in 41 languages (see Table 1). Three additional countries are surveyed in 2019 compared to the previous edition (Barbados, Gabon, Madagascar) and two countries are not covered this year (Liberia and Sierra Leone).

Survey structure, administration and methodology

The Survey comprises 78 questions. Most questions ask respondents to evaluate on a scale of 1 (considered among the worst in the world) to 7 (considered among the best in the world) the performance on various topics of the country where the respondent operates. The questions are organized into 10 topical areas: Infrastructure; Technology; Financial Environment;

Figure 1: Descriptive statistics of the Executive Opinion Survey 2019



Source: World Economic Forum, Executive Opinion Survey, 2019 edition.

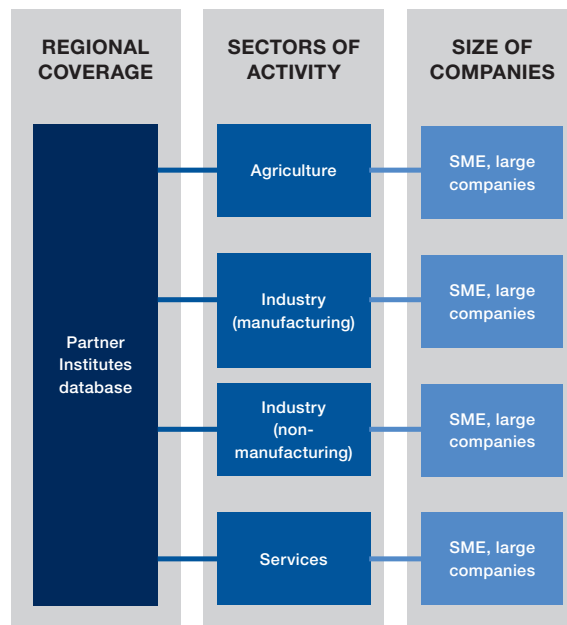
Note: Not all charts are drawn to scale.

* Following data treatment. See text for details.

Table 1: Available languages in 2019

Albanian	Czech	Indonesian	Montenegrin	Tajik
Arabic	Danish	Italian	Polish	Thai
Armenian	English	Japanese	Portuguese (Brazilian)	Turkish
Azeri	Estonian	Khmer	Romanian	Urdu
Bosnian	Farsi	Korean	Russian	Vietnamese
Bulgarian	French	Lao	Serbian	
Chinese	German	Latvian	Slovak	
Chinese (traditional)	Greek	Lithuanian	Slovenian	
Croatian	Hungarian	Mongolian	Spanish	

Figure 2: Sample frame requirements



Foreign Trade and Investment; Domestic Competition; Business Operations and Innovation; Security; Governance; Education and Human Capital; and Risks. The 2019 edition of the Survey instrument is available in the Downloads section of the *Global Competitiveness Report's* page at <http://gcr.weforum.org/>.

The administration of the Survey is supervised by the World Economic Forum and conducted at the national level by the Forum's network of Partner Institutes. Partner Institutes are universities or other research organizations, business associations, competitiveness councils, or in some cases survey companies. These organizations have the private-sector network for reaching out to leading business executives and a firm commitment to improving the competitiveness of their respective economies (for the full list, see the Partners Institutes section of this report).

In administering the Survey and in order to gather the strongest dataset, Partner Institutes are asked to follow detailed sampling guidelines and collect the data in a specific timeframe. The collection process is based on best practices in the field of Survey administration and on discussions with survey experts. It is put in place to ensure that the sample of respondents is the most representative possible and comparable across the globe.

The sampling guidelines specify that the Partner Institutes create a sample frame (Figure 2)—a list of business executives from companies of various sizes and from the various sectors of activity.

The sample frame should reflect the structure of the economy as follows:

- It should be in proportion to the share of GDP by sector: agriculture, manufacturing industry (mining and quarrying, electricity, gas and water supply, construction), and services.
- It should ensure the representation of both large- (more than 250 employees) and small-sized companies (250 employees or fewer), again reflecting each sector. At least one-third of companies are large and one-third are small, and the remaining one-third are determined by the structure of the economy in proportion to the share of GDP by company size.
- It should ensure that the chosen companies also have a sufficiently wide geographical coverage.

The Partner Institutes are asked to separate the sample frame into two lists: one that includes only large firms, and a second that includes all other firms, retaining sectoral representation in both lists. Partner Institutes then randomly select from each list the firms that will receive the Survey.

The Survey is administered in a variety of formats. The primary method of administration is the online survey tool, but other methods are used: mail-in surveys, face-to-face interviews and telephone interviews.

In addition to administering the Survey, Partner Institutes play an active and essential role in disseminating the findings of *The Global Competitiveness Report* and other reports published by the World Economic Forum by holding press events and workshops to highlight the results at the national level to the business community, the public sector and other stakeholders.

Data treatment and score computation

This section details the process whereby individual responses are edited and aggregated in order to produce the Survey question scores of each country. These are the results that, together with other indicators obtained from different sources, feed into the GCI 4.0 and other research projects.

Data editing

Prior to aggregation, the respondent-level data is subjected to a careful editing process. The following responses are excluded from the dataset: surveys where the respondent gives the same answer to at least 80% of the questions; surveys with a completion rate inferior to 50%; respondents who are not based in the same

country as the Partner Institute; respondents who do not have the required level of seniority; and duplicate surveys—which can occur, for example, when a survey is both completed online and mailed in.

A univariate outlier test is then applied at the country level for each question of each survey. We use the standardized score—or “z-score”—method, which indicates by how many standard deviations any one individual answer deviates from the mean of the country sample. Individual answers with a standardized score greater than 3 are dropped. Additional statistical tests aimed at detecting responses that exhibit too little or too much variance across answers are used to exclude individual responses.

Computation of single-edition country scores

We use a simple average to compute scores at the country level. As the sample frame aims to replicate an economy’s sectoral composition and includes companies of different sizes, the country-level score of each Executive Opinion Survey question is the arithmetic mean of all answers in each country. That is, for a given question, all individual answers carry the same weight.

Formally, the average of a Survey indicator i for country c , denoted $q_{i,c}$, is computed as follows:

$$q_{i,c} = \frac{\sum_j q_{i,c,j}}{N_{i,c}}$$

where $q_{i,c,j}$ is the answer to question i in country c from respondent j ; and $N_{i,c}$ is the number of respondents to question i in country c .

Once responses have been aggregated at the country level, a test to detect statistical outliers is run. We leverage the strong relationship between the indicators derived from the Survey and some 50 statistical indicators included in the GCI 4.0: countries doing well on these indicators tend to do well in the Survey. A univariate linear regression is used to predict the expected average score of Survey indicators based on the average performance in the other indicators. Average Survey scores that lie outside the 90% confidence interval around the predicted values are considered “outliers”. The scores of individual Survey indicators are systematically corrected by a factor corresponding to the distance between the observed average Survey score and the predicted Survey average at the limit of the confidence interval.

In addition, an analysis to assess the reliability and consistency of the Survey data over time is carried out. As part of this analysis, an inter-quartile range (IQR) test is performed to identify large swings—positive and negative—between two editions. For each country, we compute the year-on-year difference, d , in the average score of a core set of 53 Survey questions.

We then compute the inter-quartile range (i.e. the difference between the 25th percentile and the 75th percentile). Any value d outside the range bounded by the 25th percentile minus 1.5 times the IQR and the 75th percentile plus 1.5 times the IQR is identified as a potential outlier. This test is complemented by a series of additional empirical tests, including an analysis of five-year trends and a comparison of changes in the Survey results with changes in other indicators capturing similar concepts. We interview local experts and consider the latest developments in a country in order to assess the plausibility of the Survey results.

Country score computation

For each country and each Survey question, in the general case, the final country score is a weighted average of the single-edition scores of the two most recent editions of the Survey. The weighted average approach makes results less sensitive to the specific point in time when the Survey is administered. Second, it increases the amount of available information by providing a larger sample size. Additionally, because the Survey is carried out during the first quarter of the year, the average of the responses in the first quarter of 2018 and the first quarter of 2019 better aligns the Survey data with many of the data indicators from sources other than the Survey, which are often annual-averages data.

The weighted scheme used to compute the final country score is composed of two overlapping elements. We place more weight on the year with the larger sample size to attribute equal weight to each response. At the same time, we attribute greater weight to the most recent sample because it contains most up-to-date information. That is, we also “discount the past.” Table 2 reports the exact weights used in the computation of the scores of each country.

The country scores thus obtained are then used for the computation of the Global Competitiveness Index 4.0.

Formally, for any given Survey question i , country c ’s score, $q_{i,c}^{2018-19}$, is given by:

$$q_{i,c}^{2018-19} = w_c^{2018} \times q_{i,c}^{2018} + w_c^{2019} \times q_{i,c}^{2019} \quad (1)$$

where $q_{i,c}^t$ is country c ’s score on question i in year t , with $t = 2018, 2019$, as computed following the approach described in the text; and w_c^t is the weight applied to country c ’s score in year t .

The weights for each year are determined as follows:

$$w_c^{2018} = \frac{(1-\alpha) + \frac{N_c^{2018}}{N_c^{2018} + N_c^{2019}}}{2} \quad (2a)$$

and

Table 2: Executive Opinion Survey: Descriptive statistics and weightings

Economy	Period 1			Period 2			
	Survey edition	No. of respondents	Weight (%)*	Survey edition	No. of respondents	Weight (%)*	Online (%) [†]
Albania	2018	94	45.0	2019	94	55.0	2
Algeria	2018	87	43.5	2019	98	56.5	16
Angola	2018	120	32.7	2019	352	67.3	100
Argentina	2018	84	40.5	2019	121	59.5	100
Armenia	2018	63	41.6	2019	83	58.4	100
Australia	2018	69	43.2	2019	80	56.8	100
Austria	2018	128	41.7	2019	167	58.3	43
Azerbaijan		Data for 2018 not available		2019	70	100.0	3
Bahrain		Data for 2018 not available		2019	67	100.0	100
Bangladesh	2018	92	47.2	2019	77	52.8	0
Barbados		Data for 2018 not available		2019	50	100.0	100
Belgium	2017	99	51.9	2018	56	48.1	100
Benin	2018	78	43.2	2019	90	56.8	2
Bolivia	2018	54	43.5	2019	61	56.5	100
Bosnia and Herzegovina	2018	87	43.6	2019	97	56.4	100
Botswana	2018	91	46.1	2019	83	53.9	5
Brazil	2018	118	36.9	2019	231	63.1	100
Brunei Darussalam	2018	61	33.7	2019	161	66.3	57
Bulgaria	2018	95	44.4	2019	100	55.6	0
Burkina Faso	2018	73	50.4	2019	47	49.6	100
Burundi		Data for 2018 not available		2019	94	100.0	0
Cambodia	2018	58	44.0	2019	63	56.0	100
Cameroon	2018	73	42.7	2019	88	57.3	5
Canada	2018	119	49.0	2019	86	51.0	100
Cape Verde	2018	62	43.8	2019	68	56.2	81
Chad	2018	82	43.3	2019	94	56.7	0
Chile	2018	227	44.6	2019	234	55.4	100
China	2016	355	43.6	2017	396	56.4	99.3
Colombia	2018	113	44.6	2019	117	55.4	74
Congo, Democratic Rep.	2018	110	46.6	2019	97	53.4	15
Costa Rica	2018	77	46.2	2019	70	53.8	100
Côte d'Ivoire	2018	120	35.8	2019	259	64.2	0
Croatia	2018	82	45.6	2019	78	54.4	100
Cyprus	2018	75	43.9	2019	82	56.1	12
Czech Republic	2018	95	39.3	2019	151	60.7	100
Denmark	2018	63	52.8	2019	33	47.2	100
Dominican Republic	2018	59	44.6	2019	61	55.4	85
Ecuador	2018	100	46.5	2019	89	53.5	100
Egypt	2018	94	42.0	2019	120	58.0	25
El Salvador	2018	62	43.8	2019	68	56.2	100
Estonia	2018	67	42.3	2019	83	57.7	100
Eswatini	2018	45	47.4	2019	37	52.6	100
Ethiopia		Data for 2018 not available		2019	96	100.0	0
Finland	2018	42	45.6	2019	40	54.4	100
France	2018	62	36.0	2019	132	64.0	100
Gabon		Data for 2018 not available		2019	33	100.0	15
Gambia, The	2018	87	47.0	2019	74	53.0	0
Georgia	2017	44	46.2	2018	40	53.8	100
Germany	2018	79	45.0	2019	79	55.0	100
Ghana	2018	90	44.6	2019	93	55.4	8
Greece	2018	83	43.1	2019	97	56.9	98
Guatemala	2018	91	46.3	2019	82	53.7	1
Guinea		Data for 2018 not available		2019	93	100.0	0
Haiti	2018	73	50.9	2019	45	49.1	0
Honduras	2017	90	44.6	2018	93	55.4	0
Hong Kong SAR	2018	85	44.4	2019	89	55.6	63
Hungary	2018	89	45.6	2019	85	54.4	25
Iceland	2018	82	44.6	2019	85	55.4	100
India	2018	378	47.5	2019	309	52.5	28
Indonesia	2018	86	44.6	2019	89	55.4	8
Iran, Islamic Rep.	2018	143	48.5	2019	108	51.5	100
Ireland	2018	54	42.7	2019	65	57.3	100
Israel	2018	85	46.6	2019	75	53.4	100
Italy	2018	89	44.5	2019	93	55.5	1
Jamaica	2018	47	40.8	2019	66	59.2	100
Japan	2018	54	45.7	2019	51	54.3	2
Jordan	2018	99	47.8	2019	79	52.2	100
Kazakhstan	2018	124	50.7	2019	78	49.3	96
Kenya	2018	114	45.1	2019	113	54.9	66
Korea, Rep.	2018	100	45.0	2019	100	55.0	0
Kuwait	2018	85	45.4	2019	82	54.6	51

(Cont'd.)

Table 2: Executive Opinion Survey: Descriptive statistics and weightings (cont'd.)

Economy	Period 1			Period 2			
	Survey edition	No. of respondents	Weight (%)*	Survey edition	No. of respondents	Weight (%)*	Online (%) [†]
Kyrgyz Republic	2018	103	45.4	2019	100	54.6	0
Lao PDR	2018	59	41.7	2019	77	58.3	12
Latvia	2018	62	40.4	2019	90	59.6	4
Lebanon	2018	80	46.7	2019	70	53.3	100
Lesotho	2018	96	44.7	2019	98	55.3	0
Lithuania	2018	103	49.8	2019	70	50.2	100
Luxembourg	2018	39	43.5	2019	44	56.5	100
Madagascar	Data for 2018 not available			2019	119	100.0	0
Malawi	2018	91	50.5	2019	58	49.5	59
Malaysia	2018	78	44.2	2019	83	55.8	100
Mali	2018	75	41.9	2019	96	58.1	0
Malta	2018	48	41.2	2019	65	58.8	100
Mauritania	2017	118	48.1	2018	92	51.9	0
Mauritius	2018	38	38.3	2019	66	61.7	100
Mexico	2018	208	48.2	2019	161	51.8	100
Moldova	2018	86	41.8	2019	111	58.2	1
Mongolia	2018	80	46.3	2019	72	53.7	100
Montenegro	2018	79	45.3	2019	77	54.7	0
Morocco	2018	57	46.9	2019	49	53.1	100
Mozambique	2018	84	44.6	2019	87	55.4	10
Namibia	2018	72	43.4	2019	82	56.6	1
Nepal	2018	89	46.5	2019	79	53.5	3
Netherlands	2018	78	43.6	2019	87	56.4	100
New Zealand	2018	66	46.8	2019	57	53.2	100
Nicaragua	2017	47	42.2	2018	59	57.8	86.4
Nigeria	2018	105	48.7	2019	78	51.3	0
North Macedonia	2018	58	46.4	2019	52	53.6	100
Norway	2017	39	47.9	2018	31	52.1	100
Oman	2018	79	44.2	2019	84	55.8	35
Pakistan	2018	339	54.8	2019	148	45.2	0
Panama	2018	97	46.5	2019	86	53.5	70
Paraguay	2018	93	45.4	2019	90	54.6	100
Peru	2018	98	43.3	2019	112	56.7	100
Philippines	2018	59	45.2	2019	58	54.8	100
Poland	2018	205	44.9	2019	206	55.1	100
Portugal	2018	165	46.2	2019	150	53.8	99
Qatar	2018	98	45.1	2019	97	54.9	8
Romania	2018	100	40.5	2019	144	59.5	26
Russian Federation	2018	296	45.8	2019	278	54.2	100
Rwanda	2018	81	47.0	2019	69	53.0	80
Saudi Arabia	2018	101	44.2	2019	108	55.8	49
Senegal	2018	83	43.3	2019	95	56.7	0
Serbia	2018	107	46.5	2019	95	53.5	100
Seychelles	2018	56	38.8	2019	93	61.2	6
Singapore	2018	122	45.7	2019	115	54.3	100
Slovak Republic	2018	42	37.6	2019	77	62.4	100
Slovenia	2018	80	44.8	2019	81	55.2	100
South Africa	2018	145	50.7	2019	91	49.3	14
Spain	2018	80	42.2	2019	100	57.8	100
Sri Lanka	2018	79	51.1	2019	48	48.9	100
Sweden	2018	62	47.2	2019	52	52.8	100
Switzerland	2018	60	39.7	2019	92	60.3	100
Taiwan, China	2018	114	45.3	2019	111	54.7	38
Tajikistan	2018	96	45.3	2019	94	54.7	5
Tanzania	2018	90	43.9	2019	98	56.1	0
Thailand	2018	95	44.1	2019	102	55.9	100
Trinidad and Tobago	2018	62	39.4	2019	98	60.6	67
Tunisia	2018	86	44.6	2019	89	55.4	100
Turkey	2018	80	43.8	2019	88	56.2	42
Uganda	2018	96	45.3	2019	94	54.7	78
Ukraine	2018	99	45.6	2019	94	54.4	0
United Arab Emirates	2018	78	45.5	2019	75	54.5	84
United Kingdom	2018	56	34.2	2019	141	65.8	100
United States	2018	291	46.9	2019	250	53.1	100
Uruguay	2018	78	44.7	2019	80	55.3	100
Venezuela	2018	36	45.4	2019	35	54.6	100
Viet Nam	2018	78	45.0	2019	78	55.0	49
Yemen	2018	58	41.6	2019	76	58.4	21
Zambia	2018	77	42.8	2019	92	57.2	10
Zimbabwe	2018	55	43.3	2019	63	56.7	100

Note: All statistics are computed following the editing of the data; see text for details. "—" indicates that there was no online administration of the Survey.

* Weight applied to the country score in that edition of the Survey. See Box 1 for an example of a calculation.

[†] Share of surveys completed online (2019 only).

$$w_c^{2019} = \frac{\alpha + \frac{N_c^{2019}}{N_c^{2018} + N_c^{2019}}}{2} \quad (2b)$$

where N_c^t is the sample size (i.e. the number of respondents) for country c in year t , with $t = 2018, 2019$. α is the discount factor that accounts for temporality set at 0.6.

Plugging Equations (2a) and (2b) into (1) and rearranging yields:

$$q_{ic}^{2018-19} = \frac{1}{2} \times \left[\underbrace{(1-\alpha) \times q_{ic}^{2018} + \alpha \times q_{ic}^{2019}}_{\text{discounted-past weighted average}} \right] + \frac{1}{2} \times \left[\underbrace{\frac{N_c^{2018}}{N_c^{2018} + N_c^{2019}} \times q_{ic}^{2018} + \frac{N_c^{2019}}{N_c^{2018} + N_c^{2019}} \times q_{ic}^{2019}}_{\text{sample-size weighted average}} \right] \quad (3)$$

In Equation (3), the first component of the weighting scheme is the discounted-past weighted average. The second component is the sample-size weighted average. These two components are given half-weight each. One additional characteristic of this approach is that it prevents a country sample that is much larger in one year from overwhelming the smaller sample from the other year. In the case of Survey questions that were introduced in 2019 for which, by definition, no past data exists, full weight is given to the 2019 score. For newly covered economies, this treatment is applied to all questions. For countries whose 2019 data were discarded, the results from the previous editions of the report are used instead. Box 1 provides an example of country score calculation.

Box 1: Example of score computation

For this example, we compute the score of Argentina on the indicator Diversity of workforce, which is included in the Global Competitiveness Index 4.0 (indicator 12.01). The indicator is derived from the following Survey question: "In your country, to what extent do companies have a diverse workforce (e.g. in terms of ethnicity, religion, sexual orientation, gender)?" (1 = not at all, 7 = to a great extent). Argentina's score was 4.76 in 2018 and 5.04 in 2019. The weighting scheme described above indicates how the two scores are combined. In Argentina, the size of the sample was 84 in 2018 and 121 in 2019. Using $\alpha = 0.6$ as discount factor and applying Equations (2a) and (2b) yields weights of 0.405 for 2018 and 0.595 for 2019 (see Table 2). The final country score for this question is therefore:

$$\underbrace{0.405 \times 4.76}_{2018} + \underbrace{0.595 \times 5.04}_{2019} = 4.93$$

While numbers are rounded to two decimal places in this example and to one decimal place in result tables, full-precision figures are used in all calculations.