# Data Governance Mapping Project
# Year 4

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## Key Takeaways

- **Data is increasingly important in the age of AI, yet data governance remains a 'work in progress.' Policymakers need to think systemically to develop and refine data governance institutions and strategies if they want to sustain trust in data and data-driven technologies. For example, they will need to find ways to ensure that the datasets underpinning AI are as accurate, complete and representative as possible.**
- **Middle income countries are making progress at data governance, but in general, the countries doing the most are the advanced industrial economies.**
- **Despite the worldwide interest in responsible AI, only 42% of our case studies have adopted responsible AI initiatives. However, we see governments paying greater attention to the data governance challenges posed by AI. In 2023, 6 additional case study countries adopted these initiatives.**
- **Most of the countries in our sample sought public comment on one or more of their data governance initiatives, yet these same countries did not, in general, respond to these comments. In many countries, data governance is not yet a fully democratic process—a feedback loop between the government and the governed.**


**Introduction**

For the past four years, the Hub has mapped whether and how 68 nations and the EU govern the data used to create AI and other data-driven technologies. We created a metric of 26 indicators built on six attributes (ways of thinking about how data can be governed) to illuminate the current state of data governance. We assessed our 68 countries and the EU sample with yes or no questions, using primary source data provided by these governments on official websites. The OECD defines data governance as "diverse arrangements, including technical, policy, regulatory or institutional provisions, that affect data and their cycle (creation, collection, storage, use, protection, access, sharing and deletion) across policy domains and organizational and national borders."[1] Hence, our metric includes rules, principles, agreements, strategies, structures, policies, and processes devised by policymakers to govern various types of data at the national and international level.

However, since Open AI introduced Chat-GPT, the role of data in the economy and polity has changed dramatically. For example, nations struggle to enforce their data protection and copyright laws. Moreover, despite understanding that hallucinations are partially caused by inaccuracy, incomplete, and biased datasets, no government has yet incentivized or required greater accuracy, completeness and representativeness in the datasets that underpin generative AI.[2]

Hence, data governance is not easy, and policymakers must always be flexible to respond to new uses of data or data driven technologies. Not surprisingly, we found continuity and change in our 26 indicators over 4 years:

[1] https://www.oecd.org/digital/data-governance/
[2] https://shorturl.at/Up5OE; https://shorturl.at/OiuPQ; and https://doi.org/10.1787/13d38f92-en

**Continuity in Findings:**

1. The countries that scored the best on data governance in 2020 (the UK, Australia, Germany, New Zealand, France, Spain, Brazil, Canada, Estonia, and Spain) continued to make data governance a top priority in 2024. Some countries moved one or two places up or down, but in general, the countries that met more of our indicators are upper- and middle-income countries with significant digital prowess. The countries that scored the worst also remained consistent (Egypt, Algeria, Botswana, Cuba and Iran). Except for Iran[3], these tended to be lower income developing nations with lower levels of digital prowess (Chart 1).
2. Most countries are adopting key elements of a comprehensive approach to data governance. More than 75% of our 69 case study nations have enacted a data protection law, a freedom of information law, created an open data portal, have a personal data protection body, or held a public consultation related to data governance. More than 60% have an AI strategy (Chart 5 below).
3. Most governments ask for public comments on their governance of data (75%) but only 26% of governments respond to these comments. We worry that this means that many governments have yet to establish an effective feedback loop for many aspects of data governance.

[3] Iran educates lots of mathematicians, computer scientists and cyber professionals. It has a strong and growing digital economy. https://shorturl.at/cAMAG; and https://blogs.microsoft.com/on-the-issues/2023/05/02/dtac-iran-cyber-influence-operations-digital-threat/

**Change in Findings:**

1. Middle income countries such as Argentina, Nigeria, Ukraine, Tanzania, and the Philippines have made significant improvements in data governance strategies, policies, laws, and institutions.
2. A growing number of countries are trying to ensure that the AI developed and deployed in their nations are done in a responsible manner. Hence, in 2023, we saw six countries adopt responsible AI initiatives, and two countries provide a right to be protected from automated decision making. Still, as noted above, only 42% of our case studies have responsible AI initiatives.

| Table 1<br>These Countries met these Indicators in 2024 | | |
|---|---|---|
| **Indicator** | **Countries making Changes** | **Number of new countries meeting indicator** |
| Responsible AI Initiatives | Chile, Indonesia, Saudi Arabia, Ukraine, Israel and Argentina | 6 |
| Budapest Convention | Tunisia | 1 |
| Personal Data Protection Law | Nigeria, Algeria, Jordan | 3 |
| Personal Data Protection Body | Algeria and Tanzania | 2 |
| Convention 108+ | Hungary and Switzerland | 2 |
| Right to be protected from Automated Decision-Making | Nigeria | 1 |
| Right of Data Portability | Nigeria | 1 |
| Trust Framework for Digital Identity Management | European Union | 1 |
| Public Consultation on Data | Russia | 1 |
| Government Response to Consultation | Poland | 1 |
| Open Government Partnership | Israel | 1 |
| OECD AI Principles | Egypt | 1 |
| Binding Trade Agreements on Cross-Border Data Flows | Colombia | 1 |

**Year 4 Results**

Chart 1 shows each country's overall ranking by summing all 26 indicators. The colors conform to our attributes–our six groupings of the 26 indicators. These attributes comprise our vision of the different dimensions of action a nation takes as it works to govern data in a comprehensive manner.

The UK, Australia, Germany, France, and New Zealand, take the most comprehensive approach to data governance at the national and international levels. For all four years of the metric, these countries have met more of the indicators.

**Chart 1: Country Scores**

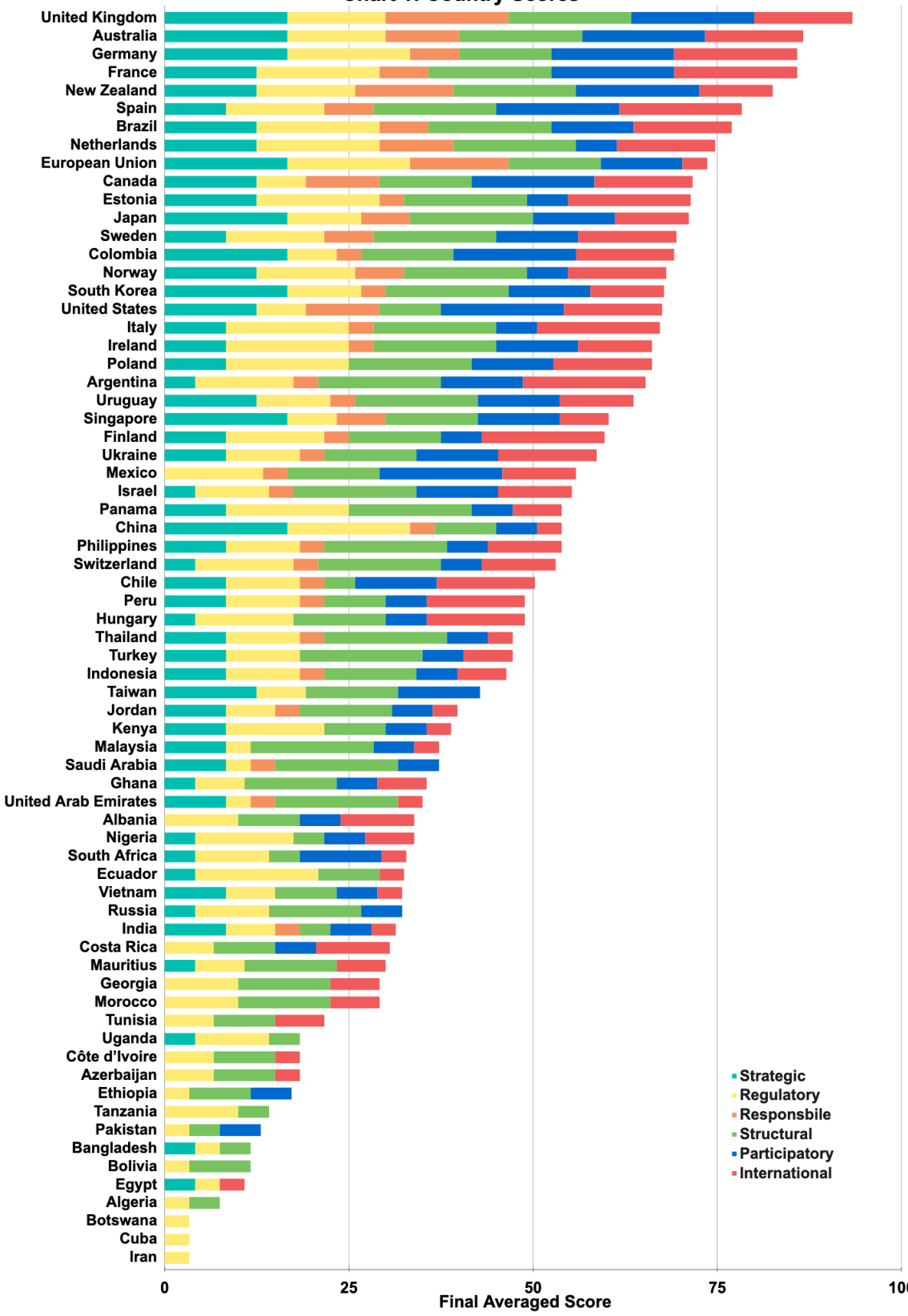


Chart 2 aims to illuminate performance on our metric and income groupings. It shows the average attribute score for the countries from each of the World Bank income groups. Most of our case study countries have adopted regulatory and structural change. Our two lower income countries, Ethiopia and Uganda, did not fulfill any of the responsible or international indicators.

**Chart 2: Income Category Average Attribute Scores**

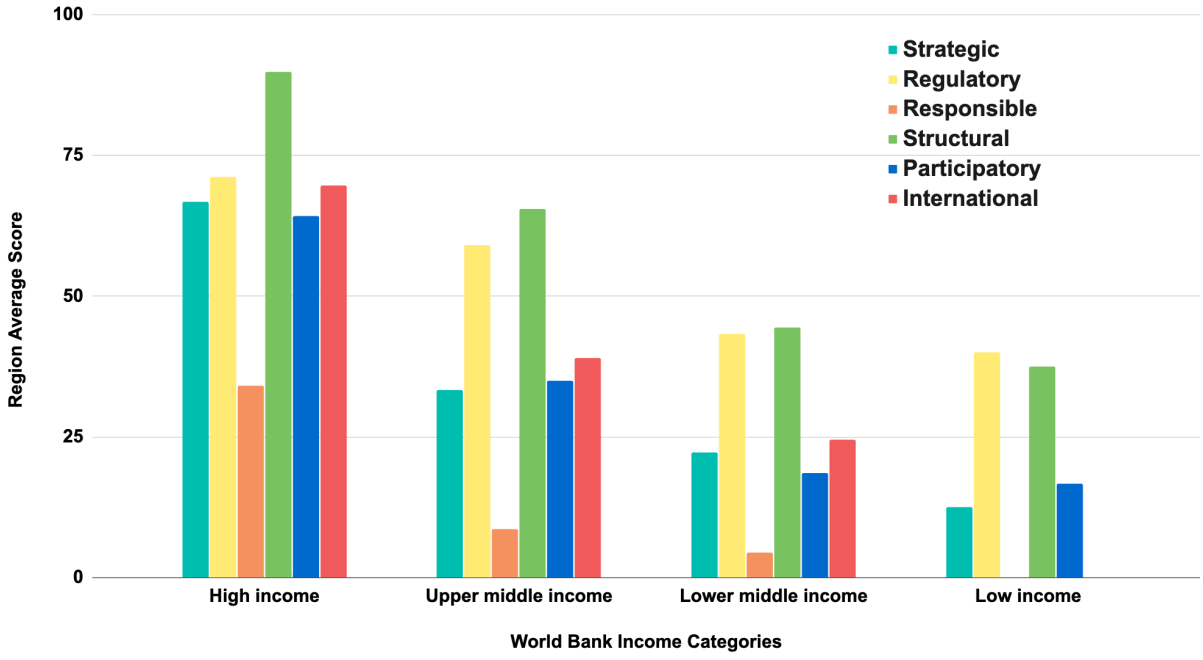


Chart 3 compares the average attribute score for our sample of 68 countries and the EU that are OECD members with those that are not members of the OECD. Overall, OECD members met significantly more indicators than non-OECD members.

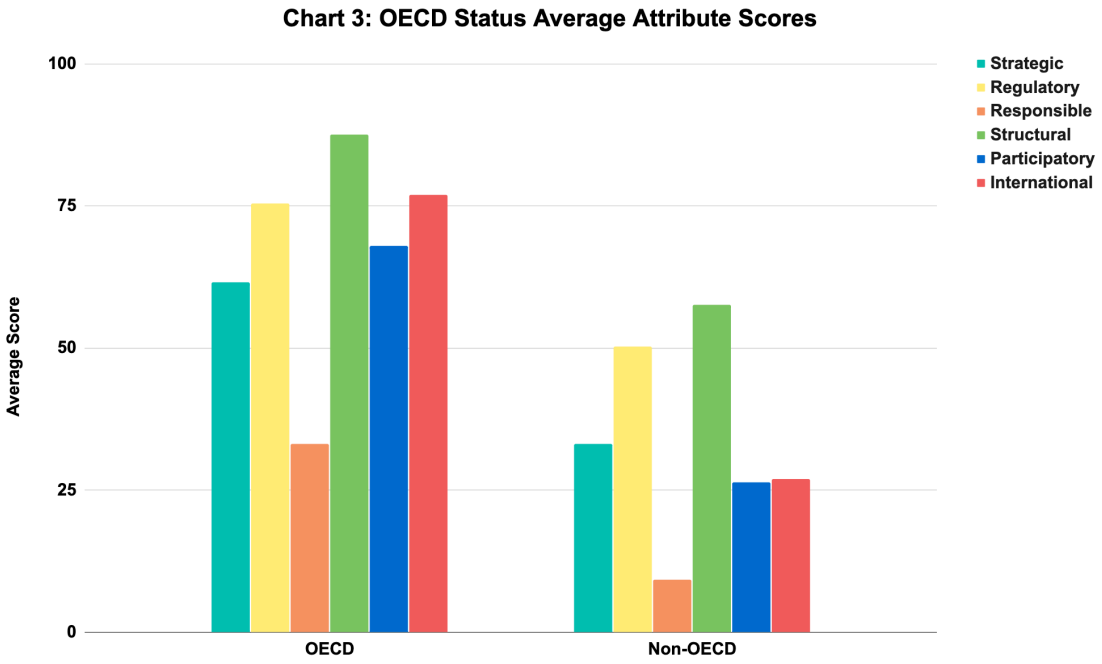
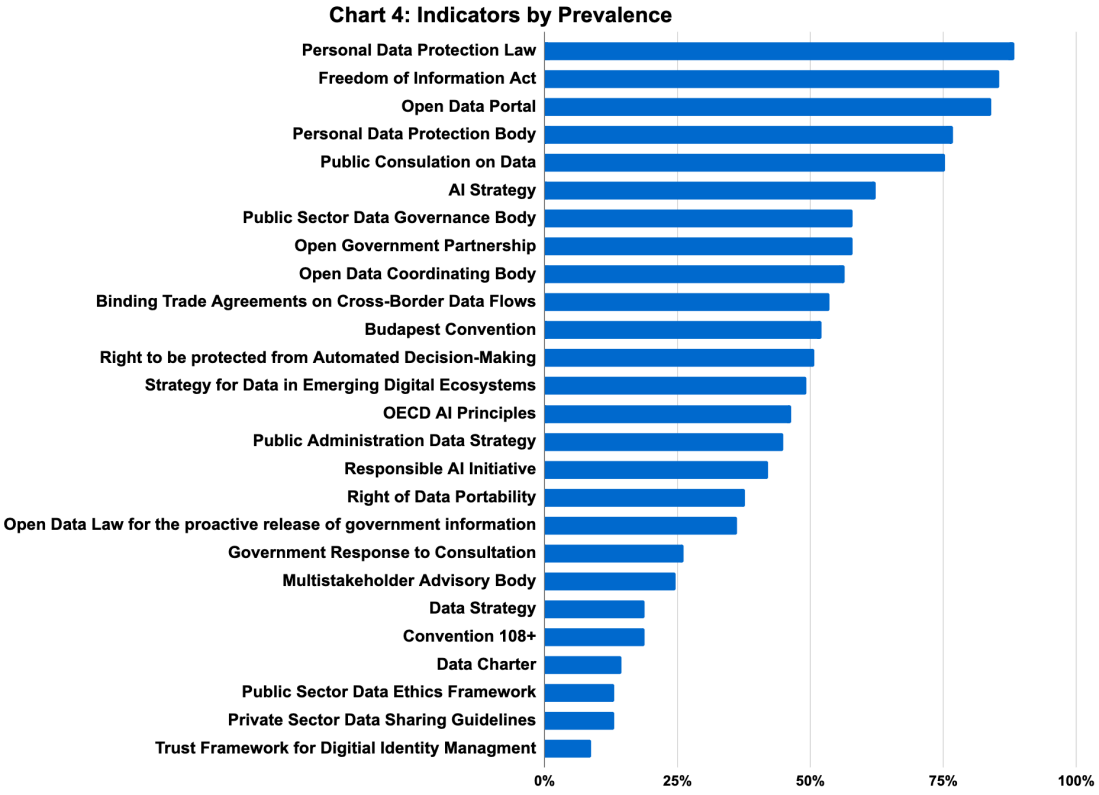


Chart 4 shows the percentage of countries in our set that satisfy each of the 26 indicators. We found 88% of countries have a personal data protection law. 86% of countries have a Freedom of Information Act., 84% of our cases have established open data portals and 77% personal data protection bodies. In contrast, several of our case studies have not yet adopted a data charter, public sector ethics frameworks, private sector data sharing guidelines, or a trust framework for digital identity management.




The next section describes our methodology and specific country findings.

## Methodology

### Countries Included in this Mapping

In its first iteration (which included data up to 2020), our analysis covered 51 countries and the EU. In the second iteration 17 new countries were added: Albania, Algeria, Botswana, Colombia, Costa Rica, Cuba, Ecuador, Egypt, Ghana, Italy, Mauritius, Panama, Peru, Poland, Spain, Tanzania, and Tunisia. In sum, these countries represent approximately one third of the world's 192 nations and include a mix of regions and income levels.

For the last two years, including this current iteration, we have examined 68 countries and the EU. A breakdown of all the countries in this report viewed by income and region can be seen in Table 3. A full list of countries can be seen in the detailed view of data governance mapping section of this report.

Table 3: Breakdown of Countries by Income and Region

| Income category | North America | Europe & Central Asia | East Asia & Pacific | Latin America & Caribbean | Middle East & North Africa | Sub-Saharan Africa | South Asia |
|---|---|---|---|---|---|---|---|
| High income | 2 | 14 | 6 | 2 | 3 | 0 | 0 |
| Upper middle income | 0 | 5 | 3 | 9 | 1 | 3 | 0 |
| Lower middle income | 0 | 1 | 3 | 1 | 5 | 5 | 3 |
| Low income | 0 | 0 | 0 | 0 | 0 | 2 | 0 |

### How We Developed Our Methodology

Data governance, like the data-driven economy, is constantly evolving, reflecting changes in technology, society, and policymakers' will and expertise. Consequently, data governance is a work in progress and a distinct experience for all nations. Nations adopting a comprehensive approach develop strategies, policies, and processes, adapt organizational structures and work

to accommodate several types and contexts for data use and re-use.[4] Governments that can accommodate such change in a responsive, competent, and anticipatory manner are likely to build and maintain trust in their institutions.[5]

To create this metric, we first discussed how organizations respond to change and in particular how they formulate changes to organizational strategy and structure.[6] Next, we studied how others analyzing governance, including researchers at the Worldwide Governance Indicators and the Ibrahim Index of Governance, thought about how to define, measure, and compare it.[7] We then turned to metrics of data governance which helped us understand how to assess the impact of data governance policies on, for example, data availability, accessibility, and re-use.[8]

Building on our review, we divided data governance into what we see as its six primary attributes. These attributes, described below, can be thought of as the different dimensions of action a nation takes as it works to govern data in a comprehensive manner.

[4] Benfeldt Nielsen, Olivia, "A Comprehensive Review of Data Governance Literature" (2017). Selected Papers of the IRIS, Issue Nr 8 (2017). 3. https://aisel.aisnet.org/iris2017/3
[5] https://www.oecd.org/governance/trust-in-government/
[6] Following Alfred D. Chandler, Jr. Strategy and Structure: Chapters in the History of the Industrial Enterprise. MIT Press, 1962.
[7] The World Bank defines governance as "the traditions and institutions by which authority in a country is exercised." The Bank's Worldwide Governance Indicators assesses 6 dimensions of governance, which include policies, processes, and feedback loops (Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi, Worldwide Governance Indicators: Methodology and Analytical Issues, Policy Research Working Paper 5430, September 2010, p.4) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130. In contrast the Ibrahim Index of Governance defines governance as the provision of political, social, and economic public goods and services that every citizen has the right to expect and that the government should deliver to its citizens https://mo.ibrahim.foundation/iiag.
[8] We reviewed the OECD's Our data Index, World Bank's Statistical Performance Indicators, the Open Data Inventory, and the European Open Data Maturity Assessment.

| The Six Attributes of Data Governance |
|---|
| **Strategic**: The government has a vision or plan for different types of data in the economy and polity. |
| **Regulatory**: The government constructs a legal regime around data's types and/or uses. |
| **Responsible**: The government thinks about the ethical, trust, and human rights implications of data use and re-use. |
| **Structural**: The government alters institutional structures in response to data-driven transformation. |
| **Participatory**: The government informs its constituents about its activities and asks for public comment, with the intention of incorporating their feedback. |
| **International**: The government joins with other nations in shared international efforts to establish data governance rules and norms. |

Once we determined the attributes, we began searching for specific pieces of evidence that we could take as indicators of the broader attributes. We ended up with 26 indicators as delineated in Table 4. For additional information on the definition and purpose of each indicator, as well as guidelines on how we made decisions, please see the Report Background and Guidelines on our website.

| Table 4: 26 Indicators List | |
|---|---|
| Strategic | • National Data Strategy<br>• Public Administration Data Strategy<br>• AI Strategy<br>• Strategy for Data in Emerging Digital Ecosystems |
| Regulatory | • Personal Data Protection Law<br>• Open Data Law for the proactive release of government information<br>• Freedom of Information Law<br>• Right to be protected from Automated Decision-Making<br>• Right to Data Portability |
| Responsible | • Data Charter<br>• Public Sector Data Ethics Framework<br>• Responsible AI Initiatives<br>• Trust Framework for Digital Identity Management<br>• Guidelines for Nongovernmental Data Sharing |
| Structural | • Personal Data Protection Body<br>• Open Data Portal<br>• Open Data Coordinating Body<br>• Public Sector Data Governance Body |
| Participatory | • Public Consultation on Data<br>• Government Response to Consultation<br>• Multistakeholder Advisory Body |
| International | • Convention 108+<br>• Open Government Partnership<br>• OECD AI Principles<br>• Binding Trade Agreements on Cross-Border Data Flows<br>• Budapest Convention |

**Scoring**

We determined individual country scores as follows: If a country had the indicator in full, we gave it a 1, if not we gave it a 0. We then translated these 1's and 0's into scores that could be used to compare the countries. Because we viewed each indicator as essential, the team decided to weigh each indicator equally within its attribute, regardless of the number of indicators contained within that attribute. Each attribute's score is therefore the sum of its indicators divided by the number of indicators expressed as an integer out of 100. Similarly, we believe each of the six attributes is vital and interdependent, so we gave each of the six attributes equal weight in the final scoring by averaging the scores of the six attributes. This strategy enabled us to make each country's final score also out of 100.

**Limitations/Caveats for the Hub's Metric of Data Governance**

We recognize that our methodology has several limitations. First, the metric covers personal, public, and indirectly proprietary data (through rules that govern the use of algorithmic decision making).[9] We do not discuss satellite or other types of data. Second, we do not claim to cover a representative sample of the world's 192 countries but instead a diverse sample of countries at various levels of development, income or digital prowess. Third, our metric reflects our bias as citizens of a democracy. For example, we emphasize participatory and accountable governance as well as guidelines for ethical, responsible or trustworthy data governance. Hence, while we designed the metric based on facts which we include as indicators, we acknowledge that these indicators reveal our biases.

Fourth, our indicators reflect the state of our understanding of data governance. We rely on the countries we are evaluating for the data to develop our metric, an endogeneity problem. However, these countries have little incentive to misrepresent their policies, visions, and processes. Moreover, many of these nations adhere to international commitments that encourage them to make their policies in an open, participatory, and accountable manner such

[9] We do not address financial data, intellectual property rights, research data, government statistics, ICT and digital infrastructure, or cybersecurity. We also do not include data on the quality, enforcement, outcomes, or public opinion of data governance.

as the WTO or the Open Government Partnership.[10] Nonetheless, we cannot say whether an indicator definitively does not exist in a country. To ensure our data is as correct as possible, we constantly monitor data governance changes and will revise the metric as needed.

Fifth, we do not do correlations with our data to human rights, governance, democracy, and other indexes. We only have four years of data and that is too short a period to show change over time.

Finally, we do not measure the effectiveness of data governance among our sample nations. The indicators do not reveal whether policies or agreements are enforced; if ethical frameworks are anything more than bluster; whether new institutional structures are doing what they were designed to do; or whether policymakers revise policies in response to public comment.

[10] For example, 68 of the 68 countries and the EU countries in our original sample (except for Iran) are obligated to make domestic regulations that can affect trade (such as personal data protection rules) in a transparent accountable manner and to encourage public comment or they could be challenged in a trade dispute. On the WTO see, Susan Ariel Aaronson and M. Rodwan Abouharb, "Unexpected Bedfellows: The GATT, the WTO and Some Democratic Rights," International Studies Quarterly, 2011) 55, 379—408. In addition, 32 of our case studies are members of the Open Government Partnership. OGP, countries must commit to uphold the principles of open and transparent government by endorsing the Open Government Declaration. Open Government Declaration.