Open, Useful and Re-usable data (OURdata) Index: 2019

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This paper was authorised for publication by the OECD Director of Public Governance, Marcos Bonturi.

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Abstract

This paper presents and discusses the general findings and key policy messages of the 2019 OECD Open, Useful and Re-usable data (OURdata) Index, and provides a detailed analysis of the results for each pillar and sub-pillar. Additionally, it assesses the main advancements and challenges related to the design and implementation of open government data (OGD) policies in OECD member and partner countries by comparing the results for 2019 with those of the 2017 edition. This policy paper contributes to the OECD work on the digital transformation of the public sector, including digital government and data-driven public sector and open government data.

Introduction

The concept of 'open public data' was first defined by a group of open government advocates at a meeting in Sebastopol, California. Today, thirteen years later, it is useful to reflect upon the evolution, status, and future of open government data (OGD) in OECD countries. This is especially true given the current challenges OECD countries face in developing a common understanding of how to balance data openness with data protection and risk management when implementing open data policies and initiatives.

Open government data promotes transparency, accountability and value creation by making government data available to all with no restriction for its re-use. Public bodies produce and commission huge quantities of data and information. By making their datasets available, public institutions become more transparent and accountable to citizens. By encouraging the use, reuse and free distribution of datasets, governments promote business creation and innovative, citizen-centric services.

The OECD work on open government data, which started in 2013, has constantly expanded to reflect the growing importance of this policy area in OECD member and partner countries. The OECD OURdata Index measures the availability, accessibility and re-use of government data. The results– can help increase data flows, challenge data monopolies and inform automated decision-making models based on emerging technologies such as AI. Open government data is a public good, which should be delivered with a purpose, proactively, and with a focus on re-use, in line with user needs and its potential contribution to value co-creation. At the same time, it should be governed bythe right policies in terms of data protection, privacy, transparency, ethics and digital rights.

Today, most OECD countries have adopted "open by default" approaches, paving the way for more mature open government data policies that can promote global policy actions in areas such as public sector integrity, gender equality, and sustainable development.

Nevertheless, the results of the 2019 OURdata Index confirm a need for more sustainable approaches to open government data policies and initiatives. Long-term impact requires proper governance frameworks, competent civil servants, high-level political commitment, and the recognition of the crucial role of the data ecosystem in extracting value from data. The value of open government data policies can be diluted if countries focus on the supply side and fail to promote open data re-use inside and outside the public sector, as value creation demands the prioritisation of re-use. Knowing and stimulating demand therefore becomes essential for mobilising and securing active inclusion of different actors such as citizens, public officials, non–governmental organisations and businesses. Finally, without the adoption of the right monitoring and measurement efforts to demonstrate impact, open government data initiatives run the risk of fading away.

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Key Policy Messages

- **The results of the OECD 2019 Open Useful Reusable Data (OURdata) Index, and the OECD average increase for 2019 in comparison to 2017, reveal overall improvements across OECD countries.** However, challenges remain in terms of policy sustainability and maturity illustrated by countries whose ranking has dropped. This can be explained due to either political inertia, changing institutional governance arrangements, or competing policy priorities affecting the sustained implementation of open data initiatives.

  - ☞ *OECD governments should acknowledge that extracting value from the application of open government data implies granting this policy area with enough political support, and an enabling environment to sustain implementation efforts in the long term.*

- **A growing number of OECD countries have scaled up the adoption of 'open by default' approaches by including formal requirements in open data strategies, laws, regulations and other instruments.** This contributed to stronger governance frameworks and the rise in the OECD average for data availability between 2017 and 2019.

  - ☞ *OECD governments should build on these foundations to advance towards a common approach in the publication and use of open government data in areas such as public sector integrity, sustainable development, and gender policies.*

- **Governments are increasingly enabling their open government data portals as communication and feedback tools.** However, many are still understood primarily as websites, 'data catalogues', or top-down platforms driven by data supply, rather than being seen as platforms to foster innovative, collaborative and knowledge sharing practices centred around easy access to and sharing of data.

  - ☞ *OECD governments should conceive OGD portals as open, democratic and diverse spaces to engage the digital community in order to fully embrace 'open by default' and 'government as a platform' approaches.*

- **Formal open government data requirements are essential but insufficient** to ensure the release of, and access to, re-usable datasets on portals of good quality and which respond to a specific purpose or demand.

  - ☞ *OECD governments should ensure that de facto data release happens in proactive, timely and understandable fashions for both humans and machines (e.g. using metadata, common standards); and should address issues of quality and biases in data collection and generation.*

- **Implementing trustworthy data governance plays a key role in securing advancements and sustainability of open data policies, while safeguarding citizens' rights and promoting their control over their own data.**

  - ☞ *OECD governments should ensure that open data policies and initiatives fit within broader efforts targeting the establishment of data governance frameworks for the public sector. This would foster alignment of open policies with data protection regulations de facto, and facilitate monitoring of compliance. Additionally, with growing global concerns over personal data*

protection, stakeholder engagement would offer the opportunity to increase policy ownership and trust.

- **OECD countries are growing more aware that availability of valuable open data is more relevant than quantity. This led to an acceleration of initiatives guiding the standardisation and production of good quality data from earlier stages of the data value cycle (data generation).**
  - ☞ *OECD governments should sustain practices aimed to secure the publication of high-value data taxonomies and their integration into the data value chains in different sectors towards greater social, government and business innovation.*

- **The political culture and administrative structure of a country, including multi-level governance arrangements, appear to be reasons at times slowing down data release.** Yet, evidence from front-running OECD countries points to the fact that even authorities within federal systems have found ways to successfully overcome these challenges.
  - ☞ *OECD governments should focus on establishing data federation models that facilitate data discoverability, while keeping the right levels of data autonomy at the local level and quality assurance at the central level.*

- **Across OECD countries, open data is becoming more intertwined with the development of government-wide data governance frameworks (e.g. national data strategies) and data management capacities, aimed to build an overall environment within the public sector that enables and incentivises data re-use.**
  - ☞ *OECD governments should not ignore the specific underlying arrangements needed to enable the deliver value from open government data in order to sustain and multiply its benefits and impact.*

- **A number of OECD countries previously seen as more mature in terms of open data policies are today doing considerably less to reach external data communities to encourage re-use outside the public sector.**
  - ☞ *OECD governments should maintain their efforts aimed to promote the re-use of open government data outside the public sector, and its real-time integration into the data value chain of key actors, (e.g. through APIs) as essential to support the long term continuity of open data policies.*

- **OECD countries are taking further steps towards monitoring the economic and social impact of open data.** This involves identifying, collecting and displaying examples of re-use on central/federal open data portals.
  - ☞ *OECD governments should increasingly target measurement efforts to better understand the effects of data re-use within the public sector, particularly as they are coming to grips with the need to monitor the impact of OGD re-use.*

Overview of the OURdata Index

This document presents the results of the 2019 edition of the OECD Open, Useful, and Re-usable data (OURdata) Index. The findings presented in this policy paper draw upon the data collection and analysis that took place across OECD member and partner countries in the course of 2018 and the first half of 2019. The 2017 edition and a pilot version launched in 2015 preceded this third iteration of the Index[1].

> **The OURdata Index benchmarks the design and implementation of open data policies at the central level. As such, it stresses the sustained political and policy relevance of this area of work for OECD member and partner countries and beyond.**

The OURdata Index provides policy evidence of the main achievements and challenges related to the long-term sustainability of open data policies across OECD member and partner countries. This is in line with the discussions that took place during the 5th Expert Group Meeting on Open Government Data (6 – 7 Jun, 2019) where countries underlined the relevance of ensuring that open data policies remain a priority element of the public sector reform agenda.

Countries are increasingly moving towards broader public sector data efforts, but open data has specific policy implications, for example, in terms of the engagement of the ecosystem, co-creation, promoting data re-use and its integration in the business models and data value cycles of private sector and civil society organisations.

Open government data is a key asset for economic development, digital innovation, and good governance. For instance, Norway's National Strategy for Artificial Intelligence (published in January 2020) highlights how by opening up data, governments can help build stronger foundations for AI. In this line, the Norwegian AI Strategy underlines "the Government's goal […] to facilitate sharing of data from the public sector so that business and industry, academia and civil society can use the data in new ways" (KMD, 2020[1]) .

At the regional level, efforts such as the Asian Open Data Conference and the Asian Open Data Partnership have helped in further supporting the case for open data, including its value for social development in South East Asia. In 2020, the organisation of the International Open Data Conference (IODC) in Kenya will also aim at stressing the value of open data for development. The IODC has been previously organised in Buenos Aires (2018) and Madrid (2016), thus contributing to the regional advancement of open data across the globe.

In Europe, the 2019 European Directive on Open Data and the re-use of public sector information stresses how open data policies "can play an important role in promoting social engagement, and kick-start and promote the development of new services based on novel ways to combine and make use of such information" (European Union, 2019[2]). In this context, the Directive also provides a list of datasets [incl. geospatial and meteorological data, and company (beneficial) ownership] identified as high-value meaning their publication as open data is a priority. This underlines the relevance of open data (including that from the public sector) at the European level.

More recently, D9 member countries[2] issued the Data 360° Montevideo Declaration during the Digital Nations (D9) 2019 Montevideo Summit, The D9 groups nine countries (including eight OECD members) which are leading the digital government agenda at the national and international level in the benefit of citizens[3]. The D9 Declaration "lays out a common data vision on how governments create, collect, manage, govern, share and use data, with the aim of improving service delivery, better informing decision-making, enhancing operations, promoting innovative research and development, and fostering trust through transparency and accountability" (Digital Nations (D9), 2019[3]).

The D9 declaration also promotes the principle of *openness by default,* which aims to "make data easily accessible and available […] under an open license, unless there is a specific, legitimate reason why that data cannot be made open, and that reason is clearly communicated to the public as needed" (Digital Nations (D9), 2019[3]). This reinforces the principles of other international instruments such as the International Open Data Charter[4].

> **The OECD work on Open Government Data, including the 2019 OURdata Index, contributes to the public sector reform agenda across OECD countries, and to the broader OECD activities on digitalisation, including the OECD work on the Enhanced Access and Sharing of Data (EASD).**

The OECD work on open government data contributes to the broader public sector reform agenda across OECD countries including digital government, public sector integrity, public procurement, anti-corruption, open government, public sector innovation and public budgeting.

OECD instruments such as the 2017 OECD Recommendations on Public Integrity (OECD, 2017[4]), and on Open Government (OECD, 2017[5]) explicitly highlight the contribution of open data as a tool to support the achievement of policy goals in these areas, increase citizen engagement, and empower citizens as "watchdogs" towards greater government accountability. The 2015 OECD Recommendation of the Council on Budgetary Governance also addresses the importance of ensuring "that budget […] data are open, transparent and accessible", comparable, accessible, and clear to, among others, "promote effective decision making, accountability and oversight" (OECD, 2015[6]).

The OECD Open Government Data survey and the OURdata Index are core components of the OECD's efforts to assess the implementation of open data practices in these areas. This includes, for instance, countries' initiatives related to open contracting data, open budget data, and the publication of other taxonomies relevant to public sector integrity including declarations of interest and beneficial ownership. The OECD has assessed the implementation, coherence and integration of these initiatives as part of previous cross-national analysis including the 2018 OECD Open Government Data report (OECD, 2018[7]).

The OECD work on Open Government Data and the OURdata Index also contributes to the broader and joint activities carried out by the OECD Directorates for Public Governance and for Science Technology and Innovation, which focus on enhancing the access to and sharing of data (EASD). This work aims to "maximise the social and economic benefits to be derived from the wider and more effective use of digital data, while, at the same time, addressing related risks and challenges" (OECD, 2019[8]) thus covering issues related to open data, data ethics and data governance.

> **The OURdata Index is a cornerstone of the extensive work of the OECD on Digital Government and data-driven public sector. As such, it reflects the principles of the OECD Recommendation on Digital Government Strategies.**
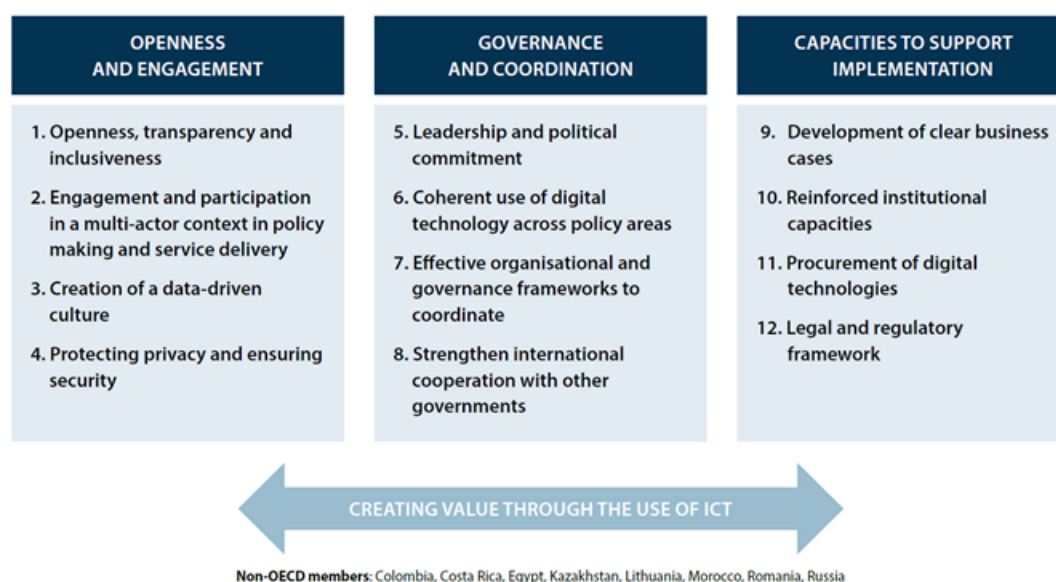
The OURdata Index responds to the need for a specific OECD measurement instrument for open data that continuously monitors the definition and implementation of open data policies as means to promote peer exchange, political engagement, and ensure sustainable results for citizens. This, in connection with the broader OECD work on digital government and data-driven public sector.

In light of the above, the OURdata Index explicitly responds to the provisions of the OECD Recommendation on the Council on Digital Government Strategies (see Figure 1), which includes a set of 12 principles to promote the digital transformation of the public sector. Among these, Principle 3 stresses the need for creating a data-driven culture in the public sector.

This implies governments have a responsibility to "*increase openness and transparency, incentivise public engagement in policy making, public value creation, service design and delivery*, […] (while) *balancing the need to provide timely official data with the need to deliver trustworthy data, managing risks of data misuse*" (OECD, 2014[9]).

The analytical framework of the OURdata Index (see next section) integrates the provisions of Principle 3, to ensure that open data initiatives comply with data protection regulations, and governments' efforts to engage with the ecosystem of users inside and outside the public sector towards greater re-use and value co-creation. The inclusion of these policy issues stresses the connection of this work with broader policy issues, including data governance, data protection and data ethics (see the 2019 OECD Report "*The Path towards a data-driven public sector*").

Figure 1. The OECD Recommendation on Digital Government Strategies

OPENNESS AND ENGAGEMENT	GOVERNANCE AND COORDINATION	CAPACITIES TO SUPPORT IMPLEMENTATION
1. Openness, transparency and inclusiveness	5. Leadership and political commitment	9. Development of clear business cases
2. Engagement and participation in a multi-actor context in policy making and service delivery	6. Coherent use of digital technology across policy areas	10. Reinforced institutional capacities
3. Creation of a data-driven culture	7. Effective organisational and governance frameworks to coordinate	11. Procurement of digital technologies
4. Protecting privacy and ensuring security	8. Strengthen international cooperation with other governments	12. Legal and regulatory framework

CREATING VALUE THROUGH THE USE OF ICT

Non-OECD members: Colombia, Costa Rica, Egypt, Kazakhstan, Lithuania, Morocco, Romania, Russia

Source: OECD Recommendation on Digital Government Strategies

The OURdata Index, and its results, contribute to the OECD's broader measurement work on digital government. This effort includes the assessment on governments' efforts related to better data sharing practices within and outside the public sector, data governance and ethics.

The OECD is working on the development of indicators on digital government as a means to assess the digital transformation of OECD member and partner countries around six dimensions (OECD, n.d.[10]) (see Figure 2), namely:

User-driven

A user-driven approach describes government actions that allow citizens and businesses to determine and to communicate their own needs in helping drive the design of government policies and public services (OECD, 2018[11]). Through engagement and collaborative mechanisms, policy processes, their outputs and outcomes, are not just informed, but shaped by the decisions, preferences and needs of citizens. Governments are user-driven when they establish new forms of partnerships with the private and the third sectors, or crowdsourcing ideas from within their administration and society at large, as means to achieve legitimacy and trust. In this process, public sector organisations make user research, usability (UX) design and human centred design to reflect people needs, and are open and collaborative so that people voices are heard in public policy making. A government is user-driven by awarding to people a central role thus placing their needs at the core of the shaping of the design and delivery cycles of, processes, services and policies; and the right inclusive mechanisms for this to happen are adopted.

Government as a platform

A government as a platform approach calls for the deployment of a wide range of platforms, standards and services assisting teams to focus rather on user needs in public service design and delivery rather than on technology solutions. By establishing clear, common and scalable sources and tools to access to guidelines, software, data and applications, others inside or outside governments can focus on innovating with service delivery by making extensive reuse of these tools, improving data accessibility and findability. The central development and availability of resources for the whole-of-government eases the access, understanding and coherence of digital and data solutions across public agencies, allowing teams to be more concentrate on understanding citizens' needs and how governments offer joined-up and effective end-to-end service experience enabled by re-usable public tools and digital services. A government acts as a platform when provides clear and transparent sources of guidelines, tools, data and software that equip teams to deliver user-driven, coherent, integrated, consistent and cross-sectoral service delivery standards.

Digital by design

Recognising that transforming services needs to be approached with an understanding of all the associated activities throughout the policy lifecycle rather than simply putting analogue processes online and expecting to improve outcomes. This means leveraging digital technologies to rethink and reengineer public processes, simplify or encapsulate procedures and open new channels of communication and engagement with public stakeholders for a more efficient, sustainable and citizen-driven public sector. By adopting a digital by design approach, governments embed digital technologies into governments' efforts to modernise service delivery and adopt the strategic mechanisms to ensure their coherent design, implementation and monitoring, no matter which channel services are offered. A digital government by design establishes clear organisational, leadership and effective coordination and enforcement mechanisms to secure that digital is considered not as a technical topic, but as a mandatory transformative element to be embedded throughout the policy processes (OECD, 2019[12]).

Data-driven public sector

A public sector is data-driven when generates public value through the reuse of data in planning, delivering and monitoring public policies, and adopts ethical principle for trustworthy and safe reuse of data (OECD, 2019[13]). It governs and manages data as a strategic asset for the creation of public value and the agile and responsive provision of public services (OECD, 2019[14]). In a data-driven public sector, data are

understood as enablers for designing policies and services. Thus, data shapes policies and services, their design and ongoing delivery, helps in understanding their impact, and spotting the changes that may need to be made. Data-driven governments ensure public sector data are shared inside and outside the public sector in a trustworthy fashion, and under clear protection, privacy, security rules and ethical principles for national and public interest. In order to facilitate their sharing, governments build the foundations right thus setting clear policies that can help in joining up the government, therefore promoting public sector integration. Data-driven governments break down policy siloes by promoting the cohesion of data-related policies, including on data protection, open data, and AI, provide the leadership to move data policies forward, and build the stewardship needed to promote coordination and accountability. They embed cross-sectoral data standards and replicable and scalable data infrastructures that facilitate the timely and secure access to and sharing of data.

Proactiveness

A proactive approach represents the ability of governments and civil servants to anticipate people's needs and to rapidly respond to them so they do not even notice that services are delivered. A proactive government brings the answer or solution to a citizen's need, hence limiting to the minimum the burdens of interacting with public sector organisations. Proactiveness aims to offer a seamless and convenient service delivery experience to citizens as governments are equipped to address problems from and end-to-end rather than fractioned approach.

Open by default

A government is open by default when it unties technology and drive innovation, within the limits of available legislation and in balance with national and public interest. An open by default approach describes the extent to which an agile and proactive government uses and shared digital technologies and tools to communicate, engage, collaborate with and build bridges between all actors in order to collect insights towards a more knowledge-based public sector (OECD, 2019[15]). This comprises not only providing drivers to promote collaborations and innovation (e.g. open government data, open source) respecting citizens' digital rights(e.g. data protection, security, confidentiality and privacy protection legislation), but also opening up and co-designing government processes (e.g. policy life cycle, public service delivery and ICT commissioning). The desire of governments to collaborate across organisational boundaries and involve those outside of government is critical in ensuring that service teams understand and engage with the needs of users and that government itself is able to collaborate and coordinate its activity to solve whole problems.

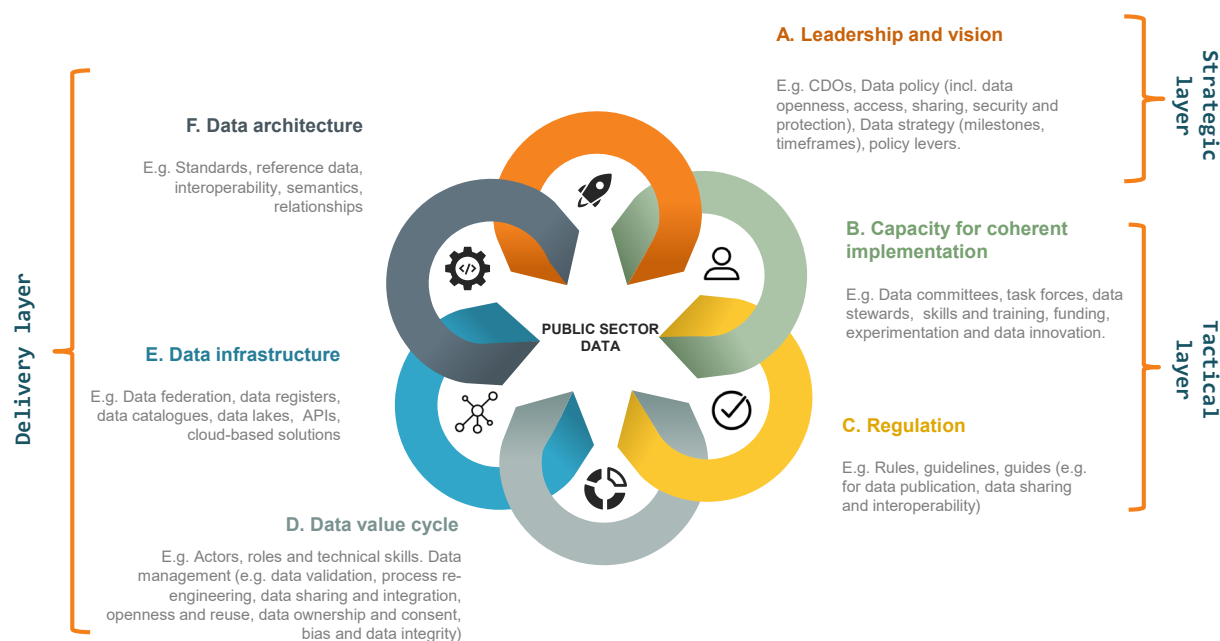## Figure 2. The OECD 6 Dimensions of a Digital Government

Source: OECD (n.d.[10]), Issues paper on the Digital Government framework, (*forthcoming*).

The OECD policy and measurement work on public sector data, data governance and open government data (incl. national reviews, thematic reports, and the OURdata Index)[5] are framed in the context of the abovementioned dimensions of a digital government. Among other policy issues, these dimensions assess the endeavours of OECD member and partner countries to build a **trustworthy, coherent, user- and data-driven public sector**, including practices, initiatives and policies addressing data-related issues including:

- Leadership, coordination and institutional networks available to steer and lead the coherent implementation of data efforts in the public sector **(Dimension: Data-driven)**
- The availability of cohesive national data strategies and/or policies **(Dimension: Data-driven)**
- The involvement of key stakeholders in the development of the national data strategy and/or policy **(Dimension: User-driven)**
- The availability of legislations and regulation addressing data sharing, data protection, and open data **(Dimension: Digital by design)**
- Data management and sharing within the public sector, including guidelines and standards, data inventories and skills **(Dimension: Data-driven)**
- The alignment of digital projects' business cases with data standards as means to promote integration and reduce fragmentation **(Dimension: Government as a platform**)
- The availability of common data architectures and infrastructures, including data centres **(Dimension: Digital by design)**
- Open government data (**Dimension: Open by default).**
- The use of data to develop user-driven services (e.g. through the application of machine-learning and data analytics) **(Dimension: User-driven)** enhance public sector productivity and monitor and evaluate public policies **(Dimension: Data-driven)**
- Data protection, data security, and the ethical and transparent use of data **(Dimension: Data-driven)**

All of the above-mentioned measurement issues reflect the core elements of the OECD public sector data governance framework (see Figure 3), which presents the strategic, tactical and delivery components of good public sector data governance. This framework is discussed further in the 2019 OECD Report *The Path to Becoming a Data-Driven Public Sector*.

Figure 3. The OECD framework for public sector data governance

A. Leadership and vision

E.g. CDOs, Data policy (incl. data openness, access, sharing, security and protection), Data strategy (milestones, timeframes), policy levers.

Strategic layer

B. Capacity for coherent implementation

E.g. Data committees, task forces, data stewards, skills and training, funding, experimentation and data innovation.

Tactical layer

C. Regulation

E.g. Rules, guidelines, guides (e.g. for data publication, data sharing and interoperability)

D. Data value cycle

E.g. Actors, roles and technical skills. Data management (e.g. data validation, process re-engineering, data sharing and integration, openness and reuse, data ownership and consent, bias and data integrity)

E. Data infrastructure

E.g. Data federation, data registers, data catalogues, data lakes, APIs, cloud-based solutions

F. Data architecture

E.g. Standards, reference data, interoperability, semantics, relationships

Delivery layer

PUBLIC SECTOR DATA

Source: OECD (2019), The Path to Becoming a Data-Driven Public Sector, OECD Digital Government Studies, OECD Publishing, Paris, https://doi.org/10.1787/059814a7-en.

Analytical framework

The OURdata Index draws upon the OECD analytical framework for open government data policies. An earlier version of the analytical framework was published in 2013 as part of the OECD Working Paper *Open Government Data: Towards Empirical Analysis of Open Government Data Initiatives* (2013[16]), which served a basis for the 2014 pilot version of the Index, published in 2015 (OECD, 2015[17]).

The 2017 and the 2019 editions of the Index are based on an updated version of the analytical framework which evolved in line with the international evolution of the open data movement. The updated version of the analytical framework also took into consideration and assessed the implementation of the principles of the International Open Data Charter, as presented in the OECD Working Paper *OECD 2017 OURdata Index: Methodology and results* (2018[18]).

The OURdata Index is structured in three pillars which assess key elements of sound open data policies (see Figure 4), as detailed in the abovementioned 2017 OECD Working Paper. The three main pillars of the Index are structured in three sub-pillars as shown in Figure 4:

- **Pillar 1 "Data availability"** measures the extent to which governments have adopted and implemented formal requirements to promote open government data at the central/federal level. This pillar also assesses how users are involved early on in the policy process as means to inform data publication and identify policy needs. Pillar 1 also explores the scope of datasets available on central open data portals.

- **Pillar 2 "Data accessibility"** measures the availability of formal requirements aiming at promoting the unrestricted access to understandable data (e.g. open licence, metadata), the role of the ecosystem and the portal in ensuring data quality (e.g. feedback mechanisms), and the actual implementation of data accessibility requirements once these data are published.

- **Pillar 3 "Government support for data reuse"** measures the extent to which governments play a proactive role in promoting the re-use of government data inside and outside government. This includes the definition and implementation of value co-creation initiatives and partnerships, capacity building exercises, and governments' efforts to monitor and evaluate policy impact.

Figure 4. Open-Useful Reusable Government data (OURdata Index): Pillars and Sub-pillars
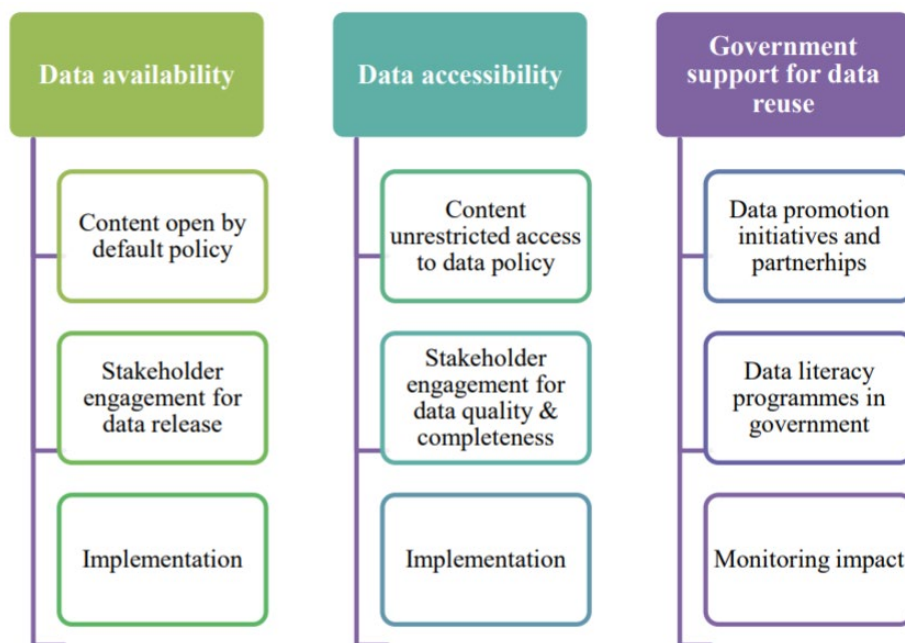
Source: (Lafortune and Ubaldi, 2018[18])

The following chapters are structured using the main pillars and sub-pillars of the OURdata Index as guidance, ergo underlying the main policy findings, achievement and challenges relevant to each area of analysis.

Notes

[1] The Digital Government and Open Data Unit, within the Reform of the Public Sector Division (Directorate for Public Governance), leads the development of the OURdata Index. This is in line with the activities of the Public Governance Committee and the mandate of the OECD Working Party of Senior Digital Government Officials (E-leaders).

[2] Canada, Estonia, Israel, Mexico, New Zealand, Portugal, Republic of Korea, the United Kingdom, and Uruguay.

[3] For more information see: https://leadingdigitalgovs.org/

[4] For more information see: https://opendatacharter.net/

[5] See for instance: OECD (2018[7]), Open Government Data Report; OECD (2018[23]) Open Government Data in Mexico; and OECD (2017[46]) Compendium of good practices on the use of open data for Anti-corruption.

Overall results for 2019

The results of the OECD 2019 Open Useful Reusable Data (OURdata) Index reveal overall improvements in open government data policies and practices across OECD countries.

As highlighted in the OECD Report *The Path to Being a Data-driven Public Sector* (OECD, 2019[14]), OECD countries are increasingly moving towards the development of government-wide data strategies. However, open government data remains a core component of these strategies as essential to strengthen good governance, due to the social and business value created by shared and public data.

The OECD average increased from 0.54 in 2017 to 0.60 in 2019, indicating a greater general maturity of open data policies at the central level (see Figure 5). These improvements resulted from stronger governance frameworks and / or high political willingness, as well as the right setting to enhance OGD reuse. Korea and France continue to be the two leading OECD countries in open data since 2017 (see Table 1). As briefly presented later in the document, this is a result of sustained government support to open data at the highest level. Countries showing outstanding positive advancements in terms of ranking are Australia, Ireland, Poland, Czech Republic, and Slovenia.

Figure 5. OECD Open, Useful and Re-usable data (OURdata Index): Results for 2019 and 2017
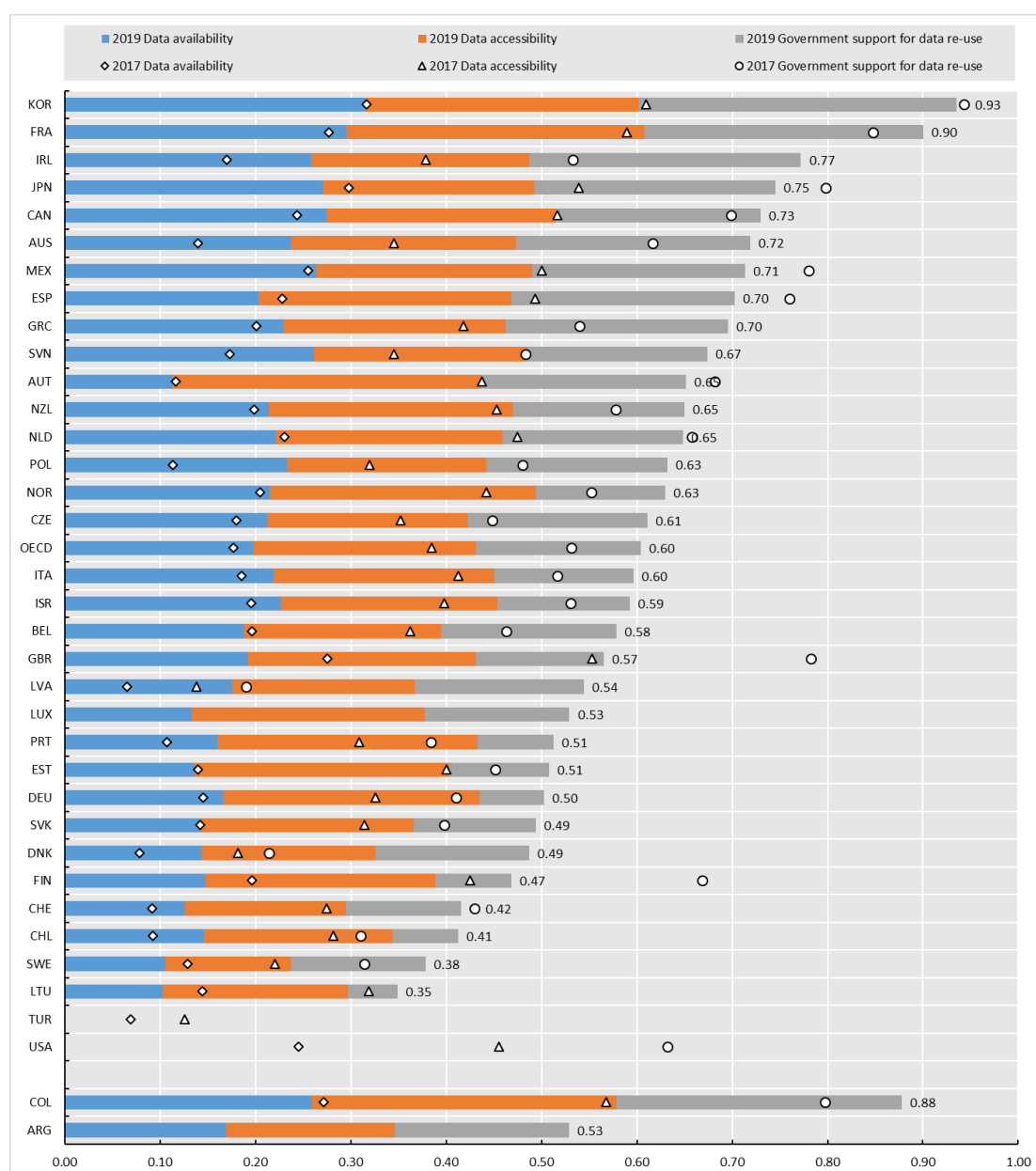
Note: Data for 2017 are not available for, Hungary, Iceland and Luxembourg. Data for 2019 are not available for Hungary, Iceland, Turkey and the United States. On data for Israel, see http://doi.org/10.1787/888932315602.
Source: OECD (2016, 2018), Open Government Data Survey.

Although the general trend in terms of performance across the OECD is positive, challenges remain in terms of policy sustainability and maturity.

The 2017 'open data champion', the **United Kingdom,** has failed to retain open data high on the policy agenda, resulting in a noticeable drop from 4th position in the 2017 OURdata Index, to 20th position in 2019. **Japan, Mexico, Spain, and Austria** also show decreases both in terms of scoring and ranking when compared with the data from 2017.

The abovementioned results more commonly reflect challenges faced by countries in the process of developing and sustaining the implementation of open data policies and initiatives. In **Mexico**, for instance, the declining in score can be related to changes in the political administration and the institutional governance for open data. In the **United Kingdom**, the big drop can be explained as a result of a mix of different aspects, including reduced efforts towards user engagement across the whole policy process, and change of policy priorities from open data to analytical capacity within the public sector (e.g. targeting the adoption of AI practices). This stresses the need for solid governance frameworks, securing continuous policy implementation, as well as ensuring that changes in government and political priorities do not put open data initiatives at risk.

Table 1. Detailed Results OECD 2019 OURdata Index

2019 OURdata Index Rank	Country[1]	Global Score[2]		Pillar 1: Data availability[3]		Pillar 2: Data accessibility		Pillar 3: Government Support to re-use	
		2019	Change since 2017	2019 score	Change since 2017	2019 score	Change since 2017	2019 score	Change since 2017
1 ▶	**Korea**	0.93	▼**0.01**	0.31	▼0.01	0.29	▶ 0	0.33	▶0
2 ▶	**France**	0.90	▲**0.05**	0.30	▲0.02	0.31	▶0	0.29	▲0.03
3 ▲	**Ireland**	0.77	▲**0.24**	0.26	▲0.09	0.23	▲0.02	0.28	▲0.13
4 ▼	**Japan**	*0.75*	▼**0.05**	0.27	▼0.03	0.22	▼0.02	0.25	▼0.01
5 ▲	**Canada**	*0.73*	▲**0.03**	0.27	▲0.03	0.24	▼0.03	0.21	▲0.03
6 ▲	**Australia**	*0.72*	▲**0.10**	0.24	▲0.10	0.24	▲0.03	0.25	▼0.03
7 ▼	**Mexico**	0.71	▼**0.07**	0.26	▶0	0.23	▼0.02	0.22	▼0.06
8 ▼	**Spain**	0.70	▼**0.06**	0.20	▼0.03	0.26	▼0.01	0.23	▼0.04
9 ▲	**Greece**	0.70	▲**0.16**	0.23	▲0.03	0.23	▲0.02	0.23	▲0.11
10 ▲	**Slovenia**	0.67	▲**0.19**	0.26	▲0.09	0.22	▲0.05	0.19	▲0.05
11 ▼	**Austria**	0.65	▼**0.03**	0.11	▼0.01	0.32	▶ 0	0.21	▼0.03
12 ▲	**New Zealand**	0.65	▲**0.07**	0.21	▲0.02	0.26	▶0	0.18	▲0.05
13 ▼	**The Netherlands**	0.65	▼**0.01**	0.22	▼0.01	0.24	▼0.01	0.19	▲0.01
14 ▲	**Poland**	0.63	▲**0.15**	0.23	▲0.12	0.21	▶ 0	0.19	▲0.03

15 ▼	**Norway**	0.63	▲ **0.08**	0.21	▲ 0.01	0.28	▲ 0.04	0.14	▲ 0.03
16 ▲	**Czech Republic**	0.61	▲ **0.16**	0.21	▲ 0.03	0.21	▼ 0.04	0.19	▲ 0.09
17 ▲	**Italy**	0.60	▲ **0.08**	0.22	▲ 0.03	0.23	► 0	0.15	▲ 0.04
18 ▼	**Israel**	0.59	▲ **0.06**	0.23	▲ 0.03	0.23	▲ 0.02	0.14	▲ 0.01
19 ▲	**Belgium**	0.58	▲ **0.12**	0.19	▼ 0.01	0.21	▲ 0.04	0.18	▲ 0.08
20 ▼	**The United Kingdom**	0.57	▼ **0.22**	0.19	▼ 0.09	0.24	▼ 0.04	0.13	▼ 0.10
21 ▲	**Latvia**	0.54	▲ **0.35**	0.18	▲ 0.11	0.19	▲ 0.12	0.18	▲ 0.13
22 ►	**Luxembourg**	0.53	n.a.	0.13	n.a.	0.24	n.a.	0.15	n.a.
23 ▲	**Portugal**	0.51	▲ **0.13**	0.16	▲ 0.05	0.27	▲ 0.07	0.08	► 0
24 ▼	**Estonia**	0.51	▲ **0.06**	0.14	► 0	0.27	▲ 0.01	0.10	▲ 0.05
25 ►	**Germany**	0.50	▲ **0.09**	0.17	▲ 0.02	0.27	▲ 0.09	0.07	▼ 0.02
26 ►	**Slovak Republic**	0.49	▲ **0.10**	0.14	► 0	0.22	▲ 0.05	0.13	▲ 0.04
27 ▲	**Denmark**	0.49	▲ **0.27**	0.14	▲ 0.07	0.18	▲ 0.08	0.16	▲ 0.13
28 ▼	**Finland**	0.47	▼ **0.20**	0.15	▼ 0.05	0.24	▲ 0.01	0.08	▼ 0.16
29 ▼	**Switzerland**	0.42	▼ **0.01**	0.13	▲ 0.03	0.17	▼ 0.01	0.12	▼ 0.03
30 ▼	**Chile**	0.41	▲ **0.10**	0.15	▲ 0.05	0.20	▲ 0.01	0.07	▲ 0.04
31 ▼	**Sweden**	0.38	▲ **0.06**	0.11	▼ 0.02	0.13	▲ 0.04	0.14	▲ 0.05
32 ►	**Lithuania**	0.35	▲ **0.03**	0.10	▼ 0.04	0.19	▲ 0.02	0.05	▲ 0.05

Note: Data for 2019 are not available for Hungary, Iceland, Turkey and the United States.
Source: OECD OURdata Index 2019.

[1] Only the result of OECD member countries are presented in the table.

[2] The global score of the OURdata Index ranges from 0 to 1.0

[3] The score values of the three Pillars of the OURdata Index range from 0 to 0.33.

The three pillars of the OURdata Index show overall improvements. Increased stakeholder engagement to identify data demand (Pillar 1), greater pursuit of user-driven open data platforms (Pillar 2), and more capacity building activities within the public sector (Pillar 3) demonstrate an increased understanding by governments of the need to define and implement OGD policies that focus on the open data ecosystem, data re-use and value creation.

19 of 32 OECD countries have made progress in terms of data availability (Pillar 1), reflecting a strong commitment among governments to continue to pursue the implementation of a user-driven open government data agenda.

Strengthening the policy framework for open data requires governments to foster greater levels of stakeholder engagement, both in an effort to bolster the design, but also the implementation and measurement of open data policies. Stakeholder engagement allows for the strategic release of high value data taxonomies (e.g. business registers, transport data, state budget data) which in turn generates greater re-use and impact. In this respect, OECD countries advanced in their efforts to engage early with a wide range of stakeholders (such as private sector organisations, academia and journalists) to identify government data they would need to provide as open data, leading to improved availability of high value datasets.

Most OECD countries have made a significant push to strengthen the policy framework for open government data. Today, 30 out of 32 OECD countries have formal requirements for government data to be open by default. These advancements have been a crucial factor of the increased OECD average in data availability (See Figure 6).

Key recent developments at the central level in OECD countries include Ireland's Open Data Strategy 2017-2022 and the 2019 United States OPEN Government Data Act, as presented in the section explaining the results of sub-pillar 1.1. Another relevant example is that of **Slovenia**, where the government has proven successful in terms of making available high-value datasets available on its central OGD portal, and in involving external stakeholders to inform the open data policy in its early stage. Thus, explaining its advancement and results for Pillar 1 for 2019.

At the supranational level, the 2019 EU Directive on open data and the re-use of public sector information will be central in supporting the advancement of open data efforts in EU member countries, and thus in facilitating innovation and good governance. Article 16 of the new EU directive explicitly encourages EU Member States to "promote the creation of data based on the principles of 'open by design and by default'" (European Union, 2019[2]).

The 2019 EU Directive replaces the 2013 EU PSI directive[1], which resulted in inconsistent implementation and several barriers for an open data market to emerge. Nevertheless, in the coming years, EU countries, including several OECD countries, will face the challenge of implementing the open data directive coherently at the national level.
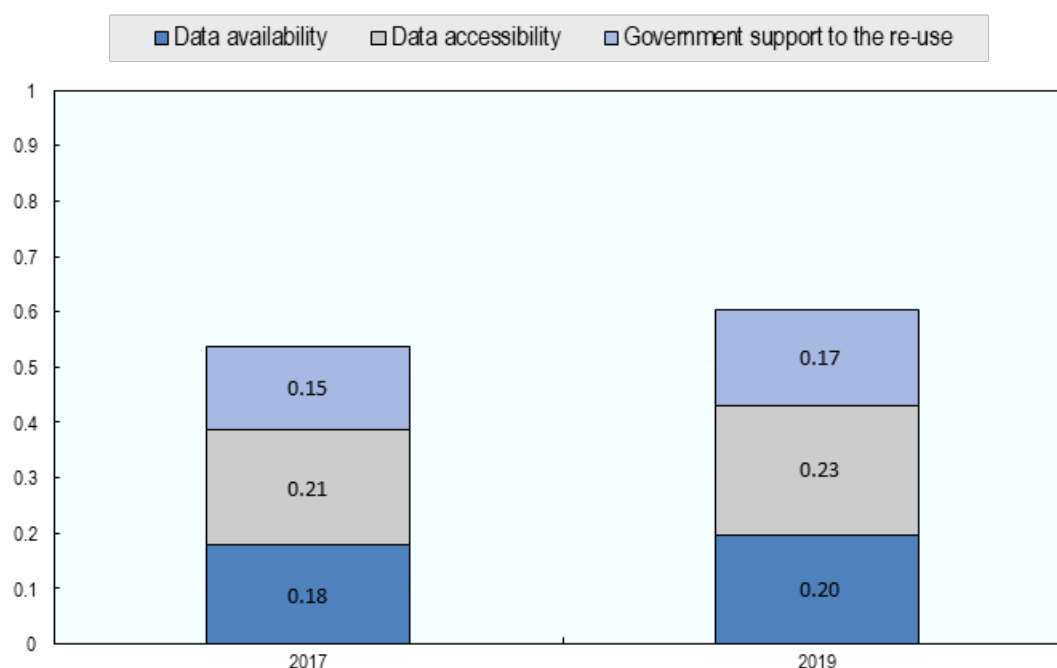
Source: OECD Open Government Data Survey 2016 and 2018

The strengthening of policy frameworks has further resulted in significant improvements in the accessibility of open government data (Pillar 2).

OECD countries are today formalising requirements to improve government data quality and accessibility, either through legal instruments, guidelines, or other policy instruments. In 29 of 32 OECD countries, central/federal governments require data to be available free, in machine-readable formats, and with associated metadata. 28 of 32 OECD countries require data to be available with an open licence. In 2017, Germany adopted its Federal Open Data Act, mandating the release of federal government datasets in machine-readable and open formats. The strengthening of open data policy frameworks in recent years has had a positive impact on both the availability and accessibility of government data, as seen in Figure 6.

The transformation of national open government data portals into open platforms for collaboration and innovation with the public has also been pursued by a growing number of OECD countries in recent years, with a positive impact on data accessibility. Users can today publish their datasets on central/federal open data portal in nine OECD countries (France, Finland, Estonia, Austria, Greece, Portugal, the Czech Republic, Sweden and Luxembourg), and are thus able to contribute to open data and combine data that could generate other types of innovation or information resources. In 2017, only three OECD countries allowed for this functionality (France, Finland and Austria).

In general, initiatives undertaken by OECD countries in recent years signal a greater understanding of data quality as a prerequisite for actual re-use. The improvements seen in data accessibility are, in most cases, attributed to efforts to institutionalise the elements and procedures that in the end leverage data accessibility and data quality (e.g. by creating guidelines and mandatory standards). It is also the result of an increased understanding of the value of user engagement and feedback to improve both the quality and quantity of data.

Overall, these improvements are reflected in the OECD average scores for Pillar 2, Data Accessibility, which increased from 0.21 to 0.23 between 2017 and 2019.

The increase in government support to promote the reuse of open government data within the public sector has led to improvements in the results of Pillar 3 of the 2019 OURdata Index compared to the 2017 edition. These improvements also result from the growing efforts of a few OECD countries aiming to measure the impact of open data policies.

Many OECD countries have been committed to promote an open data culture within their respective public administrations. They have done so by increasing the number of awareness-raising programmes on the benefits of open government data and its reuse within the public sector, training sessions for public servants, and guidelines to improve open data literacy skills. This has led to improvements in terms of Sub Pillar 3.2, which measures the extent to which central/federal governments support open data literacy skills and re-use within the government.

In line with the above, there was an increase from 0.15 to 0.17 between 2017 and 2019 in the government support to data re-use (Pillar 3). While the overall support has increased, the support aimed at re-use among external stakeholders (including civil society, businesses, academia) has slightly decreased (see section on Pillar 3), signalling a change in priorities which might challenge the inclusiveness and sustainability of open data initiatives if not appropriately addressed.

Note

[1] https://eur-lex.europa.eu/legal-content/FR/ALL/?uri=CELEX:32013L0037

1. Pillar 1: Data Availability

In today's digital transformation of societies, economies and governments, a growing number of private, public and non-governmental actors release their data as open data to the public. Examples include the platform Uber Movement[1], with aggregated data on a billion ride-hailing trips available to help shape efficient urban planning, the World Bank's open development data portal data.worldbank.org, and the data science community Kaggle[2], where over a million registered users can access and publish data to learn skills in data analysis while solving complex problems.

The abovementioned cases only display a small portion of similar initiatives, and they demonstrate the relevance and urgency for governments to sustain and accelerate their contribution to a pool of open datasets that can fuel more democratic, collaborative, and innovative societies based on increased data flows. From this perspective, open data (including that from the public sector) can help in reducing data monopolies and address market failures[3]. Open government data is a first step towards a data sharing environment that can create value for all actors involved, thus stressing the relevance of increasing and working towards the availability of open government data.

The results of the 2019 OURdata Index for Pillar 1 indicate a general improvement of the scores of each sub-pillar since 2017 (Figure 1.1). The OECD average of Sub-Pillar 1.1 (*Content of the open by default policy)* increased from 0.19 to 0.22, Sub-pillar 1.2 (*Stakeholder engagement for data release)* from 0.18 to 0.20, and Sub-pillar 1.3 (*Implementation)* from 0.17 to 0.18 (see Figure 1.2).

Figure 1.1. Pillar 1: Data Availability (Results for 2019 and 2017)
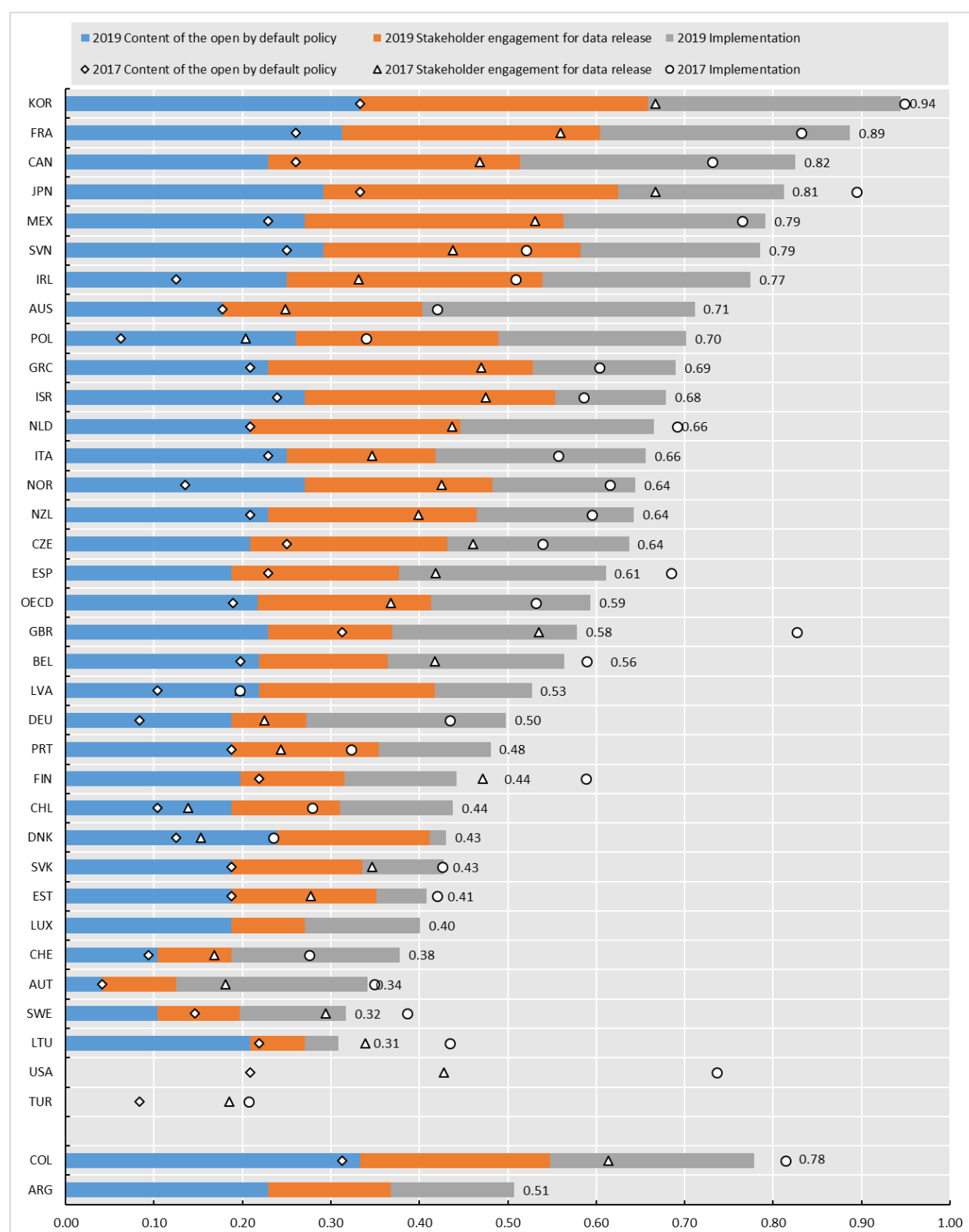
Note: Data for 2017 are not available for, Hungary, Iceland and Luxembourg. Data for 2019 are not available for Hungary, Iceland, Turkey and the United States. On data for Israel, see http://doi.org/10.1787/888932315602.
Source: OECD (2016, 2018), Open Government Data Survey.

Figure 1.2. Pillar 1 Data Availability – OECD Average 2017 vs. 2019 by Sub-pillar
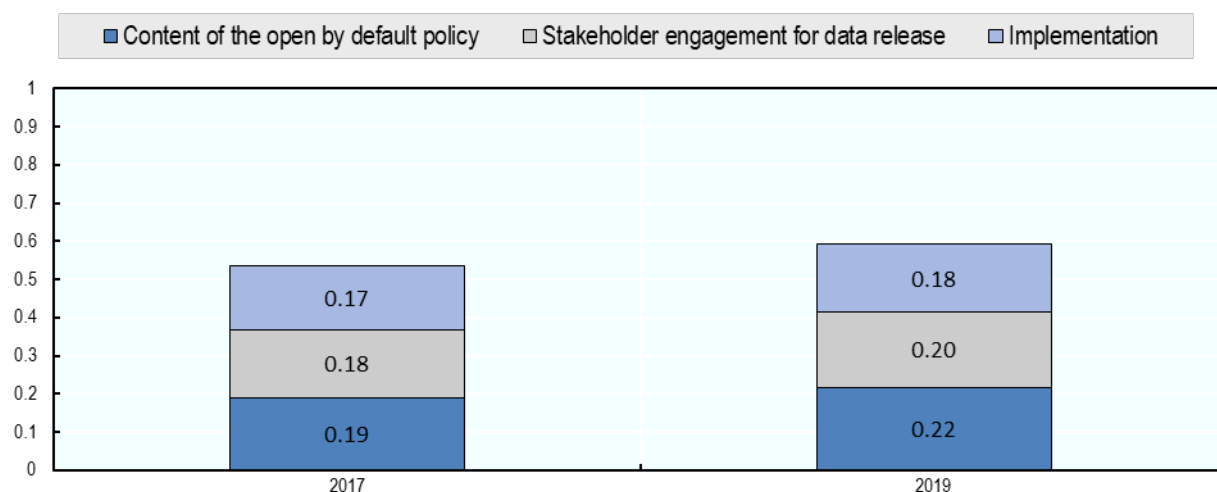
Source: OECD Open Government Data Survey 2016 and 2018

Content of the *open by default* policy (Sub-pillar 1.1)

A growing number of OECD countries have scaled up 'open by default' requirements by publishing formal open data strategies, laws and regulations. This contributed to the rise in the OECD average of data availability between 2017 and 2019.

Requirements to provide government data 'open by default' – as defined in policy, and hard/ soft regulatory documents - do not necessarily result in actual implementation (as assessed in sub-pillar 1.3). For instance, issues like "open washing" (see Pillar 2) can reduce the impact of open data practices for they can distort its real meaning of from different approaches – from its technical to its policy aspects. From this perspective, foundational open by default arrangements assist in promoting a public sector culture prone to releasing its data "out there" (OECD, 2018[7]).

For instance, **Ireland** showed important advancements after releasing the *2017-2022 Open Data Strategy[4]* and took actions to start implementing it. This strategy was recently accompanied by the *2019-2023 Public Service Data Strategy[5]*, which positions open data at the core of Ireland's public sector data management and data governance (Government of Ireland, 2019[19]). The Irish Open Data Strategy helped shedding clarity in terms of objectives, responsibilities, and delivery, including the value of open data to broader policy areas (OECD, 2018[7]), therefore contributing to the positive results for Ireland in 2019.

In January 2019 the **United States** adopted the *Foundations for Evidence-Based Policymaking Act* of 2018[6]. The act serves as another good example of an OECD country embracing a sustainable open data policy as a means to design and implement policies that are more informed. The act positions the Open, Public, Electronic, and Necessary Government Data Act (OPEN Government Data Act) as a core component for evidence-based policies in the United States (OECD, 2019[20]). The Act also reinforced the regulatory governance for open data in the country, for instance by including provisions on the mandatory appointment of chief data officers in public sector agencies (OECD, 2019[14]), and helped in building a stronger regulatory governance basis for open data, previously mainly based on President Obama's Open Data Policy (2013)[7]. A similar case is observed in **Poland,** where the 2016-2021 *Public Open Data Programme* [8] gave a big push to the publication of open data and the implementation of related initiatives.

Similar progress due to the introduction of strategies or regulatory instruments took place in **Latvia** with the 2016 Data-Driven Nation project[9], and **Germany** with the 2017 Law for the Promotion of Electronic Administration[10].

While the acknowledgement of the open by default principle is a triumph in itself, only 8 OECD countries consider the implementation of open data requirements (e.g. the provision of timely and machine-readable data) to be part of performance indicators of public sector organisations. This includes **Canada**, **Norway** and **Italy**. In **Canada**, the Management Accountability Framework[11] assesses the performance of federal departments and agencies in their implementation of the 2014 Canadian Directive on Open Government, which covers public sector information and open data[12].

The lack of similar practices within most OECD countries presents a window of opportunity for further advancements to open data agendas. The use of key performance indicators (KPIs) on open data practices might help expedite the transition from policy promises into practice, for instance by increasing compliance with data standards and other formal requirements which helps foster organisational change across the government.

Data protection: Growing challenges and social pressure

> **Implementing trustworthy data governance practices will play a key role in advancing open data policies while safeguarding citizens' rights and promoting their control over their data.**

As discussed in the OECD Reports on Open Government Data (OECD, 2018[7]) and on Data-Driven Public Sector (OECD, 2019[14]), sound data governance is key to deliver value when managing, sharing and opening up data (including open government data) while at the same time ensuring adequate control and risk management. Sub-Pillar 1.1 of the OURdata Index assesses among other elements the extent to which OECD countries are taking measures to safeguard citizens' privacy and protect sensitive data when publishing open government data.

This has become of the utmost relevance given the growing attention paid to data management practices in the private and public sectors, as well as the political discussion on the use and protection of personal data by governments, businesses and other data holders. Data breaches and mishandling events have damaged citizens' trust towards organisations that collect, mine and analyse personal data, with research showing that consumers in the United States increasingly take actions to protect their personal data on online platforms (e.g. social media accounts) (Dwivedi et al., 2017[5]). While it might be perceived as mostly a concern for the private sector, the deteriorating levels of trust in public institutions worldwide, combined with the increased use of data to deliver public services is reason enough for policymakers to make the trust of citizens in sharing their data a high priority.

In response, governments, international organisations and businesses are at full speed developing new strategies, guidelines, and directives related to personal data protection. One of the most well-known and recent legal instruments is the 2018 EU General Data Protection Regulation (GDPR), formed to empower EU citizens' data privacy while simultaneously streamlining the regulatory environment for businesses and organisations operating in the EU market (European Union, 2018[21])). The GDPR facilitates data collection and sharing across borders in the EU by setting rules for data collectors and by signalling to data subjects that their personal data stays protected.

> Securing the right balance between *openness by default* and the implementation of key measures aiming to ensure and assess the alignment of open data policies with data protection regulations (including data anonymisation procedures), is crucial to maintain public trust.

In the specific context of open government data, risk averse behaviour towards data openness may risk slowing down open data or data sharing policies, and decrease the number of good practices to implement this agenda. Therefore, securing the right balance between openness by default and the implementation of key measures aiming to ensure and assess the alignment of open data policies with data protection regulations (including data anonymisation procedures) is crucial to maintain public trust.

Data from the Open Government Data Survey 4.0 indicate that all OECD countries have formal requirements that prevent the publication of sensitive and private data, in line with the provisions of instruments such as national data protection laws and FOI acts. Yet, there still remains a challenge in ensuring that open data initiatives in practice always do comply with these rules.

For instance, across OECD countries today, it is relatively rare to conduct assessments to evaluate if public sector organisations are only publishing data that do not damage privacy, security, confidentiality or intellectual property. For instance, in **Austria**, each publishing federal authority conducts an internal assessment to ensure that data published as open data do not damage any of the aforementioned elements. However, these assessments are not available online or shared with the public.

Additionally, there is growing interest across OECD countries in exploring how other soft policy instruments (e.g. ethical frameworks) can complement the abovementioned formal legal and regulatory arrangements as means to influence behaviour, promote self-regulation, and build a value-based culture that favours both openness and respect core citizens' rights. While these approaches have been increasingly explored in the context of other policies such as AI and broader national data strategies, these should not run in parallel of open data efforts given their relevance and close connection with this policy area.

Stakeholder engagement for data release (Sub-pillar 1.2)

> The engagement of stakeholders is strategic to inform data release and the adoption of a 'publish with a purpose' approach. This means prioritising the publication of data based on users' needs, and with a specific purpose.

The level of stakeholder engagement for data release has increased over time (see Fig. 2.3) with the OECD average going from 0.18 to 0.20 since 2017. This early engagement helps informing and prioritising data publication, which can then contribute to increase re-use and value co-creation, as explored in Pillar 3 of the Index. This dynamic approach differs from one that is strictly driven by transparency (e.g. the need for user action to request data) and challenges the conception of data publication as the outcome rather than a means.

It is worth mentioning, however, that in order to fully leverage the value of open data policies, governments should find the right balance between strategic data supply (publish with a purpose) and respond to data demand in line with users' needs.

"On the one hand, the strategic supply of open government data (top-down approach) can help governments address policy challenges in line with their national agenda and policy priorities. On the other hand, the demand side (bottom-up) centres on the needs of data users; thus, the relevance of engaging with the ecosystem to evaluate data demand and prioritise the publication of those data that respond to user needs. When balanced, both approaches contribute to the development of a data infrastructure that capitalises on the value of data as a strategic asset for public value co-creation" (OECD, 2018[7]). In both cases, as widely discussed in the OECD Open Government Data Report, the three pillars of the OURdata

Index stress the relevance of collaboration and user engagement as a regular element of open data policies from their design to their deployment and monitoring towards data re-use and the creation of value.

The former National Open Data Infrastructure in **Mexico** in an example of how value is exponentially created in the intersection between supply and demand [see OECD (2016[22]) and (2018[23])]

In terms of user demand, Sub-pillar 1.2 underlines that instead of assuming user preferences, governments should engage with users on a regular basis, to consider their opinions when designing and delivering open data initiatives and placing them at the core of the design process. This supports one of the six key dimensions that promotes the transformation from e-government to digital government, being user-driven (OECD, 2019[24]), as discussed in the introduction section of this paper.

In **Japan**, the Open Data Working Group and the Open Data Public-Private Roundtable consist of members from both the private and public sector that meet regularly to provide feedback on the central government's open data policy and activities (OECD, 2018[25]). In **Australia**, the Office of the National Data Commissioner held numerous meetings and roundtables with universities, industry, civil society, the business sector, and the private sector to help shape the new *Data Sharing and Release legislation*[13] (Department of the Prime Minister and Cabinet, 2018[26]). This made a significant positive impact on the country's ranking in the 2019 OURdata Index for data availability.

The drop of **Finland** in the 2019 OURdata Index demonstrates the importance of formalising and sustaining regular stakeholder engagement, at least in in terms of continuity. The country's performance in terms of data availability plunged significantly between 2017 and 2019, mainly due to reduced stakeholder engagement. By contrast, countries with formal requirements maintained a very good performance, e.g. **Korea** and **Japan**. Yet, the specific approach followed by each country is subject to contextual and cultural factors.

Also, in practice, guidance and the mapping data assets beforehand can help make engagement more effective. For instance, lists of data holdings/data inventories are not only essential in building better public sector data management, but can also support governments in receiving more informed feedback from stakeholders during consultations on open data plans. In fact, in order to provide meaningful and valuable feedback stakeholders need tools to better understand what type of government data resources exist, and what data are already made open. In this line, **New Zealand** is one country that has understood the importance of data inventories and recently committed to publish and maintain such as part of its *2018-2019 Open Data Action Plan* (Stats NZ, 2017[27]).

> **With growing global concern over personal data protection, stakeholder engagement to inform open data policies serves as an opportunity for governments to engage with citizens, increase inclusion, policy ownership and trust.**

Yet, for fair, inclusive and open data policy making, governments should also dedicate efforts to reaching out to vulnerable, underrepresented, or marginalised groups in society. As declared by the Recommendation of the Council on Open Government (OECD, 2017[28]), openness is critical in building citizen trust, and stakeholder participation can increase government accountability and improve the evidence base for policy-making. This highlights the value of early stakeholder engagement in the context of open data policies as a tool to address trust deficits and the governance of data in specific contexts.

For instance, in **Canada**, the government conducted an extensive public engagement process to understand citizens' needs and opinions with regard to the 4th Open Government Partnership (OGP) National Action Plan 2018-2020[14]. The feedback from participants resulted in a number of commitments concerning the governments' work with open data, including stronger collaboration with Indigenous peoples, and to better understand how the First Nations principles of Ownership, Control, Access, and Possession[15] apply to the government's work on open data and information (TBS Canada, 2018[29])

Implementation: The increasing availability of open government data (Sub-pillar 1.3)

> **OECD countries are increasingly moving towards the understanding that, in the context of open data publication, value comes before quantity. This has resulted in an acceleration of initiatives aiming at improving the quality of data from earlier stages, towards greater re-use.**

While an output and not a policy outcome, the quantity of open data in high-value taxonomies, as identified by the G8 Open Data Charter[16] has increased in OECD countries in recent years, however only slightly (OECD average of Implementation increased from 0.17 to 0.18). The relatively small increase could signal an understanding that creating value from open data requires taking action within the public sector focusing on the generation of good quality data prior to their publication; thus ensuring these are standardised, interoperable and valuable as a resource when released for public reuse. This is discussed further in Pillar 2 on Data Accesibility.

For instance, as presented in the *2019 OECD Digital Government Review of Argentina*, the *Data as a Service* policy in **Argentina** aims to follow the principle a quality-from-the-source in relation to the production of government data. This   policy (inclusive of open data) was designed to ensure that government data can be produced *de facto* as good quality and interoperable data *by design,* prior to their publication and sharing (OECD, 2019[20]).

The new EU Open data directive (European Union, 2019[2]) also provides a list of 'thematic categories' of high-value datasets, deemed as having great value for the economy and society. This list covers postcodes, geospatial data (e.g. national and local maps), earth observation and environment (e.g. satellite images, meteorological data, statistics, mobility data, and business registers (company registers, company ownership).

Many OECD countries have released datasets related to the abovementioned taxonomies on their central/federal open data portal (as shown in Pillar 1.3). Still, some categories are not usually made public, such as data on company ownership. Today, among OECD countries, only the **United Kingdom** and **Greece** provide this data as open data.

> **Political and administrative structures of a country, including multi-level governance arrangements, can slow down the release of open data. Yet, evidence from leading OECD countries points to the fact that these challenges can be appropriately managed even in countries with government federal systems.**

 The need to consider different contextual factors when designing open data policies (including data publication procedures) is of paramount importance to secure effective implementation. As discussed in the *E-Leaders Governance Handbook* (OECD, forthcoming[30]), governments should be aware of, and consider factors that might affect the capability to mobilise and secure coordination of initiatives across the different sectors and levels of government. This includes different political and administrative cultures and structures, where governments in countries with decentralized, or federal government systems, may face a bigger challenge in trying to promote or coordinate coherent implementation of the central/federal open data agenda across local/state governments.

Several OECD countries have demonstrated, however, that different power structures and political cultures do not need to be a barrier to the effectiveness of open data initiatives or the publication of data on a single central/federal open government data portal. For example, in **France**, the central government mandated cities and local governments with more than 3 500 inhabitants to open up their data as part of the 2018 *Digital Republic Bill*. In the federal state of **Mexico**, Art 9 of the 2015 Open Data Presidential Decree laid

the foundation for the Open Mexico Network, consisting of the government, 25 federal states, 88 autonomous agencies, and municipalities. The network was established as a way to explore the potential of greater collaboration in the context of open data among the federal and state levels of government (OECD, 2018[25]).

After having secured the alignment of policy visions across countries with federal or more decentralised administrative systems, several governments can deploy technical tools that facilitate the availability of open data from different platforms and sources to a federal/central OGD portal, reduce data siloes, and increase the discoverability and access to the data. This is a way to provide incentives to local administrations or sustain the development of their capabilities for better implementation.

For example, today, countries including **Canada**, **Sweden** and **Australia** harvest data from sub-national OGD portals to their main portal. This data federation model approach can help in standardising government data across different levels of government, while maintaining a certain level of quality in line with central standards.

Notes

[1] For more information about Uber Movement see: https://movement.uber.com

[2] For more information about Kaggle see: https://www.kaggle.com/

[3] See for instance https://www.ft.com/content/a5c7b640-526c-11ea-8841-482eed0038b1

[4] https://www.gov.ie/pdf/?file=https://assets.gov.ie/6572/91c623e548a448ab883c9971bad125a0.Open%20Data%20Strategy%202017-2022#page=1

[5] https://www.gov.ie/en/publication/1d6bc7-public-service-data-strategy-2019-2023/

[6] https://www.congress.gov/bill/115th-congress/house-bill/4174/text#toc-H8E449FBAEFA34E45A6F1F20EFB13ED95

[7] For more information see: https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2013/m-13-13.pdf

[8] For more information see: https://dane.gov.pl/article/611

[9] https://joinup.ec.europa.eu/collection/egovernment/document/cooperation-data-driven-nation-development-latvia

[10] https://www.gesetze-im-internet.de/egovg/__12a.html

[11] https://www.canada.ca/en/treasury-board-secretariat/services/management-accountability-framework.html

[12] https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=28108

[13] For more information see: https://www.pmc.gov.au/resource-centre/public-data/issues-paper-data-sharing-release-legislation

[14] For more information see: https://open.canada.ca/en/content/canadas-2018-2020-national-action-plan-open-government#toc3-3

[15] The First Nations Principles of OCAP™ is a principle document that sets forth the right for Indigenous people in Canada to own, protect and control data about the First Nations, and to make decisions about how it is collected, shared and used (https://www.afn.ca/uploads/files/nihbforum/info_and_privacy_doc-ocap.pdf).

[16] Business registers, meteorological data, and public procurement data.

2. Pillar 2: Data Accessibility

Data accessibility is a fundamental part of OGD policies as it is critical to secure the inclusiveness of the opportunities it offers. Securing accessibility is about refining the user experience of consuming government data, e.g. by means of upgrading file formats, publication procedures, and ensuring higher levels of data quality and interoperability. In essence, data accessibility is about making government data available for everyone, and for all possible purposes. The release of 'open data' in formats and procedures that make re-use extremely difficult, or impossible, can be viewed as a form of "openwashing[1]". As expressed by the Open data Barometer (2016[31]) "open data initiatives risk simply being window-dressing, or "open washing" – when data is called "open" data upon release but it does not truly meet the full open criteria".

As demonstrated by the results of the 2019 OURdata Index, the level of data accessibility (Pillar 2) in OECD countries remains high showing a progress when compared to 2017 (See Figure 2.1). The global results of the OURdata Index), reveal that the OECD average of data accessibility has increased from 0.21 to 0.23 since 2017 (see Figure 2.2). A majority of countries have introduced robust policies for unrestricted access to data (see Pillar 2.1 *Content of the unrestricted access to data policy*), and have accessible data on their central/federal OGD portals (see Pillar 2.3 *Implementation*). Still, results for the level of *stakeholder engagement for greater data quality and completeness* (Pillar 2.2) are clearly uneven.

Figure 2.1. Pillar 2: Data Accessibility (Results for 2019 and 2017)
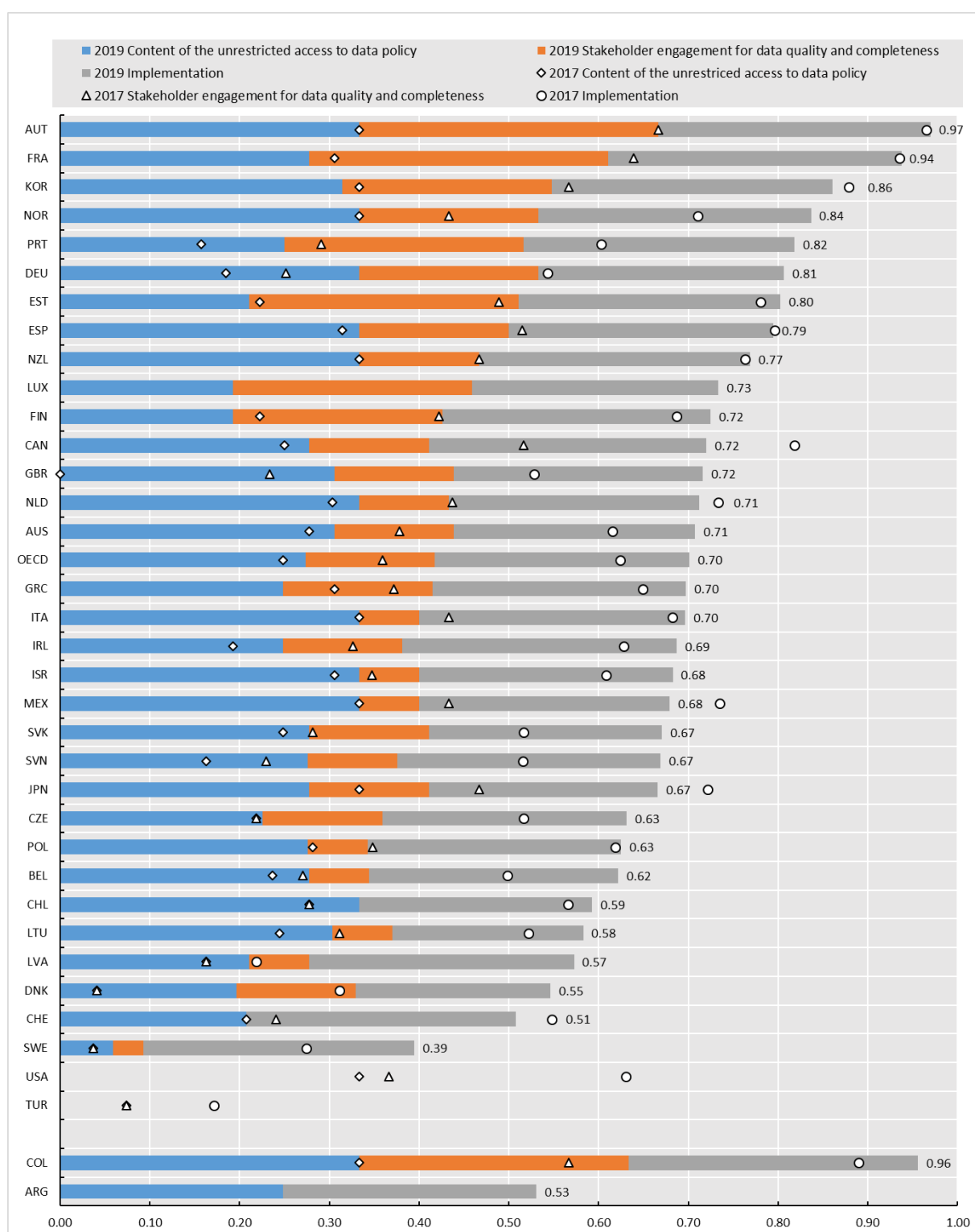
Note: Data for 2017 are not available for, Hungary, Iceland and Luxembourg. Data for 2019 are not available for Hungary, Iceland, Turkey and the United States. On data for Israel, see http://doi.org/10.1787/888932315602.
Source: OECD (2016, 2018), Open Government Data Survey.

Figure 2.2. Pillar 2 Data Accessibility – OECD Average 2017 vs. 2019 by Sub-pillar
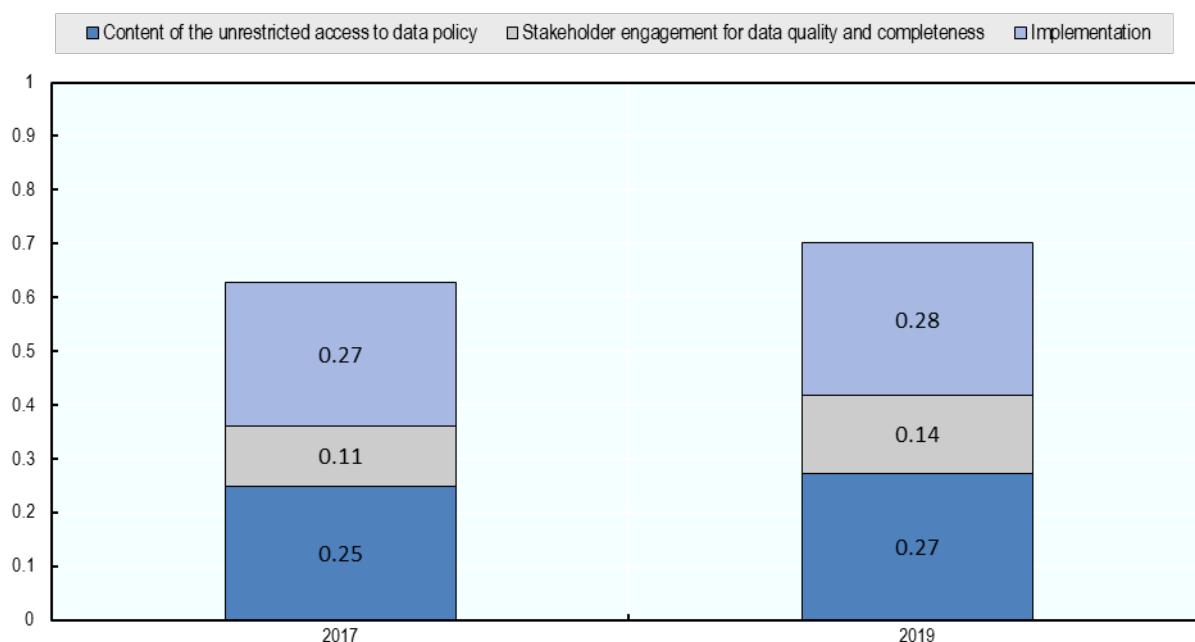
Source: OECD Open Government Data Survey 2016 and 2018

Content of the unrestricted access to data policy (Sub-pillar 2.1)

OECD governments should focus on increasing the production and sharing of high-quality data. This includes making sure data is released proactively (i.e. without users having to formally request release**), timely (either updated or in real-time), and that the data is understandable and reusable for both users and machines (e.g. by using metadata descriptions, common standards, and APIs).**

Making the most of open data policies means working for greater data accessibility, open data policies should ideally include the development of formal requirements to ensure that, when published and shared, government data is provided free of charge, in open licences, re-usable formats, with associated metadata, and in a timely and disaggregated manner. Today, a large majority of OECD countries have requirements to provide data free of charge, with open licences, and in machine-readable formats.

With the adoption of its E-Government Law[2] in 2017, **Germany** has made one of the most notable policy advancements to support data accessibility in recent years (see Figure 2.1). Article 12 in the law requires federal German authorities to provide data in machine-readable formats, with metadata descriptions, free of charge and with unrestricted access to re-use. Moreover, the law states that open data users should never be required to register or justify why they would like re-use government data available on the federal open data portal

Whereas requirements to provide data in reusable formats is a common practice today, the provision of disaggregated and timely data is still rarely mandated. Open data policies' growing maturity implies developing more advanced standards for data quality, that ensure data are relevant for users, up to date, and in formats which allow users (including government officials) to apply data and extract as much value as possible.

Also, addressing data quality and biases is essential in making data 'fit-for-purpose'. To use open data for better and more informed policies (e.g. as the United States with its *Foundations for Evidence-Based Policymaking act of 2018)* the data should also reflect the diversity of experiences, needs, and barriers faced by all citizens.

> **While the publication of disaggregated data is important, challenges related to data quality need to be addressed continuously in a comprehensive fashion throughout the entire data value cycle. This means addressing data quality issues and biases in the collection and production stage of data.**

Increasing the access to disaggregated data may help uncover and monitor social injustices and challenges that are hidden in aggregated data. Among OECD countries, **Belgium** is an example of a country with formal requirements for public sector organisations to collect and publish disaggregated data (in this case by gender) (OECD, 2018[25]).

While few countries mandate data to be disaggregated, there are many examples of how in practice such data has helped shape better and more inclusive policies. For example, in **Sweden**, a gender-neutral snow-clearing policy was implemented by the City of Stockholm, after analysing disaggregated data on the transport patterns of women and men[3]. As a pioneer of gender budgeting, the central Swedish government has also committed to analyse sex-disaggregated data as part of the state budget process (OECD, 2017[32]). In **New Zealand**, the statistical framework *He Arotahi Tatauranga* ensures good-quality statistical data for, and about, the Māori population[4]. The framework is publicly available on Statistics New Zealand's website and promotes policies that are more inclusive of indigenous people.

During the 5th OECD Expert Group Meeting on Open Government Data (OECD, 2019[33]), the **United Kingdom** stressed the importance of understanding and addressing biases that exist in the production and collection of government data. The prevalence of bias can obstruct the usefulness of data in addressing policy issues, as it fails to provide the evidence needed to detect and confront problems faced by minorities or other disadvantaged groups in society. It is therefore paramount to not only focus on data formats and interoperability upgrades when working on government data quality (either for open data release or other data initiatives), but also on the reliability, usefulness and relevance of the data itself prior to its generation, collection, application and re-use. This implies for instance modifying automated decision-making models and promoting a new understanding that stresses the fact that current and new policy challenges (e.g. in terms of diversity and gender equality) require new ways of generating the data that inform policy and decision making.

Stakeholder engagement for data quality and completeness (Sub-pillar 2.2)

> **Governments who are keen on embracing open by default should not view OGD portals as mere websites, 'data catalogues', or top-down approaches for data supply, but rather as spaces for open and democratic engagement of diverse digital communities for innovation, collaboration, and knowledge sharing. By doing this, open government data contribute to enable the Government as a Platform drawing upon the access to and sharing of data.**

As discussed in the OECD Open Government Data Report (2018[7]), an emerging trend in recent years is the use of central/federal OGD portals as tools for enhanced collaboration. This implies changing governments' understanding of open data portals. Instead of being considered simply as 'windows' for data access, portals need to be seen as value platforms that use data as a tool for value co-creation and collaboration.

Governments in OECD countries are indeed beginning to convert their portals into more user-driven platforms where users can share ideas between them and the government. Feedback sections are today a visible feature on most OGD portals - only three OECD countries (Chile, Switzerland and Sweden) lack this element. While feedback sections are broadly used to communicate with the government, other channels, such as forums for discussion - where users can connect and share ideas among themselves - are still relatively rare (only 8 OECD countries have such in place).

Yet, despite the shift in the development of OGD portals towards being more focused on users, the level of stakeholder engagement for data quality remains low relative to level of policy content and implementation for data accessibility. This circumstance is partly explained by the limited number of countries that allow external users (e.g. citizens, civil society, academia, businesses) to add datasets, data visualisations, and organisations to the OGD portal.

The transformation of open government data portals into thriving 'data communities' for crowd-sourcing does call for some rethinking and a cultural change within the public administration, which in turn requires time, knowledge among civil servants and public officials, and political willingness. This is a fundamental part of reaching the final stage of the OECD maturity model for open data (see Annex A) where data itself enable Government as a Platform (GaaP) (see Figure 2.3). Portals for open data can play a key role in this respect.

Figure 2.3. Government as a Platform (GaaP)

Government as a platform: The OECD Digital Government perspective
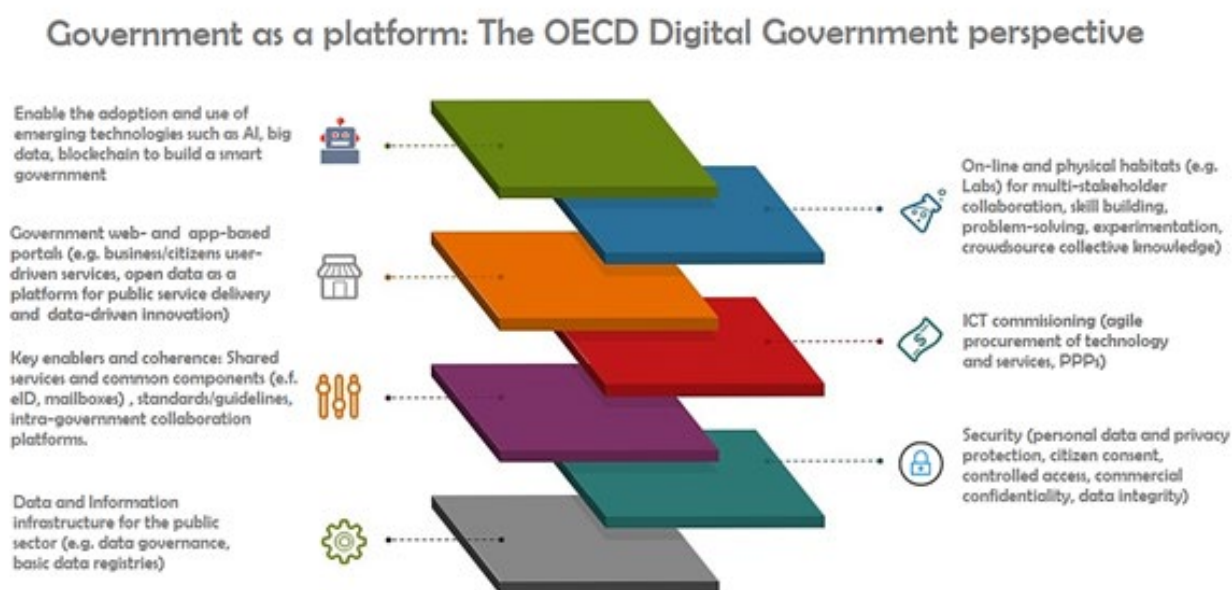
Source: OECD (2019), Digital Government Review of Sweden: Towards a Data-driven Public Sector.

Being an early adopter of OGD policies, **France** has one of the most highly developed central open government data portals (data.gouv.fr) among OECD countries, something also reflected in their score for Data Accessibility in the OURdata Index. On the French portal, users can add datasets categorised as being of 'public interest' with virtual stamps that separate these data from 'certified' datasets published by public sector entities. Inspired by the French portal, **Portugal** developed its portal (dados.gov.pt/) based on the same model. Other OECD countries who allow users to add data to the open government data portal are **Estonia**, where users can add data by registering a GitHub account, and **Finland** where individuals can add a profile, their datasets, and data visualisations.

The actions made by France, Portugal, Estonia and Finland demonstrate the possibility of developing more user-driven open government data portals without jeopardising data quality, something often raised as a concern by countries who have not yet embraced the idea of making portals a more collaborative digital space.

Implementation (Sub-pillar 2.3): From requirements on data quality to accessibility in practice

Formal requirements in policy documents are not sufficient to ensure the release of and access to re-usable datasets on open government data portals.

As of 2019, all OECD countries have open data portals in place, and the level of accessible data on central/federal open data portals is, as noted earlier, very high, even in countries below the OECD average. For instance, except for **Estonia** and **Israel**, all OECD countries provide metadata descriptions together with a majority of datasets on the portals. Also, OECD countries have made great advancements in terms of reducing barriers to access open government data, as most countries allow users to access and re-use data without having to go through a registration process.

Yet, although the overall level of implementation in terms of accessibility is encouraging and greatly due to the enhancement of OGD portals, some countries could still work on increasing the proportion of high quality, timely and disaggregated data in machine-readable, structured and non-proprietary formats (e.g. CSV and JSON).

For example, as seen in data from the OECD Open Government Data Survey 2018 (OECD, 2018[25]), **Japan**, **Australia** and **Lithuania** still provide many datasets in non-machine-readable formats (e.g. PDFs) and in proprietary formats (e.g. Excel files) as open data. While these data may still be very useful, open government data is not solely about disclosing government information for transparency purposes, but to proactively share government data in formats that are easy and open to re-use by both humans and machines towards greater re-use, value and integration.

Notes

[1] For more information see: https://webfoundation.org/2016/10/openwashing-anyone/).

[2] https://www.gesetze-im-internet.de/egovg/__12a.html

[3] For more information see: https://www.cbc.ca/news/politics/gender-analysis-budget-snow-sweden-1.4494640

[4] For more information see: http://archive.stats.govt.nz/browse_for_stats/people_and_communities/maori/how-to-think-maori-info-needs/he-arotahi-tatauranga.aspx

3. Pillar 3: Government support for data reuse

Governments have a key responsibility in communicating with the data ecosystem, raising awareness and promoting greater reuse of the data they hold. This implies building capacities within the public sector as well as reaching out and engaging with data users to foster data re-use.

Comparing the results of the 2019 and 2017 OURdata Index for Pillar 3 (Figure 3.1), the emphasis in OECD countries' work to promote re-use has shifted slightly from data promotion initiatives amongst civil society and businesses, to enhancing public officials' data literacy skills and monitoring the impacts of open data. As seen in Figure 3.2, the OECD average of Sub-pillar 3.1 *Data promotion Initiatives and Partnerships* decreased from 0.17 to 0.16, while the OECD average for Sub-pillar 3.2 and Sub-pillar 3.3 increased (from 0.18 to 0.21 and 0.10 to 0.14 respectively).

This change in trends points to a greater understanding among governments that:

a) Engaged, skilled and motivated public servants are the backbone for effective and coherent open data policy implementation, and thus for the maturity and sustainability of open data policies

b) Data capacity within the public sector is key for making public servants more active in using data, and subsequently to promote the adoption of new emerging technologies such as AI

c) Finding more evidence of the impacts of open data can help legitimise and strengthen further efforts in this area

Despite these positive aspects, the drop in engagement of users outside government (Sub-pillar 3.1) is discouraging, because the continuity of open data efforts is contingent upon the discovery, interest, and use of open data by civil society, businesses and other actors of the community. User engagement plays a key role in policy sustainability as it can contribute to increasing bottom-up pressure from open data users in the face of changing policy priorities and increases the value creation through collective contribution. This is particularly true as open government data can increasingly become a source for data-driven social and economic innovation. In this line, promoting, collecting and presenting successful cases of government data reuse is essential to unlock the full potential of open data policies and ensure their sustainability.

Figure 3.1. Pillar 3: Government support to the re-use (Results for 2019 and 2017)
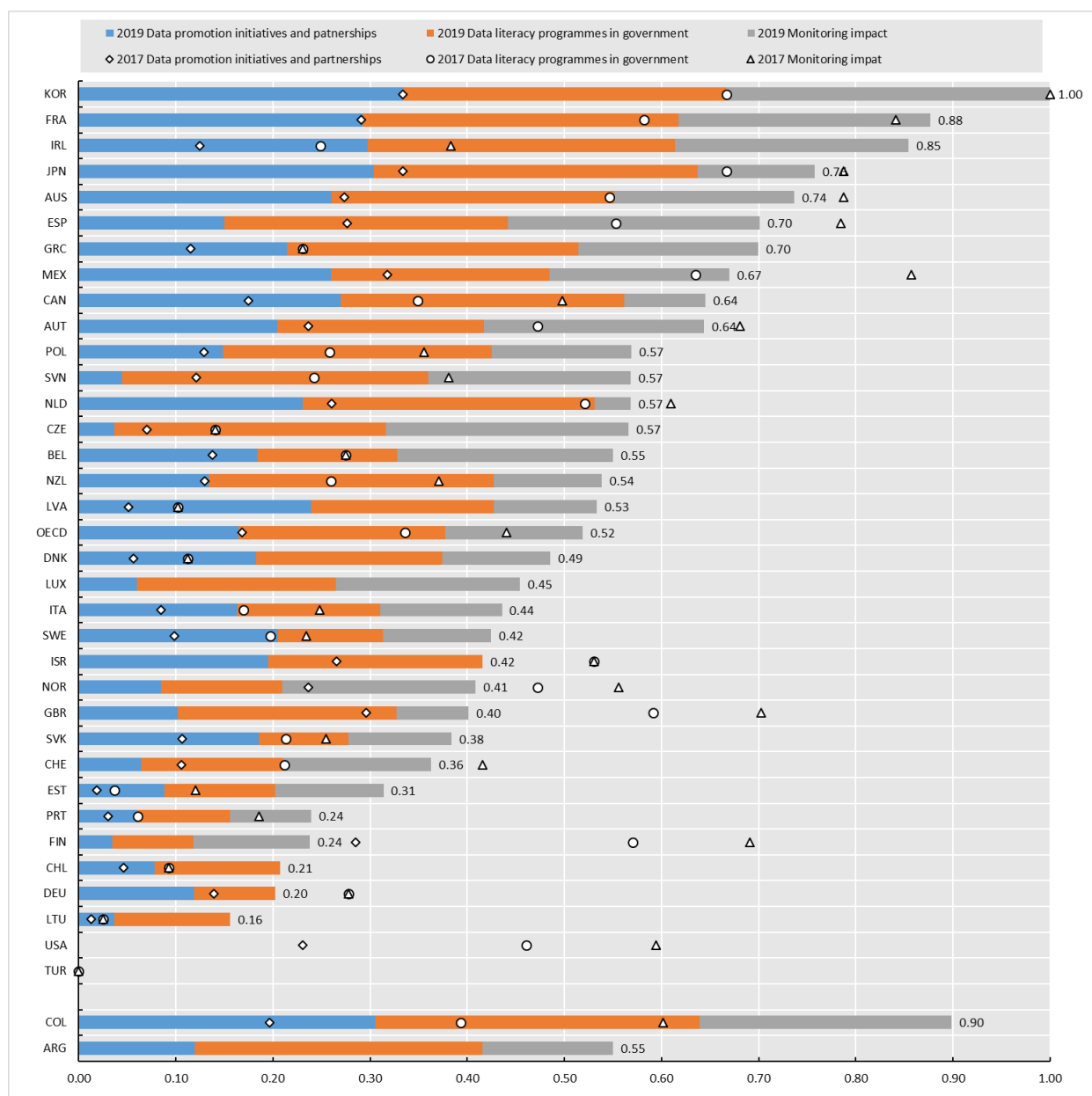
Note: Data for 2017 are not available for, Hungary, Iceland and Luxembourg. Data for 2019 are not available for Hungary, Iceland, Turkey and the United States. On data for Israel, see http://doi.org/10.1787/888932315602.
Source: OECD (2016, 2018), Open Government Data Survey.

Figure 3.2. Pillar 3 Government support to the re-use – OECD Average 2017 vs. 2019 by Sub-pillar
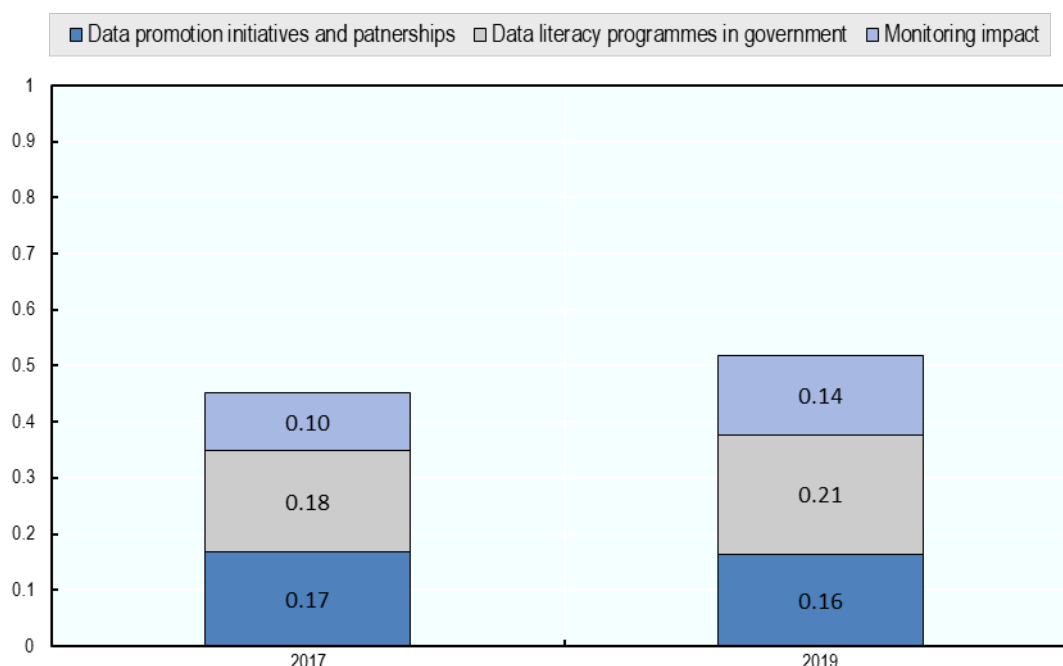
Source: Source: OECD Open Government Data Survey 2016 & 2018

Data promotion initiatives and partnerships (Sub-pillar 3.1)

A number of OECD countries previously regarded as among the most mature in terms of open data policies, are today doing much less to promote OGD re-use among external users. Greater impact requires governments' commitment in providing sustainable platforms, incentives and tools for collaboration and crowdsourcing.

Today, 14 of 32 OECD countries do less in practice to regularly promote OGD re-use outside the public sector, compared to 2017. Among these, some countries such as **Finland**, **Norway** and the **United Kingdom**, have reduced their efforts drastically. This suggests that, the availability of formal requirements promoting user engagement does not imply sustained implementation. For instance, changing political and policy priorities do have a major impact on the implementation of previously successful open data programmes and initiatives, which in turn can negatively affect the level of re-use and the definition of new partnerships with open data users. This displays an evident need for countries to develop a more sustainable and long-term approach to supporting and promoting OGD re-use outside the public sector sphere.

The establishment of long-term partnerships with the open data community is one way to build continuity and higher engagement. In **Sweden**, the initiative *Hack for Sweden*[1] started as a one-year hackathon event led by the Swedish Public Employment Service (Arbetsförmedlingen), and has now been transformed into an all-year round platform for citizen driven innovation with over 95 government agencies and businesses cooperating as partners, supporting innovation through the use of open data (Hack for Sweden, 2019[34]). In **Korea**, the start-up hub *Open Square-D*[2] has been operating since 2016 as a community where open data start-ups receive government support and can share ideas with open data experts and investors.

In 2016, the Open Data Governance Board in **Ireland** established the *Open Data Engagement fund*[3] with the intention to support initiatives that promote the re-use of open data available on Ireland's central OGD platform *data.gov.ie*. The fund has since helped finance and inspire numerous open data projects by academia, businesses and civil society actors.

The above cases demonstrate recent approaches to more long-term, sustainable and effective support data re-use. Still, ad-hoc re-use efforts can promote value in specific cases. In **Japan**, the central government organised a co-creation event with the aim of helping more vulnerable groups of society, such as disabled and old people, to more easily navigate the complex public transport system in Tokyo during the 2020 Olympic Games (OECD, 2018[25]). These events can inspire re-use of government data, the challenge lies in ensuring that these one-time events and exercises are the exception, not the rule.

Data literacy programmes in government (Sub-pillar 3.2)

> **Across OECD countries, open data is becoming more intertwined with the general development of public sector data governance and data management capacity.**

Increasing investments in capacity building and skills for open data within the public administration is vital for successful open data policies (OECD, 2019[24]). Yet, the growing development of broader national data strategies is increasingly linking once-isolated open data capacity building efforts with broader the development of broader data management capacities inside the public sector.

In **Slovenia**, the Administrative Academy has held training sessions for public servants on data management and open data. This seem to also be reflected in the country's improved performance in Pillar 3.2 *Data Literacy Programmes in Government*. In **Greece**, public officials receive training on open data as part of the *National Coalition for Digital Skills and Jobs initiative*.

Yet, training programs for open data should not only focus on securing a good understanding of what open government data is and how to publish it, but also on improving public servants' awareness of how data can be used inside the public sector to improve daily operations. This leads to the question on how governments can further stimulate civil servants' data reuse , e.g. how to promote the use of open data (including those shared by non-governmental actors) in the process of designing public services and developing policies. Today, only 8 out of 32 OECD countries provide performance incentives, or guidelines, that promote the re-use of open data in policy development processes.

OECD countries can do more to make public servants more engaged and interested in using open data, as well as in using data analysis, that supports the adoption of emerging technologies such as AI inside the public sector. For instance, in the **United States**, the OPEN Government Data Act makes the Chief Data Officers (CDOs) of federal agencies responsible for ensuring that the use of data is maximised within their organisation. Also, the United States' 2019-2020 Federal Data Strategy Action Plan, foresees development of a curated data skills catalogue "to help agencies develop competencies for managing data as a strategic asset and making data-driven decisions" (US Government, 2020[35]). The combination of these two instruments, along with enhanced incentives and guidelines, are good examples of effective tools that can accelerate the use of open data, and data in general, inside the public sector, to create public value.

Monitoring impact (Sub-pillar 3.3)

OECD countries are taking further steps towards monitoring the impact of open data on economic and social factors. This not only involves research, but also the collection and display of various re-use examples on central/federal open data portals.

It is evident that countries whose governments proactively try to find evidence and monitor the impact of open data also increase the likelihood of implementing policies that lead to sustainable impact. During the 5th Expert Group Meeting on Open Government Data (OECD, 2019[33]), countries underlined the relevance of showing tangible evidence of the benefits of open government data policies as a precondition to further motivate the sustainable release and funding of open data initiatives.

It seems as if OECD countries have today entered a consolidation stage, where measuring the results of previous (or current) open data initiatives is needed to ensure continuity and long-term sustainability. Indeed, the OECD average score for Sub-Pillar 3.3 *Monitoring Impact* showed the greatest increase of all Sub-Pillars to Pillar 3 *Government support to the re-use*, with a score of 0.10 in 2017, and 0.14 in 2019.

While research on the social and economic benefits of open government data are still relatively sparse, OECD countries are doing more in this area. In **Japan**, the central government has funded a research project by the Shimane University to estimate the economic effects of OGD using a fact-finding survey (OECD, 2018[25]). In 2017, the Prime Minister's Office of **Finland** published a report on the use and economic impact of OGD that assessed the relationship between firms' re-use and their innovation production[4]. In **Denmark**, the Agency for Data Supply and Efficiency teamed with PwC to conduct a socio-economic impact assessment of open geodata[5]. The report included an evaluation of the effect of open geodata on new business models, public sector efficiency, and citizens' health. In **Spain**, the Multisectoral Information Association, ASEDIE, publishes the Infomediary Sector Report annually in an effort to monitor and assess the effect of open data on economic activity in the country[6].

The trend of constructing more advanced open data portals has led to countries displaying more re-use examples, such as mobile applications, data visualisations and APIs, to the public. Examples are often applications or data visualisations, however, some countries, such as **France**, also present other examples such as blog posts and news articles. It is important to show that re-use of open data is not limited to people that are skilled in programming or advanced data analysis. Displaying many different examples can help inspire a wider range of potential users to reuse government data, including for example journalists, researchers or social media influencers.

As governments are coming to grips with the need to monitor the effect of OGD re-use *in general* to motivate open data policies, this should as well be applied to re-use *within* the public sector.

The interest and usefulness of using OGD and analysing data inside the public sector are discussed throughout this report. However, conversely, only six OECD countries are assessing the impacts of OGD on public sector performance. This could be linked to the fact governments are still in the early stages of self-building capacities for data re-use, and therefore do not consider it relevant to measure its impact.

The re-use of open data by public servants could undoubtedly have numerous positive impacts on public sector performance, e.g. increased efficiency, reduced costs, an improved overall levels transparency and accountability. If public sector employees are presented with tangible evidence of the positive impacts of data re-use on their work, this should most likely incentivise greater re-use and engagement in improving open data initiatives, a critical component of the successfulness of open data policies. Together, these can contribute in the long term to building a data-driven public sector and strengthening the overall management and governance of data.

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Annex A. The OECD maturity model for open data policies

The OECD work on open government data, established in 2013, has collected evidence and expertise on specific characteristics that determine the maturity level of open government data policies across OECD countries and partner economies. The OECD is developing an eight-stage maturity level model to assess, in general terms, the state of development of the open data policy, including:

1. **The lowest-hanging fruit**: With a strong focus on the supply side, this level of development strictly centres on data publication as the main objective of the open data policy. The government releases those data that are easier to publish often without a clear strategy behind this decision. Standards and guidelines for data publication and quality (see Chapter 3) are in most cases absent. There is not a full understanding of the concept of open data among public sector institutions (e.g. proprietary formats, PDFs). Extrinsic drivers motivate data publication (legal compliance, financial incentives).

2. **The transparency approach**: Focus is on the supply of data. Data publication Is reactive, passive and often opportunities are missed out for it to be strategic. While some datasets are available on the portal, user action is needed to request data. Data request tools are often inefficient and build on freedom of information channels (public sector information access requests). There is a strong focus on the publication of aggregated databases in proprietary formats (e.g. the use of APIs [application programming interfaces] is not considered).

3. **Early consultation:** Governments and public sector organisations start showing signs of acknowledging the value of user engagement. Some initiatives to identify data demand are in place. Guidelines and standards are available, but further capacity-building exercises are needed to help public sector organisations understand open data. User engagement and feedback stress the relevance of good quality data. Metadata emerges as a key element of open government data. There is early discussion on data governance tools (e.g. data catalogues).

4. **User engagement:** The focus shifts from consultation to collaboration. These exercises inform data publication. Initiatives such as hackathons are implemented, but sometimes without a clear purpose. Champions and data stewardship emerge in the public sector. Data request and feedback channels are available on the portal. Developing skills and creating capacities within the external ecosystem emerge as a key element of open data policies. Intrinsic motivation drives open data initiatives.

5. **Problem-solving approach**: In parallel with recognising the relevance of data demand, the government acknowledges the contribution of open government data to the broad policy agenda. The data supply takes a strategic approach. High value data taxonomies are published on the portal in line with their contribution to the achievement of policy goals and the political agenda.

6. **User engagement:** Exercises centre on the problem to be addressed, not the data. There is a focus on the sustainability of these initiatives and on the open data policy as a whole. Discussion on the impact of open data policies emerges, as well as on the need to establish data causality. Attention to skill development moves from a focus on open government data to broader digital transformation skills development efforts inside the public sector (digital, innovation and data skills).

Automated data exchange is in place. Multiple but inter-connected government data sources exist (e.g. data harvesting).

7. **Data as infrastructure (Data as a Platform, DaaP):** The government balances data supply and demand. Open government data is identified as a product of broader data governance efforts in the public sector and a result of the data value chain. Efforts are targeted, and open government data is further embedded in sectoral policies. High-quality and timely open government data are used as an asset for the development of services and products. OGD emerges as a long-term commitment, not a short-term, ad hoc activity.

8. **Government as a Platform (GaaP):** Multi-stakeholder engagement, value co-creation, online and physical collaboration spaces and data communities are at the centre of this approach. The value of the portal is not only based on the data it provides (DaaP) but also on its value for the ecosystem. The government portal is a driver for data-driven digital innovation and knowledge sharing: The central open government data portal changes to a portal for open data and a community platform. Data supply from external users. The discussion is centred on data policies, not on open government data policies, with a clear connection to digital government and public sector digital transformation policies, and open data is clearly acknowledged as a means to reach this end rather than being seen as an end in itself.

Source: Originally published in OECD (2018), Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264305847-en.

Notes

[1] https://hackforsweden.se/

[2] http://www.opensquared.org/

[3] https://data.gov.ie/pages/open-data-engagment-fund

[4] For more information see: https://tietokayttoon.fi/documents/10616/3866814/40_avoimen+datan+16032017.pdf/0444467d-5400-4f0c-8728-2447cef039ad?

[5] For more information see: https://sdfe.dk/media/2917052/20170317-the-impact-of-the-open-geographical-data-management-summary-version-13-pwc-qrvkvdr.pdf

[6] For more information see: http://www.asedie.es/informes.html