A Critical Review of the Government AI Readiness Index 2024[•]

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First – Key Data of the Index

1- Issuing Organization: The index is published annually by Oxford Insights, a consultancy organization established in 2016 and headquartered in London. It issues the index every year to assist governments in leveraging new technologies and innovative approaches to improve public services and citizens' lives..

2- Report Timing: The index was released in December 2024.

3- Report Language: The index is issued in English.

Second – Pillars, Dimensions, Sub-indicators, and Data Sources of the Index

The index is issued annually and evaluates the AI readiness of 188 countries, aiming to support governments in benefiting from AI to provide better services and address public challenges with greater precision and impact. This year's index comprises three main pillars, consisting of 10 dimensions and 40 sub-indicators, as follows::

1. Government:

Evaluates the extent to which the government has a strategic vision for AI development and management, supported by appropriate regulation and attention to ethical risks (governance and ethics), and the strength of internal digital capabilities, including skills and practices that support adaptability to new technologies. This is assessed through the following dimensions:

A- Vision:

Answers the question: Does the government have a vision for AI implementation through a national AI strategy indicator?

Data is collected through desk research relying on (OECD AI Policy Observatory, UN IDIR AI policy portal).

If a country has officially issued a national AI strategy, it scores 100 points; if it has a proposed strategy or clear evidence of development, it scores 50 points; if there is no evidence of a national AI strategy, it scores zero.

B- Governance and Ethics:

Answers the question: Are there appropriate regulations and ethical frameworks to implement AI in a manner that builds trust and legitimacy?

Assessed through the following indicators:

- **Data protection and privacy legislation**: Based on desk research using (GovTech

[•] *"Government AI Readiness Index 2024", Oxford Insights, available at: https://oxfordinsights.com/wp-content/uploads/2024/12/2024-Government-AI-Readiness-Index-2.pdf , 15 January 2025*

Maturity Index and IAPP Global Privacy Law and DPA Directory). If a law is in force, the country scores 100 points; if a bill is pending, 50 points; if no evidence, zero points.

- **Cybersecurity**: Based on the cybersecurity index.
- **Quality of regulatory frameworks**: Based on global governance indicators.
- **AI ethical principles**: Based on desk research. If the country adopts OECD principles or independent frameworks aligned with these values, it scores 100 points; if principles exist or are in development in line with OECD, 50 points; else zero.
- **Accountability**: Based on global governance indicators.

C- Digital Capability:

Answers: What is the government's internal digital capability? Assessed by:

- Online digital services: UN e-Government Development Index.
- ICT infrastructure: Digital Government Service Experience Maturity Index.
- Government support for AI adoption: World Economic Forum CEO survey.
- AI skills development in the public sector: Global Responsible AI Index.

D- Adaptability:

Answers: Can the government change and innovate effectively? Assessed by:

- Government effectiveness: Global governance indicators.
- Government responsiveness to change: World Economic Forum CEO survey.
- Procurement data: Global Data Barometer.

2. Technology Sector Capacity:

Measures the extent to which public bodies rely on a strong supply of AI tools from the country's technology sector. The sector must have a high innovation capacity, an environment supporting entrepreneurship, good R&D spending, and strong human capital levels to develop advanced AI solutions and respond to evolving government needs. This is assessed through:

A- Maturity:

Answers the following question: Does the country have a tech sector capable of providing AI technologies to governments? Through:

- Number of AI startups: CB Insights.
- Number of non-AI tech startups: CB Insights.
- Per capita value of ICT service trade: UNCTAD.
- Per capita value of ICT goods trade: UNCTAD.
- Spending on software: Global Innovation Index.

B- Innovation Capacity:

Answers the following question: Does the tech sector have conducive conditions for innovation? Through:

- Time taken for dealing with government regulations: World Bank development indicators.
- Availability of investment capital: Deal Room.
- Spending on R&D: UNESCO.
- AI adoption for innovation: World Economic Forum CEO survey.
- AI research papers: Scimago.

C- Human Capital:

Answers the following question: Do the population possess the skills to support the tech sector? Through:

- STEM graduates: UNESCO.
- GitHub users per 1000 population: GitHub Innovation Graph data.
- Female STEM graduates: UNESCO.
- Quality of engineering and technology programs in higher education: QS Engineering & Technology rankings.
- ICT skills: Network readiness index.

3- Data and ICT Infrastructure:

Assesses the availability of high-quality data to avoid bias and errors, as well as its representativeness of citizens in a country (data representation). Also assesses the availability of infrastructure necessary to operate AI tools and provide them to citizens. This is assessed through:

A- Infrastructure:

Answers the following question: Does the country have good technological infrastructure to support AI? Through:

- Telecommunications infrastructure: UN e-Government Development Index.
- Supercomputers: Top500.
- Broadband quality: Internet Inclusiveness Index.
- 5G infrastructure: Mobile e-wallet regulatory index.
- Adoption of key technologies (AI, Big Data, VR/AR): World Economic Forum CEO survey.

B- Data Availability:

Answers the following question: Is there good availability of data usable for AI model training? Through:

- Open data: Global Data Barometer.
- Data governance: Desk research relying on GovTech Maturity Index.
- Mobile subscriptions: ITU data.
- Households with internet access: ITU data.
- Statistical capacity: SPI GitHub report.

C- Data Representation:

Answers: Are the available data likely representative of the population? Through:

- Gender gap in internet access: Mobile e-wallet regulatory index.
- Affordability of mobile devices: Internet Inclusiveness Index..

Third – Methodology of the Index

1- Missing Values:

Only countries with values for more than 50% of the indicators are included in the final index. For this reason, the following countries were excluded:

- Democratic People's Republic of Korea
- Dominica
- Micronesia (USA)
- Monaco
- Nauru
- Palau
- Tuvalu

2- Imputation of Missing Data:

For missing data in some indicators, peer group averages were calculated by geographical region and World Bank income group. For 11 countries, peer averages could not be calculated due to unique grouping or missing data in all peers. These countries are:

- Afghanistan
- Algeria
- Canada
- Iran
- Iraq
- Libya
- Maldives
- Seychelles
- Syria
- USA
- Yemen

For these countries, no peer values were estimated.

3- Result Calculation:

A- Normalization:

All results were normalized between 0 and 100 using the formula:

$$\frac{x - x_{min}}{x_{max} - x_{min}}$$

Normalized score = (x−xmin) (xmax−xmin) × 100\text {Normalized score} =

\frac {(x - x_{min})} {(x_{max} - x_{min})} \times 100 Normalized score =

(xmax−xmin)(x−xmin)×100

Where xminx_{min}xmin is the minimum observed value and xmaxx_{max}xmax the maximum observed value.

Exceptions:

- Mobile subscription indicator's xmaxx_{max}xmax was set to 130 (subscriptions beyond this do not increase the score).
- Female STEM graduates indicator's xmaxx_{max}xmax was set to 50 (scores reflect progress toward gender parity; values above parity do not increase scores).
- Indicators "time to deal with government regulations" and "gender gap in internet access" were normalized using 100−x100 - x100−x so that lower values correspond to higher scores.

B- Handling Skewed Indicators:

Indicators were identified as skewed if they had absolute skewness > 2.0 and kurtosis > 3.5, or kurtosis > 10. The skewed indicators are:

- Number of AI startups
- Number of non-AI tech startups
- Per capita value of ICT services trade
- Per capita value of ICT goods trade
- R&D spending
- AI research papers
- GitHub users per 1000 population
- Supercomputers

Since many countries had zero values in some indicators, skewness was reduced via logarithmic transformation log (x+1), followed by normalization.

C- Overall Score:

The overall score was calculated by averaging scores for each dimension, then averaging dimensions per pillar, and finally averaging the three pillars equally weighted.

Fourth – Index Results

1. The Growing Recognition of Artificial Intelligence as a Driver of National Development:

The number of national artificial intelligence (AI) strategies has increased significantly this year, with twelve new strategies announced three times the number declared in 2023. This surge reflects the formalization of AI visions by low- and middle-income economies.

Notably, more than half of these strategies originate from low- and middle-income countries, indicating growing momentum among nations that have historically lagged in AI governance. Strategies have been launched across various regions and continents, including Sub-Saharan Africa (Ethiopia, Ghana, Mauritania, Nigeria, and Zambia), South and Central Asia (Sri Lanka and Uzbekistan), and Latin America and the Caribbean (Costa Rica and Cuba). These regions traditionally underrepresented in the formulation of national AI strategies are demonstrating a clear commitment to establishing the foundational governance frameworks required to enhance AI readiness.

High-income countries have also contributed to the overall increase, albeit at a slower pace than in previous years. For example, Romania released a new strategy in 2024, reflecting continued, albeit gradual, progress among more advanced economies.

Looking ahead, international cooperation and knowledge exchange are likely to play a critical role in sustaining this momentum. Such efforts will be essential in addressing governance gaps as more countries move to formalize their AI strategies and strengthen their capacities for effective AI adoption.

2- The United States Leads in AI Readiness:

The United States ranks first in global AI readiness, largely due to its exceptional performance in the technological sector capacity pillar. It boasts the largest and most mature technology market among the top five countries. The U.S. is home to many of the world's leading technology companies and maintains a robust network of suppliers providing AI tools for general-purpose applications. This solid ecosystem underpins the country's leadership in AI preparedness.

3- Middle-Income Economies are Closing the AI Readiness Gap by Getting the Fundamentals Right:

Several middle-income countries have made significant strides in AI readiness, with some breaking into the top 50 global rankings. These improvements are particularly evident in dimensions such as strategic vision, governance, ethics, and data availability progress largely driven by investments in telecommunications infrastructure.

While challenges remain in other areas, these nations are moving in the right direction. Their achievements in governance and data readiness serve as a strong foundation for future advancements in digital capacity, innovation, and the development of a more mature technological sector.

4. Global AI Governance Continues to Take Shape Amid Growing Regional Collaboration

As AI continues to advance, global governance and international cooperation have become essential for its responsible and effective adoption. Shared frameworks, international standards, and regional partnerships provide governments with resources, best practices, and a common understanding of AI's potential and risks.

A significant milestone in this context is the Council of Europe's AI Treaty—the first legally binding international agreement on artificial intelligence. Signed by eleven countries, the treaty establishes a framework to ensure that AI supports human rights, democracy, and the rule of law. Simultaneously, the International Network of AI Safety Institutes, launched at the 2024 Seoul AI Summit, brings together countries such as the United States, Japan, and France to advance the science of AI safety.

These initiatives reflect a growing global commitment to collaborative governance and demonstrate efforts to build international trust in AI development. By aligning with global and regional governance efforts, governments can enhance their readiness, adopt AI responsibly, and collectively address the challenges and opportunities that AI presents.

Fifth – Analysis and Commentary on the Index Findings

A critical reading of the Government AI Readiness Index reveals a number of strengths and weaknesses.

1. Strengths:

A- The index highlights progress, identifies gaps, and provides actionable insights for policymakers seeking to integrate artificial intelligence into public service delivery.

B- It is regarded as a reliable source for decision-makers and has been formally adopted as a standard by national governments and cited by leading organizations such as UNESCO and the G20.

C- The inclusion of indicators related to data representation contributes to addressing growing concerns around AI ethics, particularly in mitigating algorithmic bias.

D- The emphasis on AI as a tool for fostering regional and international cooperation supports the notion that collective action can enable governments to enhance their readiness, adopt AI responsibly, and address the challenges and opportunities AI presents.

E- The growing recognition of AI as a driver of development underscores the relevance and timeliness of the index.

F- The United States' leading position in AI readiness lends credibility to the index,

reflecting its alignment with real-world dynamics.

2. Weaknesses:

A- The index faces challenges related to data scarcity. For many indicators lacking complete data, the average value of a country's peer group is used as a substitute, which compromises the accuracy of the index in assessing those specific countries.

B- The selection of indicators for which data are unavailable for a significant number of countries such as the number of AI startups, non-AI tech startups, and supercomputers reflects poor indicator selection and undermines the comprehensiveness and fairness of the index.

C- The uniform weighting of indicators, without accounting for their relative importance, diminishes the reliability of the rankings and the quality of the overall assessment.

D- Reliance on CEO perceptions to assess certain indicators such as government responsiveness, AI adoption for innovation, and public sector support for AI may introduce bias, particularly where executives may hold favorable or unfavorable views toward specific governments.

Conclusion:

The Government AI Readiness Index is regarded as a reliable resource for policymakers. It has been adopted as an official benchmark by national governments and is referenced by leading organizations such as UNESCO and the G20. The index serves as a practical tool that supports governments and decision-makers, aiming to address the lack of data on the foundational elements required to enhance service delivery efficiency, ensure accessibility, and improve the overall citizen experience.

The index evaluates the readiness and capacity of countries worldwide to adopt artificial intelligence technologies in public services. It is based on three key pillars: government, technological sector capacity, and data representation and telecommunications infrastructure. However, the index faces certain limitations. For some indicators lacking data, it substitutes the average value of a country's peer group, which may reduce the accuracy of assessments. Additionally, applying uniform weights to all indicators without accounting for their relative importance weakens the validity of the rankings and the overall quality of the results.