

Appendix: Methodology and Description of Indicators

Survey Methodology

The survey asked respondents to rate different countries' internets on 0-10 scales with regard to openness and the role of the state in its internet governance, both explained in greater detail on the next two pages, for the year 2014 and today.

The countries surveyed were:

- Australia
- Brazil
- China
- France
- Germany
- India
- Iran
- Israel
- Japan
- Nigeria
- North Korea
- Russia
- Singapore
- Turkey
- The United Kingdom
- The United States

Element #1: Character of Domestic Governance

The first element we seek to distill is the character of internet governance in each country. Because internet governance is not a single issue or decision, we see room for a spectrum of characterizations. NOTE: We use the term "equitable" rather than "equal" because not all stakeholders have equal stakes in all internet governance decisions. Equitable distribution would mean that each stakeholders' control or power in internet governance is equal to its own stake in that particular issue.

- A score of 0 indicates that the state has a monopoly on control of all internet governance.
- A score of 2 indicates that internet governance is closer to a state monopoly than an equitable distribution.

- A score of 5 indicates a for every area of internet governance that the state controls, there is another area of internet governance where control is equitably distributed.
- A score of 8 indicates that internet governance is closer to an equitable distribution overall than a state monopoly.
- A score of 10 indicates that internet governance is equitably distributed.

The prompting question was:

- On a scale of 0 (state monopoly on power) to 10 (equitable distribution of power), how dominant was the government in question over its county's internet governance in 2014?

Element #2: Content Openness

The second element we seek to measure is openness. Openness means different things to different people. For the early internet pioneers, open referred to the principle that internet architecture should be agnostic to the traffic on it. What this would mean, in practice, is that architecture would not discriminate—block or throttle—different packets based on what was contained in them.

However, openness in the political context has increasingly come to describe the content environment of a country's internet. An fully open internet in this context refers to an internet absent of any censorship. As authoritarian countries push to legitimize censorship and democrats laud the power of the internet for spreading democracy, it is this second version of openness that has been placed at the center of the internet governance debate.

It the second version of openness—content openness—that we seek to measure.

- A score of 0 would indicate an internet whose content is strictly moderated. Some political content is always banned.
- A score of 2 would indicate an internet whose content is strictly moderated. Some political content is banned sometimes, and other types of content are closely controlled.
- A score of 5 would indicate an internet whose content is moderated. Political content is sometimes banned. Hate content and/or content inciting violence is banned, but other types of content are generally allowed.
- A score of 8 would indicate an internet whose content is lightly moderated. Political content is not banned, but hate content or content inciting violence is.
- A score of 10 would indicate an internet whose content is completely open (unmoderated/uncensored). No speech is banned.

The prompting question was:

- On a scale of 0 (closed) to 10 (open), how open to the free flow of content was Country X's internet in 2014?

Survey Respondents

- Adam Segal

- AJ Grotto
- Drew Herrick
- Francesca Spidalieri
- Graham Webster
- Ian Wallace
- John Scott
- Maily Fidler
- Marilia Maciel
- Michelle Price
- Paul Cornish
- Robert Morgus
- Susan Aaronson
- Tereza Horejsova
- Trey Herr
- Will Carter
- Six anonymous participants

Identifying Clusters

We sort countries into one of four clusters:

- Sovereign and Controlled
- Global and Open
- *Digital Deciders*
- LDCs and Small Countries

The Sovereign and Controlled group consists of countries whose internets either do, or we expect will, embody the Sovereign and Controlled model, as described above. We deemed countries that scored **both** Not Free by Freedom House and Authoritarian by the Economist Intelligence Unit to fall into this camp. Of the 193 UN Member States, 27 states fall into this category.

The Open and Confused group consists of countries whose internets either do, or we expect will, embody the Open and Confused model, as described above. We deemed countries that are rated as Free by Freedom House **and also either** OECD or EU members as falling into this camp. We use OECD and EU membership as an initial sorting mechanism because these two institutions have a history of promoting a free, open, and global model for the internet and a bottom-up approach to internet policy making. The OECD, for example, published recommendations on Internet Policy Making Principles, which aim to preserve the fundamental nature of the open internet and advocate for a multi-stakeholder approach in internet policy development.¹ The European Union was also used to further sort countries. Of the 193 UN Member States, 37 fall into this category.²

¹ <http://www.oecd.org/internet/ieconomy/oecd-principles-for-internet-policy-making.pdf>

² Two states identified as free and open states were Hungary and Poland. In recent years, they have shown indications that they may be defectors, with growing government led blocking of

The process of elimination described above yielded a set of 129 states that could fall into the “neither” category. However, in identifying the *Digital Deciders*, we sought to isolate a set of countries with potentially outsized influence internationally. We therefore further sorted out the 79 states that are either lesser-developed countries or smaller than two million people on the basis that these countries generally do not sway major international debates.

The *Digital Deciders* are therefore countries that meet the following criteria:

- Both not part of the OECD or European Union AND Free according to Freedom House (Open and Confused)
- Not rated Authoritarian according to the Economist AND Not Free according to Freedom House (Sovereign and Controlled)
- Not a lesser developed country according to the United Nations
- Bigger than 2 million people.

Of the 193 UN Member States, an even 50 fall into this category.³

Scoring Methodology

Our scoring system is based on five factors:

- Internet Values Score
- Political Values Score
- International Internet Policy Participation Score
- International Influence Score
- Internet Reliance Score

For each of these categories, we compiled a series of sub-indicators that provide a grounding to score each country. At the beginning of the study, we considered 55 indicators but narrowed the list to 24 based on relevance, methodological soundness, and comprehensiveness.

The method for calculating these scores and the few sub-scores beneath them is outlined here. A description of the actual indicators follows this section.

Internet Values Score

The Internet Values Score is based on:

1. Freedom on the Internet Score (score out of 3)
2. Whether or not the country is Member of the Freedom Online Coalition (0 or 1)

To calculate the internet values score, we added the above indicators and divided by four. This gave the Freedom on the Internet score a 3-times weight over Freedom Online Coalition membership.

websites and telecommunications in the name of national security. These states are critical to pay attention in the future. It is also notable that, while all the EU and OECD countries are democratic, many are rated as flawed democracies on the Democracy Index.

³ It is worth noting that at the genesis of our research, we did not seek to build a list of any fixed number, but rather landed on 50 based on our elimination criteria.

Freedom on the Internet Score

To measure a country's freedom on the internet, we a simple average of two indicators:

1. Freedom House: Freedom on the Net score from 2018
2. V-Dem: Internet Censorship rating

Each of those indicators are on a 3 points scale so no conversion was necessary. The freedom on the Internet score is therefore on a 3 point scale.

Political Values Score

The Political Values Score is based on:

1. The country's regime type,
2. The corruption perception index,
3. The country's civil society (CSO) environment.

To calculate the Political Values Score, we converted each of our scores for regime type and corruption perception into a 0-10 scale. The CSO score was converted into a 0-5 scale. We then took the average of these scores. This achieved a $\frac{2}{5}$ weighting for regime type and corruption and a $\frac{1}{5}$ weighting for CSO score.

Regime Type Score

The evenly weighted average of the EIU - Democracy Index Score, the V-Dem: Liberal Democracy Index, and the Freedom House Freedom in the World score.

Corruption Perception Index Score

Transparency International's Corruption Perception Index score divided by 10.

CSO Score

The CSO score we use is an aggregate of four V-Dem Civil Society-related indicators:

1. CSO entry and exit - the extent to which the government controls the entry and exit of CSOs into public life.
2. CSO repression - the extent to which the government represses CSOs
3. CSO consultation - the extent to which major CSOs are routinely consulted by policymakers
4. CSO participatory environment - the extent to which people are involved in CSOs

Each of these indicators were converted to a 0-1 scale and then added up. The total for each country was then divided by four.

International Internet Policy Participation Score

The International Internet Policy Participation Score is based on:

1. WCIT 2012 participation
2. UNGGE participation
3. ICANN: GAC Membership

Each country was awarded one point for participation in each of those forums. Their total was added up and then divided by three to give an evenly weighted average and a score on our 0-1 scale.

International Influence Score

The International Influence Score is based on a series of indicators all of which exist on differing scales. Their scoring scales were converted to a 0-1 score through simple arithmetic. For indicators that were a matter of yes or no answers (for example, G20 membership, GDP greater than \$500 billion, and UNSC P5 status) countries were assigned a 1 for yes and a 0 for no:

1. The World Governance Index: Political Stability and Absence of Violence Score,
2. The Human Development Index Score,
3. The V-Dem International Autonomy Score,
4. G20 Membership,
5. The Bertelsmann Transparency Index: Government as a credible partner indicator,
6. The Bertelsmann Transparency Index: Regional Cooperation indicator,
7. Whether the country's Gross Domestic Product exceeds \$500 billion,
8. Whether the country is a member of the UN Security Council Permanent Five (UNSC P5).

After converting each of these indicators to a 0-1 scale, each country's scores were added up and divided by 7. The decision to divide by 7 to create our score is due to the outsized impact of UNSC P5 status.

Internet Reliance Score

The evenly weighted average of:

- Internet penetration,
- WEF - Use of virtual social networks,
- WEF - Internet infrastructure and content,
- WEF - Business usage rating,
- UN - E-Government Index rating, and
- International internet bandwidth score.

For every score except for international internet bandwidth score, we converted indicators described below onto 0-1 scales. For the international internet bandwidth score, countries were sorted into tiers and given a rating (10 the highest, 0 the lowest):

- 10 = 200 kb/s +
- 9 = 120 - 199 kb/s
- 8 = 100 - 122 kb/s
- 7 = 80 - 99 kb/s
- 6 = 60 - 79 kb/s
- 5 = 45 - 59 kb/s
- 4 = 35 - 44 kb/s
- 3 = 28 - 34 kb/s
- 2 = 20 - 28 kb/s

- 1 = 10 - 19 kb/s
- 0 = 0 - 9 kb/s

This score was then divided by 10 to create equal weight with the other factors. International internet bandwidth was only collected for the *Digital Deciders* and does not factor into the score of the other clusters.

Description of Scoring Indicators

Internet Values Indicators

Freedom House - Freedom on the Net (2018)

Description

The *Freedom on the Net* report from Freedom House measures the internet freedom in countries by rating them on a *Free*, *Partly Free*, or *Not Free* scale. For our purposes, we convert these ratings into:

- Not Free = 1
- Partly Free = 2
- Free = 3

The report defines breaches of internet freedom as:

- Obstacles to access (infrastructural or economic barriers, independence of regulatory bodies, ownership)
- Limits on content (regulations on content, technical filtering and blocking, self censorship, etc)
- Violations of user rights (surveillance, privacy, punishment for free speech)

However, the report does not score every country in the world or every prospective swing state, so we supplement this scoring with V-Dems Internet Censorship Effort data (discussed below).

Collection Methodology

The *Freedom on the Net* report crowdsources its research from Freedom House's wide network of bloggers, academics, journalists, and technology experts.

Source

<https://freedomhouse.org/report/freedom-net/freedom-net-2017>

V-Dem - Internet Censorship Effort

Description

The V-Dem "Internet Censorship Effort" indicator attempts to answer the question: "Does the government attempt to censor information (text, audio, or visuals) on the Internet?" Censorship includes internet filtering, DDoS attacks, and internet shutdowns. However, the indicator is not

concerned with all types of censorship. For example, the indicator does not consider censoring the following topics as illegitimate:

“child pornography, highly classified information such as military or intelligence secrets, statements offensive to a particular religion, or defamatory speech unless this sort of censorship is used as a pretext for censoring political information or opinions.”

In short, the indicator rates the government’s effort at political censorship online.

The indicator rates countries on a 1 - 4 scale, as follows:

- 1: The government successfully blocks Internet access except to sites that are pro-government or devoid of political content.
- 2: The government attempts to block Internet access except to sites that are pro-government or devoid of political content, but many users are able to circumvent such controls.
- 3: The government allows Internet access, including to some sites that are critical of the government, but blocks selected sites that deal with especially politically sensitive issues.
- 4: The government allows Internet access that is unrestricted, with the exceptions mentioned above.

Collection Methodology

This indicator is a “Type C” indicator according to V-Dem’s methodology. This means that country experts provide an evaluation of the *de facto* state of affairs in their country at a particular point in time. 80% of these country experts are academics. Others are often either working in media or public affairs. 2/3 of country experts are also nationals and/or residents of the country. Experts generally also have subject matter expertise for the indicators for which they provide evaluation.

Source

https://www.v-dem.net/media/filer_public/5f/82/5f82bf93-251f-4b93-a2d6-2494810422ea/v-dem_methodology_v3.pdf

Freedom Online Coalition Membership

Description

Is the country a member of the Freedom Online Coalition? Freedom Online Coalition membership signals a political interest in promoting a free and open internet at domestically and globally.

Collection Methodology

Simple collection from the Freedom Online Coalition website list of members.

Source

<https://freedomonlinecoalition.com/about-us/about/>

Political Values Indicators

EIU - Democracy Index Score

Description

The EIU Democracy Index classifies each country on a scale from 0 (authoritarian) to 10 (fully democratic).

The *Democracy Index* score is based on five categories of indicators:

1. Electoral process and pluralism,
2. Civil liberties,
3. The functioning of government,
4. Political participation,
5. Political culture.

Each of these categories receives a score on a scale of 0 - 10 and the final score is the simple average of the five.

The index values are used to place countries within one of four types of regime:

1. Full democracies: scores greater than 8
2. Flawed democracies: scores greater than 6, and less than or equal to 8
3. Hybrid regimes: scores greater than 4, and less than or equal to 6
4. Authoritarian regimes: scores less than or equal to 4

To help illuminate what the EIU believes it is measuring, below are the EIU's definitions of the various regime types:

- **Full democracies** - Countries in which not only basic political freedoms and civil liberties are respected, but which also tend to be underpinned by a political culture conducive to the flourishing of democracy. The functioning of government is satisfactory. Media are independent and diverse. There is an effective system of checks and balances. The judiciary is independent and judicial decisions are enforced. There are only limited problems in the functioning of democracies.
- **Flawed democracies** - These countries also have free and fair elections and, even if there are problems (such as infringements on media freedom), basic civil liberties are respected. However, there are significant weaknesses in other aspects of democracy, including problems in governance, an underdeveloped political culture and low levels of political participation.

- **Hybrid regimes** - Elections have substantial irregularities that often prevent them from being both free and fair. Government pressure on opposition parties and candidates may be common. Serious weaknesses are more prevalent than in flawed democracies—in political culture, functioning of government and political participation. Corruption tends to be widespread and the rule of law is weak. Civil society is weak. Typically, there is harassment of and pressure on journalists, and the judiciary is not independent.
- **Authoritarian regimes:** In these states, state political pluralism is absent or heavily circumscribed. Many countries in this category are outright dictatorships. Some formal institutions of democracy may exist, but these have little substance. Elections, if they do occur, are not free and fair. There is disregard for abuses and infringements of civil liberties. Media are typically state-owned or controlled by groups connected to the ruling regime. There is repression of criticism of the government and pervasive censorship. There is no independent judiciary.

Collection Methodology

The EIU uses a combination of expert assessments and public-opinion surveys (where available). The experts answer a series of 60 questions related to the above categories, rating their answers as either 0 (no or bad), .5 (yes, with some exceptions or moderate), or 1 (yes or good).

Note: Adjustments to the category scores are made if countries do not score a 1 in the following critical areas for democracy:

1. Whether national elections are free and fair.
2. The security of voters.
3. The influence of foreign powers on government.
4. The capability of the civil service to implement policies.

Source

<https://www.eiu.com/topic/democracy-index>

Freedom House - Freedom in the World (Tier)

Description

Freedom in the World measures is an annual report that measures the political rights and civil liberties for each country. Rather than governments and their performance, it assesses rights and freedom of individuals. It takes into consideration the effect of state and nonstate actors.

Collection Methodology

The methodology is derived from the Universal Declaration of Human Rights. The territories are selected by

- whether the area is governed separately from the rest of the relevant country or countries, either de jure or de facto;

- whether conditions on the ground for political rights and civil liberties are significantly different from those in the rest of the relevant country or countries, meaning a separate assessment is likely to yield different ratings
- whether the territory is the subject of enduring popular or diplomatic pressure for autonomy, independence, or incorporation into another country
- whether the territory's boundaries are sufficiently stable to allow an assessment of conditions for the year under review, and whether they can be expected to remain stable in future years so that year-on-year comparisons are possible; and whether the territory is large and/or politically significant

The analyst that prepare the scores using sources such as news articles, reports from NGOs, academic analysis, individual professional contacts, and on the ground research. The research is then discussed at a series of reviews organized by region by Freedom House staff and expert advisers.

Freedom in the world uses three tier systems with scores, ratings and status.

Source

<https://freedomhouse.org/report/methodology-freedom-world-2018>

V-Dem - Liberal Democracy Index

Description

The V-Dem *Liberal Democracy Index* indicator seeks to answer the question: "to what extent is the ideal of liberal democracy achieved?" The indicator is an aggregation of separate V-Dem indicators that measure:

- The extent to which the ideal of electoral democracy is achieved, and
- The extent to which the liberal principle of democracy is achieved.

In this context, an electoral democracy is one that seeks to embody the core value of making rulers responsive to citizens through electoral competition when suffrage is extensive, political and civil society organizations can operate freely, elections are clean and free, and elections affect the composition of the chief executive.

Likewise, a liberal democracy is one that emphasizes the importance of protecting individual and minority rights against the tyranny of the state and majority.

Collection Methodology

The *Liberal Democracy Index* indicator is a Type D indicator, meaning it is comprised of several indicators. In this case those indicators are:

- Liberal component index
- Electoral democracy index

Both the *Liberal component index* and the *Electoral democracy index* are likewise Type D indicators.

The *Liberal component index* is based on a series of Type D indicators which are in turn based on direct data. The Type D indicators are listed here, with the Type E indicators indented:

- Equality before the law and individual liberties,
 - rigorous and impartial public administration (v2clrspct),
 - transparent laws with predictable enforcement (v2cltrnslw),
 - access to justice for men/women (v2clacjstm, v2clacjstw),
 - property rights for men/women (v2clprptym, v2clprptyw),
 - freedom from torture (v2cltort),
 - freedom from political killings (v2clkill),
 - from forced labor for men/women (v2clslavem v2clslavef),
 - freedom of religion (v2clrelig),
 - freedom of foreign movement (v2clfmove), and
 - freedom of domestic movement for men/women (v2cldmovem, v2cldmovew)
- Judicial constraints on the executive,
 - executive respects constitution (v2exrescon),
 - compliance with judiciary (v2jucomp),
 - compliance with high court (v2juhccomp),
 - high court independence (v2juhcind), and
 - lower court independence (v2juncind)
- Legislative constraints on the executive
 - legislature questions officials in practice (v2lggstexp),
 - executive oversight (v2lgotovst),
 - legislature investigates in practice (v2lginvstp), and
 - legislature opposition parties (v2lgoppart).

The *Electoral democracy index* is based on a series of Type E (direct data) indicators measuring:

- freedom of association - derived from measurements of:
 - Whether a ban on political parties is present
 - The level of barriers to entry for political parties
 - The autonomy of opposition parties
 - The extent to which elections are multiparty
 - CSO entry/exit
 - CSO repression
- clean elections - derived from:
 - Measurements of the independence and capacity of the election management body
 - Voter registry rate
 - Election vote buying rate
 - Voting irregularities
 - Election intimidation

- Election violence
- Expert opinion on the free and fairness of the elections
- freedom of expression - derived from:
 - Indicators of media censorship
 - Harassment of journalists
 - Media bias
 - Media self-censorship
 - The criticality of media
 - Freedom of academic and cultural expression
 - Freedom of discussion
- elected officials - derived from:
 - Chains of appointment/selection
 - Whether the head of state is directly elected.
 - The extent to which the legislature is popularly elected.
 - If the legislature is unicameral, this is measured as the proportion of legislators directly elected + half of the proportion that are indirectly elected.
 - If the legislature is bicameral and the upper house is involved in the appointment of the chief executive, the same proportion of directly and half of the indirectly elected legislators is calculated for the upper house; the scores for the lower and upper houses are then averaged.
 - Whether the head of state is appointed by the legislature, or the approval of the legislature is necessary for the appointment of the head of state.
 - Whether the head of government is appointed by the legislature, or the approval of the legislature is necessary for the appointment of the head of government.
 - Whether the head of government is appointed by the head of state or is directly elected.
- suffrage (v2x_suffr)
 - A measurement of the share of the population with suffrage, as measured by responses to the question: What share of adult citizens as defined by statute has the legal right to vote in national elections?

Source

https://www.v-dem.net/media/filer_public/64/ad/64ad9308-45fa-473e-8e2b-e1c0c4e421e6/v-dem_codebook_v8.pdf

Transparency International - Corruption Index Score

Description

The index ranks 176 countries by perceived levels of public sector corruption. It uses a scale from 0-100, the lower the score the higher corruption and vice versa. The index highlights the effort countries are making little to no effort in combating corruption.

Collection Methodology

The index is a combination of international surveys and assessments from independent institutions that specialize in governance and business climate analysis. There are 5 steps in the methodology:

1. Selections of data sources: The CPI draws on a number of sources which are evaluated with a detailed list of criteria including reliability, corruption in public sector, quantitative granularity cross country comparability, and multi year data-sets.
2. Standardise data sources: Each source is standardised to be compatible with other sources to aggregate to the CPI scale.
3. Aggregate the rescaled data: Each country's CPI score is calculated as a simple average of all the available rescaled scores for that country. A country will only be given a score if there are at least three data sources available from which to calculate this average.
4. Report a measure of uncertainty: The score is reported with a standard of error and 90% confidence interval,
5. Compute significant change in score over time: The analysis shows the significant changes in CPI covers for countries over a three year period.

Source

<https://www.transparency.org/cpi2015#downloads>

V-Dem - CSO Entry/Exit

Description

V-Dem's CSO entry and exit indicator measures the extent to which governments control the entry and exit of civil society organizations into public life in their country.

Collection Methodology

The CSO entry/exit indicator is a V-Dem Type C indicator meaning that each country's rating is based on ratings provided by multiple experts. In this case, experts rate CSO's ability to enter or exit public life on a 0 (monopolistic control by government) to 4 (unconstrained).

Source(s)

https://www.v-dem.net/media/filer_public/64/ad/64ad9308-45fa-473e-8e2b-e1c0c4e421e6/v-dem_codebook_v8.pdf

https://www.v-dem.net/media/filer_public/5a/f1/5af198e9-f3e8-4619-b9fd-a8387fdc22a5/v-dem_methodology_v8.pdf

V-Dem - CSO Repression

Description

V-Dem's CSO repression indicator measures the extent to which government attempts to repress CSOs in their country.

Collection Methodology

The CSO repression indicator is a V-Dem Type C indicator meaning that each country's rating is based on ratings provided by multiple experts. In this case, experts rate how much governments repress CSOs on a 0 (severely) to 4 (none) scale.

Source(s)

https://www.v-dem.net/media/filer_public/64/ad/64ad9308-45fa-473e-8e2b-e1c0c4e421e6/v-dem_codebook_v8.pdf

https://www.v-dem.net/media/filer_public/5a/f1/5af198e9-f3e8-4619-b9fd-a8387fdc22a5/v-dem_methodology_v8.pdf

V-Dem - CSO Consultation

Description

V-Dem's CSO consultation indicator measures the extent to which policymakers routinely consult CSOs on policies relevant to the CSO's own members.

Collection Methodology

The CSO Consultation indicator is a V-Dem Type C indicator meaning that each country's rating is based on ratings provided by multiple experts. In this case, experts rate whether governments consult CSOs as a 0 (no), 1 (to some degree), or 2 (yes).

Source(s)

https://www.v-dem.net/media/filer_public/64/ad/64ad9308-45fa-473e-8e2b-e1c0c4e421e6/v-dem_codebook_v8.pdf

https://www.v-dem.net/media/filer_public/5a/f1/5af198e9-f3e8-4619-b9fd-a8387fdc22a5/v-dem_methodology_v8.pdf

V-Dem - CSO Participatory Environment

Description

The V-Dem CSO participatory environment indicator seeks to capture the extent to which people are active in CSOs and how diverse CSOs are.

Collection Methodology

The CSO participatory environment indicator is a V-Dem Type C indicator meaning that each country's rating is based on ratings provided by multiple experts. In this case, experts rate the environment on a 0 to 3 scale:

- 0: Most associations are state-sponsored, and although a large number of people may be active in them, their participation is not purely voluntary.
- 1: Voluntary CSOs exist but few people are active in them.
- 2: There are many diverse CSOs, but popular involvement is minimal.
- 3: There are many diverse CSOs and it is considered normal for people to be at least occasionally active in at least one of them.

Source(s)

https://www.v-dem.net/media/filer_public/64/ad/64ad9308-45fa-473e-8e2b-e1c0c4e421e6/v-dem_codebook_v8.pdf

https://www.v-dem.net/media/filer_public/5a/f1/5af198e9-f3e8-4619-b9fd-a8387fdc22a5/v-dem_methodology_v8.pdf

International Internet Participation Indicators

WCIT 2012 Participation

Description

Indicates whether a country participated in the oral vote at the 2012 World Conference on International Telecommunications, where countries voted whether or not update the International Telecommunications Regulations. While the nature of the vote is not necessarily a reliable indication of a country's internet values today, participation in the vote is a good indicator for whether or not a country is an active participant in international internet governance discussions.

Collection Methodology

We tallied the number of countries that participated in the WCIT final voting. This includes states that signed in the final act and states that refrained.

Source

<https://www.itu.int/osg/wcit-12/highlights/signatories.html>

UNGGE Participation

Description

Indicates whether or not a country participated in one of the eight United Nations Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security. While the nature of the participation is not necessarily a reliable indication of a country's internet values today, participation in the GGE is a good indicator for whether or not a country is an active participant in international internet governance discussions.

Collection Methodology

We tallied the states that have been members of any of the UN GGEs on Developments in the Field of Information and Telecommunications in the Context of International Security since the group's first meeting in 2010.

Source

<https://dig.watch/processes/ungge#Members>

ICANN GAC Participation

Description

Indicates whether or not a country participates in the Governmental Advisory Committee (GAC) for the Internet Corporation for Assigned Names and Numbers (ICANN). While the nature of the participation is not necessarily a reliable indication of a country's internet values today, participation in the GAC is a good indicator for whether or not a country is an active participant in international internet governance discussions.

Collection Methodology

We simply tallied the states that are members of the ICANN GAC advisory council.

Source

<https://gac.icann.org/about/members>

International Political Influence Indicators

World Governance Index - Political Stability and Absence of Violence

Description

The World Governance Index (WGI) reports individual and aggregate governance indicators. It looks at these factors in six dimensions: Voice and Accountability, Political Stability and Absence of Violence, Governmental Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. For Political Stability and Absence of Violence, it measures the perception likelihood of political instability and/or politically motivated violence, including terrorism, armed conflict and social unrest.

Collection Methodology

The reports includes enterprise, citizens and expert survey respondents in industrial and developing countries. Each of the six indicator scores are an aggregate of the average of all of the data. For political instability and absence of violence, it creates a score in three steps

1. Assigned data for individual sources to the six aggregate indicators: questions from the data sources, including Freedom House, Afrobarometer, Global Integrity Index that are associated with political instability and absence of violence.
2. Preliminary rescaling of the individual source data to run from 0 to 1: the questions from the data sources are scaled from 0-1. The higher the score, the better outcome, meaning there is more stability and absence of violence.

3. Using an Unobserved Components Model (UCM) to construct a weighted average of the individual indicators for each source: The Unobserved Components Model (UCM) is used to make the 0-1 rescaled data comparable across sources, and then to construct a weighted average of the data from each source for each country. The UCM assigns greater weight to data sources that tend to be more strongly correlated with each other. While this weighting improves the statistical precision of the aggregate indicators, it typically does not affect very much the ranking of countries on the aggregate indicators. The composite measures of governance generated by the UCM are in units of a standard normal distribution, with mean zero, standard deviation of one, and running from approximately -2.5 to 2.5, with higher values corresponding to better governance. The data is reported in percentile rank term, ranging from 0 (lowest rank) to 100 (highest rank).

Source

<http://info.worldbank.org/governance/wgi/#doc-intro>

UN - Human Development Index

Description

The UN Human Development Index measures the development of a country by assessing average achievements in key developments in human development. These developments are separated into three dimensions, health, standard of living and knowledge. The indicator does not reflect on inequalities, poverty, human security and empowerment.

Collection Methodology

The HDI is the mean of the normalized indices from each of the three dimensions. Each indice takes into consideration factors such as life expectancy, mean years of schooling, expected years of schooling, combined education index and GNI per capita. The dimensions are evenly weighted using equations that ultimately produce the mean value of the three dimensions.

Source

http://hdr.undp.org/sites/default/files/hdr_2013_en_technotes.pdf

V-Dem - International Autonomy

Description

This indicator ask the question if the state is autonomous from the control of other state with repsetc to the conduct of its foreign policy. This indicator is assessed by evaluative judgments on the part of the coder, which are experts on the country while V-Dem research assistants aid in the development.

Collection Methodology

It separates the indicator into three different responses, non-autonomous, semi-autonomous and autonomous.

- Non-autonomous: Foreign policy is controlled by an external power either de facto or de jure.
- Semi-autonomous: an external political actors directly constrains the ability of domestic actors to pursue an independent foreign policy course in some important areas. Seen in treaty provisions, rules that states cannot withdraw etc.
- Autonomous: States can freely act on their foreign policy objectives and not constrained by foreign actors. They can freely exercise independence in international system.

Source

https://www.v-dem.net/media/filer_public/5f/82/5f82bf93-251f-4b93-a2d6-2494810422ea/v-dem_methodology_v3.pdf

G20 Membership

Description

The G20 is an international forum that discuss policy pertaining to the promotion of international financial stability. It consists of the world's largest advanced and emerging economies. The forum is a model for global cooperation, and promotes economic growth and partnership.

Collection Methodology

We tallied the countries that are members of the G20.

Source

<http://g20.org.tr/about-g20/>

Bertelsmann Transparency Index - Government as a Credible Partner

Description

The Bertelsmann Transparency Index analyzes the quality of democracy, market economy and political management in 129 countries. The indicator measures to what extent does the government act as a credible and reliable partner in its relations with the international community. This indicator seeks to assess the "Level of confidence the government has been able to attain with the international community. This includes multilateral, or intergovernmental organizations, foreign governments, investors, bilateral and multilateral donors and NGOs."

Collection Methodology

The BTI uses a standardized codebook and country experts assess the extent of the 17 criteria and whether they have been met by the countries. The index is based on qualitative surveys with written assessments that are translated into numerical rating, ranging from 1-10. There are two exports in the process, the first drafts a detailed report on the criteria in the codebook, which

looks at the qualitative indicators with each of the criterias. The second expert reviews and adds to the country report. Included with the qualitative indicators, the exports draw upon quantitative indicators, such as inflation rates to education spending. Independently, the experts translate the assessment to numerical ratings structured by the four levels of score based categories.

Source

<https://www.bti-project.org/en/home/>

Bertelsmann Transparency Index - Regional Cooperation

Description

The Bertelsmann Transparency Index analyzes the quality of democracy, market economy and political management in 129 countries. This indicator measures the extent that the political leadership is able to cooperate with neighboring countries. It seeks to assess the willingness and ability of the political leadership to

- Develop good neighborly relations
- Cooperate with neighbors in international and regional organizations
- Support regional or international integration

Collection Methodology

The BTI uses a standardized codebook and country experts assess the extent of the 17 criteria and whether they have been met by the countries. The index is based on qualitative surveys with written assessments that are translated into numerical rating, ranging from 1-10. There are two exports in the process, the first drafts a detailed report on the criteria in the codebook, which looks at the qualitative indicators with each of the criterias. The second expert reviews and adds to the country report. Included with the qualitative indicators, the exports draw upon quantitative indicators, such as inflation rates to education spending. Independently, the experts translate the assessment to numerical ratings structured by the four levels of score based categories.

Source

<https://www.bti-project.org/en/home/>

GDP Greater than \$500 billion

Description

The total value of good and services provided by a country that is greater than 500 billion.

Collection Methodology

We tallied the countries that have a stated GDP over more than 500 billion dollars.

Source

<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

UNSC P5

Description

The permanent members of the United Nations Security Council who has the primary responsibility of maintaining international peace and security.

Collection Methodology

We tallied the 5 permanent members of the UN Security Council.

Source

<http://www.un.org/en/sc/>

Internet Reliance

Internet Live Stats - Internet Penetration Rate (% of population)

Description

The Internet Penetration Rate corresponds to the percentage of the total population of a country that uses the internet, according to Internet Live Stats in July 2016.

Collection Methodology

Internet Live Stats' numbers are estimates delivered by Worldometers' RTS algorithm, which processes data elaborated through statistical analysis after being collected from the following sources:

- International Telecommunication Union (ITU) - United Nations specialized agency for information and communication technologies and the official source for global ICT statistics
- ICT Facts and Figures – The world in 2015 - ITU
- Measuring the Information Society - ITU
- MIS Report 2015 Internet Users Data - World Bank Group
- The World Factbook: Internet Users - U.S. Central Intelligence Agency
- United Nations Population Division - U.N. Department of Economic and Social Affairs

Source

<http://www.internetlivestats.com/internet-users-by-country/>

<http://www.internetlivestats.com/internet-users/#definitions>

World Economic Forum Networked Readiness Index - Use of virtual social networks

Description

The WEF Network Readiness Index assess factors, policies, and institutions that allow countries to fully utilize the information and communication technologies for increased competitiveness

and well being. The use of virtual social networks looks at how widely used social networks are for personal and professional communications in countries.

Collection Methodology

The indicator is pulled from the World Economic Forum's Executive Opinion Survey and uses a weighted average of the 2014 and 2015 results. The survey question was as follows:
In your country, how widely are virtual social networks used (e.g., Facebook, Twitter, LinkedIn)?
[1 = not at all used; 7 = used extensively]

Source

<http://reports.weforum.org/global-information-technology-report-2016/networked-readiness-index/>
<http://reports.weforum.org/global-information-technology-report-2016/technical-notes-and-sources/>

World Economic Forum Networked Readiness Index - Infrastructure and content

Description

The WEF Network Readiness Index assess factors, policies, and institutions that allow countries to fully utilize the information and communication technologies for increased competitiveness and well being. The infrastructure and content indicator looks at mobile network coverage, international internet bandwidth, secure internet servers and availability for digital content to capture the development of ICT infrastructure.

Collection Methodology

Infrastructure and Content is the 3rd pillar of the Networked Readiness Index and consists of the following subcomponents:

- Electricity production - Electricity production is measured at the terminals of all alternator sets in a station. In addition to hydropower, coal, oil, gas, and nuclear power generation, it covers generation by geothermal, solar, wind, and tide and wave energy as well as that from combustible renewables and waste. Production includes the output of electricity plants designed to produce electricity only, as well as that of combined heat and power plants. Total electricity production is then divided by total population. Population figures are from the World Bank's World Development Indicators (retrieved January 4, 2016).
 - Source: Authors' calculations based on International Energy Agency (IEA), World Energy Statistics and Balances 2015, www.iea.org/statistics/; World Bank, World Development Indicators (retrieved January 4, 2016), <http://data.worldbank.org/>; US Central Intelligence Agency (CIA), The World Factbook (retrieved January 5, 2016), <https://www.cia.gov/library/publications/the-world-factbook/>
- Mobile network coverage rate - This indicator measures the percentage of inhabitants who are within range of a mobile cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants within range of a mobile

cellular signal by the total population. Note that this is not the same as the mobile subscription density or penetration.

- Source: International Telecommunication Union (ITU), *ITU World Telecommunication/ICT Indicators Database 2015* (December 2015 edition), <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>
- International Internet bandwidth - *International Internet bandwidth* is the sum of the capacity of all Internet exchanges offering international bandwidth measured in kilobits per second (kb/s).
 - Source: International Telecommunication Union (ITU), *ITU World Telecommunication/ICT Indicators Database 2015* (December 2015 edition), <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>
- Secure Internet servers - *Secure Internet servers* are servers using encryption technology in Internet transactions.
 - Source: The World Bank, *World Development Indicators* (retrieved January 4, 2016), <http://data.worldbank.org>; national sources

Source

<http://reports.weforum.org/global-information-technology-report-2016/technical-notes-and-sources/>

World Economic Forum Networked Readiness Index - Business usage

Description

The WEF Network Readiness Index assess factors, policies, and institutions that allow countries to fully utilize the information and communication technologies for increased competitiveness and well being. Business usage describes the extent of business internet use, innovation environments, technology absorption capacity, and the capacity to innovate.

Collection Methodology

Business usage is the 7th Pillar of the Networked Readiness Index and consists of the following subcomponents:

- Firm-level technology absorption - In your country, to what extent do businesses adopt new technology? [1 = not at all; 7 = adopt extensively] | 2013–14 weighted average
 - Source: World Economic Forum, Executive Opinion Survey, 2013 and 2014 editions
- Capacity for innovation - In your country, to what extent do companies have the capacity to innovate? [1 = not at all; 7 = to a great extent] | 2014–15 weighted average
 - Source: World Economic Forum, Executive Opinion Survey, 2014 and 2015 editions
- PCT patents applications - Number of applications filed under the Patent Cooperation Treaty (PCT) per million population | 2012–2013 average
 - This measures the total count of applications filed under the Patent Cooperation Treaty (PCT), by priority date and inventor nationality, using fractional count if an application is filed by multiple inventors.

- In the absence of reliable data on PCT applications for Taiwan, China and Hong Kong SAR, two advanced economies that are not signatories of the Treaty, the number of applications is estimated as follows: first, we compute the average number of all utility patent applications filed with the United States Patents and Trademarks Office (USPTO) for 2012 and 2013. We then divide this value by the average number of PCT applications for 2012 and 2013, before computing the average of these ratios (1.70) across all countries. In doing this, only economies with a two-year average number of at least 100 USPTO applications and 50 PCT applications are considered. Taiwan, China and Hong Kong SAR are excluded in both cases. We then divide the 2012–2013 average number of USPTO applications filed by residents of Taiwan, China (20,766) and Hong Kong SAR (1,118), respectively, by the ratio above in order to produce estimates for PCT applications. As a final step, we compute the estimates per million population—that is, 522.6 for Taiwan, China and 91.5 for Hong Kong SAR. The estimates are used in the computation of the respective business usage pillar scores of the two economies.
- For more information, consult <http://www.oecd.org/sti/innovationinsciencetechnologyandindustry/oecdpatentdatabases.htm>. The average count of applications filed in 2012 and 2013 is divided by population, using figures from the World Bank’s World Development Indicators (retrieved December 15, 2015).
- Sources: World Intellectual Property Organization (WIPO) PCT Data, sourced from Organisation for Economic Co-operation and Development (OECD), Patent Database, January 2016, <http://www.oecd.org/sti/inno/oecdpatentdatabases.htm>; World Bank, World Development Indicators (retrieved December 15, 2015), <http://data.worldbank.org>; World Economic Forum’s calculations
- ICT use for business-to-business transactions - In your country, to what extent do businesses use ICTs for transactions with other businesses? [1 = not at all; 7 = to a great extent] | 2014–15 weighted average
 - Source: World Economic Forum, Executive Opinion Survey, 2014 and 2015 editions
- Business-to-consumer Internet use - In your country, to what extent do businesses use the Internet for selling their goods and services to consumers? [1 = not at all; 7 = to a great extent] | 2014–15 weighted average
 - Source: World Economic Forum, Executive Opinion Survey, 2014 and 2015 editions
- Extent of staff training - In your country, to what extent do companies invest in training and employee development? [1 = not at all; 7 = to a great extent] | 2014–15 weighted average
 - Source: World Economic Forum, Executive Opinion Survey, 2014 and 2015 editions

Source

http://reports.weforum.org/global-information-technology-report-2015/structure-and-methodology/?doing_wp_cron=1533911654.8462140560150146484375

UN - e-Government Index

Description

The UN Department of Economics and Social Affairs published the e-Government survey which assessed the e-government status of members states of the United Nations. It measures the performance of countries relative to one another. The index measures e-government effectiveness in delivery of public services, identifies patterns in development and potentials of ICTs.

Collection Methodology

The survey assess e-government development in three dimensions: adequacy of telecommunication infrastructure, ability of human resources to promote and use ICTs, and availability of online services and content. The index is derived of many other indicators, such as data from the ITU, Human Capital Index and Online Service Index. This data is collected, the EGDI is an average of these three values from the survey.

Source

<https://publicadministration.un.org/egovkb/en-us/about/methodology>

World Bank - International Internet Bandwidth

Description

International Internet bandwidth refers to the total used capacity of international Internet bandwidth, in megabits per second (Mbit/s). Used international Internet bandwidth refers to the average traffic load of international fibre-optic cables and radio links for carrying Internet traffic. The average is calculated over the 12-month period of the reference year, and takes into consideration the traffic of all international Internet links. If the traffic is asymmetric, i.e. if there is more incoming (downlink) than outgoing (uplink) traffic, the average incoming (downlink) traffic load is used. The combined average traffic load of different international Internet links can be reported as the sum of the average traffic loads of the individual links. International Internet bandwidth (bit/s) per Internet user is calculated by converting to bits per second and dividing by the total number of Internet users. We use the ITU's data from 2016.

This indicator was only collected for the *Digital Deciders*. In order to control for outliers, the *Digital Deciders* were ranked from highest to lowest then allotted a score between 0-1 on a curve, as described above.

Methodology

The ITU does not provide information for how they collect international internet bandwidth.

Source

<http://reports.weforum.org/global-information-technology-report-2016/networked-readiness-index/>