Open Data Maturity

2025 Open Data Maturity Report

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Executive summary

The 2025 open data maturity (ODM) assessment evaluated the maturity of countries in the field of open data. In particular, the assessment measured the progress of European countries in making public sector information available and stimulating its reuse, in line with the open data directive (Directive (EU) 2019/1024). A total of 36 countries participated in this 11th consecutive annual assessment, including the 27 EU Member States, 3 European Free Trade Association (EFTA) countries (Iceland, Norway and Switzerland) and 6 candidate countries (Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia and Ukraine).

This report aims to help readers better understand the level of ODM of the participating countries, to identify areas for improvement and to enable participating countries to learn from one another. As an annual publication, the ODM report also captures the progress made by countries over time, with the 2025 report providing the latest information. Moreover, it gives an overview of best practices implemented across Europe that could be transferred to other national and local contexts.

The assessment methodology defines ODM using four dimensions.

- **Policy** investigates the open data policies and strategies in place in the participating countries, the national governance models for managing open data and the measures applied to implement policies and strategies.
- **Portal** investigates the functionality of national open data portals, the extent to which users' needs and behaviour are examined to improve the portal, the availability of open data across different domains and the approach to ensuring the portal's sustainability.
- **Quality** assesses the measures adopted by portal managers to ensure the systematic harvesting of metadata, the monitoring of metadata quality and compliance with the DCAT-AP metadata standard, and the quality of deployment of the published data on the national portal.
- **Impact** analyses the willingness, preparedness and ability of countries to measure both the reuse of open data and the impact created through this reuse.

Open data maturity scores in 2025

Figure 1 and Figure 2 show the ODM scores of all 36 participating countries for 2025. Highlights from these results include the following points.

- A total of 23 countries increased their ODM year-on-year; 10 countries scored the same overall as in 2024; and one country experienced a decrease in their overall maturity score. Montenegro and North Macedonia were not part of last year's assessment, so year-on-year comparisons are not available.
- Maturity scores continue to rise, with many countries (21 out of 36; 58 %) having a score above 80 %.
- The Member States improved their average maturity score to 86 %, increasing by 3 pp compared to 2024.
- Among EU Member States, **France** leads with full maturity on the topics evaluated in the assessment (100 %), followed closely by **Lithuania** and **Poland** (98 %). **Norway** (92 %) continues to rank highest among the participating EFTA countries, while Ukraine (97 %) leads among the participating candidate countries.
- The biggest climbers are **Albania** (+ 23 pp), **Malta** (+ 19 pp), and **Germany** (+ 11 pp).

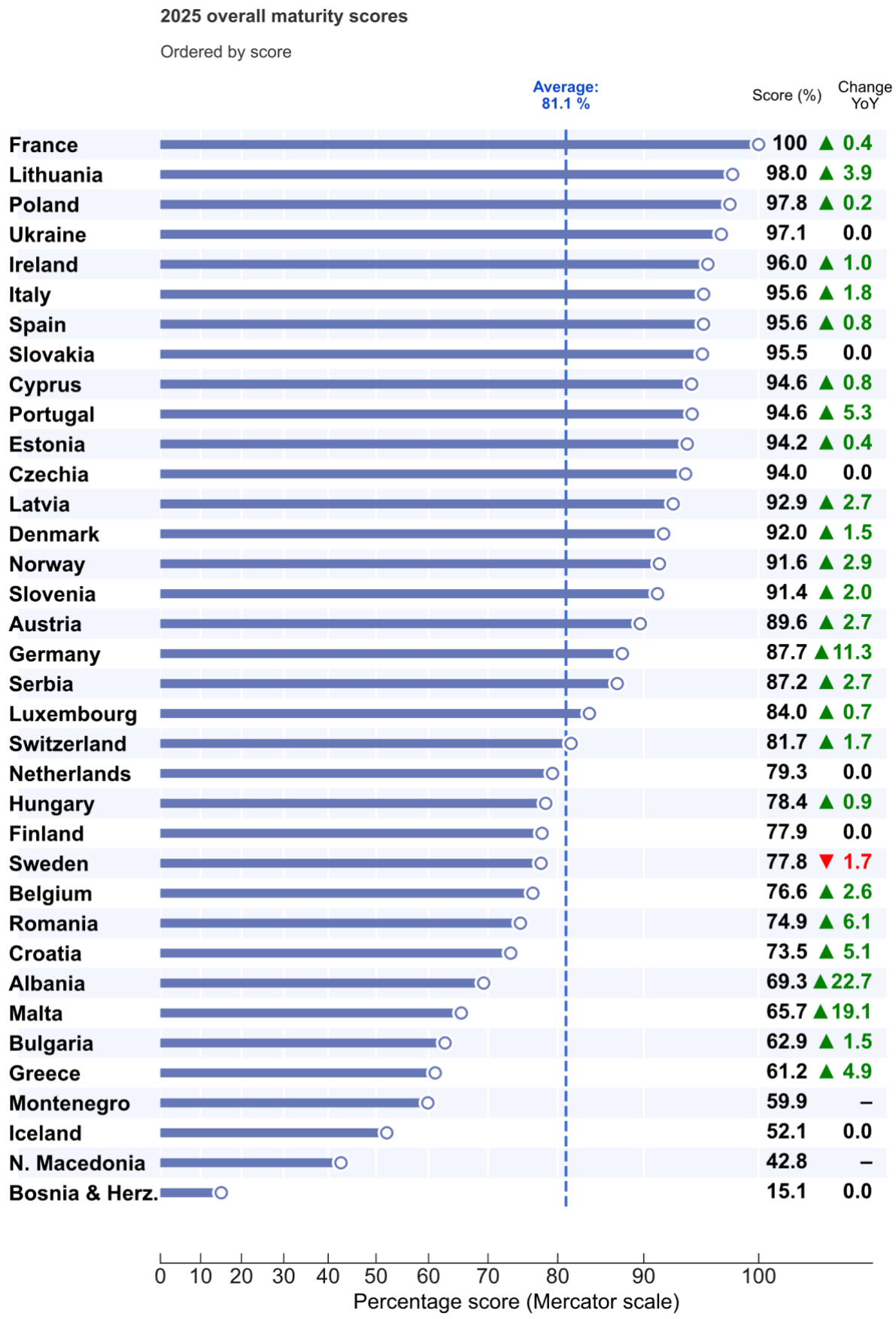

Figure 1: The average overall maturity score increased from 80 % in 2024 to 81 % in 2025.
NB: YoY, year-on-year.

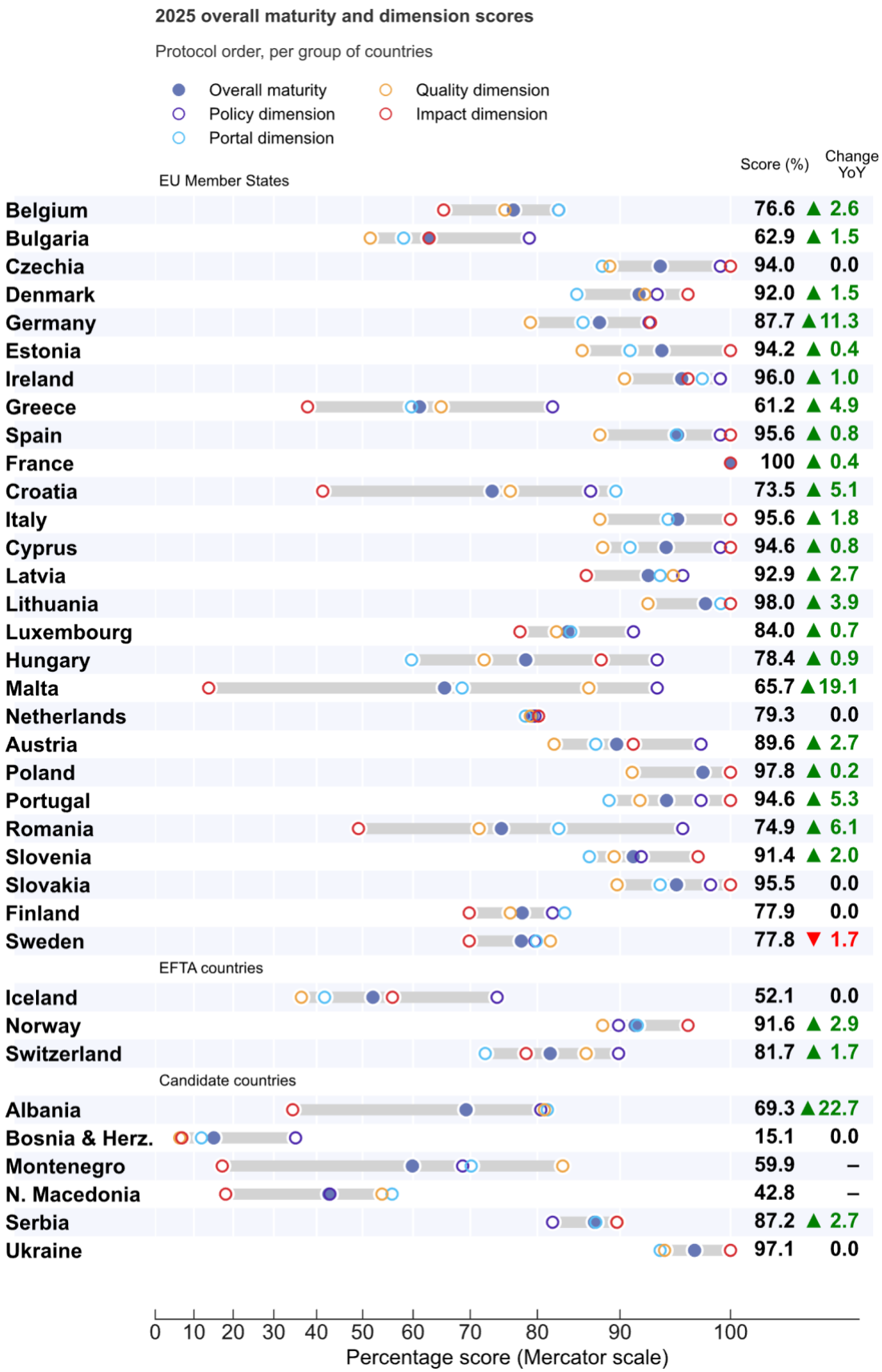

Figure 2: The overall maturity score is the average of the scores for each of the four underlying dimensions.

NB: EFTA, European Free Trade Association; YoY, year-on-year.

Highlights from the four dimensions of the 2025 open data maturity assessment

Figure 3 shows the average scores over time on the four maturity dimensions for the Member States.

1. **The policy dimension remains (as it has been since 2015) the most mature dimension on average (93 %) in the EU, with a 2 pp increase since 2024. This growth reflects ongoing improvements in the framework for open data policies (+ 3 pp) and the implementation of open data initiatives (+ 2 pp).**
   - Compared with 2024, more countries (up from 19 to 22 Member States) report that there are processes in place to ensure that open data policies/strategies are updated and revised as needed. This indicates that open data governance is becoming more institutionalised, with countries increasingly embedding open data practices into long-term administrative routines.
   - More countries (up from 14 to 16 Member States) report that their national policy/strategy outlines measures to incentivise the publication of and access to citizen-generated data.
   - More countries (up from 21 to 25 Member States) report that at least some of their public bodies publishing HVDs have denoted this in the dataset's metadata.
   - All Member States report that:
     — they are taking steps to apply the implementing regulation on high-value datasets (HVDs) (Commission Implementing Regulation (EU) 2023/138);
     — the national open data team and the wider network of open data officers in their countries have regular exchanges of knowledge and experience;
     — public sector bodies and open data refusers in their countries regularly exchange;
     — they have plans for publishing open data at the public body level;
     — they have processes in place to ensure that their open data policies and strategies are implemented;
     — they have activities in place to assist data holders with the publication of open data;
     — they offer professional development or training plans for civil servants working with data.
   - Key practices and trends are as follows:
     — countries combine planning, monitoring, and capacity building to ensure effective implementation of open data policies;
     — countries establish multi-stakeholder governance bodies to promote inclusive coordination and alignment between national and local open data initiatives;
     — countries develop practical resources such as handbooks and checklists to foster a culture of open data reuse within public administrations.
2. **The portal dimension remains the second-most-mature category (85 %) in the EU, with a 4 pp increase since 2024. Despite the decrease in average score in 2024, the indicator has returned to its highest level since 2015. This growth is driven by significant increases in the features offered by portals (+ 5 pp) and efforts to ensure the sustainability of portals (+ 3 pp).**
   - Compared to 2024, more countries (up from 12 to 15 Member States) offer their users a way to programmatically query metadata through an SPARQL access point. This means that users and applications can retrieve metadata in a structured, automated way using linked data standards. The increase indicates a commitment to improving technical accessibility and interoperability, enabling more advanced and automated reuse of open data.
   - Five additional countries (up from 19 to 24 Member States) report actively promoting HVDs on their national portals.
   - More countries (up from 22 to 25 Member States) report that they conduct other activities to understand users' needs.

- Four additional countries (up from 22 to 26 Member States) report that they enable users to find information and news on relevant open data topics in the country on the national open data portal.
- All Member States report:
  - having a national portal that enables users to search for open datasets and download open data;
  - offering the users of its national portal a way to programmatically query the metadata via an API;
  - that their portal offers a mechanism for users to provide general feedback, such as a 'Contact us' or 'Feedback' button;
  - monitoring the portal's traffic (e.g. the number of unique visitors, visitor profiles, the percentage of machine traffic, the number of downloads for each dataset);
  - taking measures to optimise the searchability and discoverability of content (data and editorial);
  - having metadata available on the portal in clear, plain language to enable humans to read and understand it;
  - identifying the data providers that are not yet publishing data on the national portal;
  - taking actions to assist these data providers with their publication process.
- Key practices and trends are as follows.
  - countries base portal improvements on multi-channel user feedback to ensure continuous enhancement of functionality and user experience;
  - countries provide structured support and resources to help data providers publish high-quality datasets aligned with national standards;
  - countries develop long-term plans and appoint dedicated coordinators to ensure the sustainability and expansion of open data.

3. **The quality dimension is the third most mature (83 %) category, with a 4 pp increase from 2024. This is a primarily driven by increases in the metadata currency and completeness' (+ 7 pp) and 'deployment quality and linked data' (+ 4 pp) indicators.**
   - More countries (up from 16 to 21 Member States) report that they implemented the DCAT-AP high-value datasets tag to denote high-value datasets in their (national) open data portal(s).
   - More countries (up from 19 to 23 Member States) report more than 90 % of their licences are provided in a structured data format.
   - More countries (up from 8 to 11 Members States) report more than 90 % of their datasets use uniform resource identifies.
   - More countries (up from 20 to 23 Member States) report undertaking efforts to ensure that published data covers the complete time series.
   - Key practices and trends are as follows.
     - Countries report the publication of manuals and handbooks as a practice for guiding data owners in producing high-quality metadata;
     - Countries are increasingly upgrading their national open data portals to align with European interoperability standards such as DCAT-AP;
     - A key challenge highlighted by countries for DCAT-AP compliance is technical integration from diverse systems.
4. **The impact dimension is the least mature (82 %), with a 2 pp increase since the 2024 assessment.**
   - Nearly all Member States (96 %) – along with all EFTA countries and the majority of candidate countries (four out of six) – now report collaboration between government and civil society or academia to create open data impact in their country .

- Nearly all Member States (96 %) – along with nearly all EFTA countries (two out of three) and the majority of candidate countries (four out of six) – report having a definition of open data impact.
- While the 'created impact' indicator (77 %) lags behind other impact indicators, maturity on this indicator has increased by more than 10 pp since its introduction in 2022.
- Key practices and trends are as follows.
  - Countries report the focus on systematic funding that sustains long-term capacity and fosters collaboration between government and civil society;
  - Countries report the adoption of formal frameworks and structured methodologies that provide a systematic way to assess the impact of open data;
  - More countries report reuse cases demonstrating the impact of open data on the level of productivity in their national contexts.

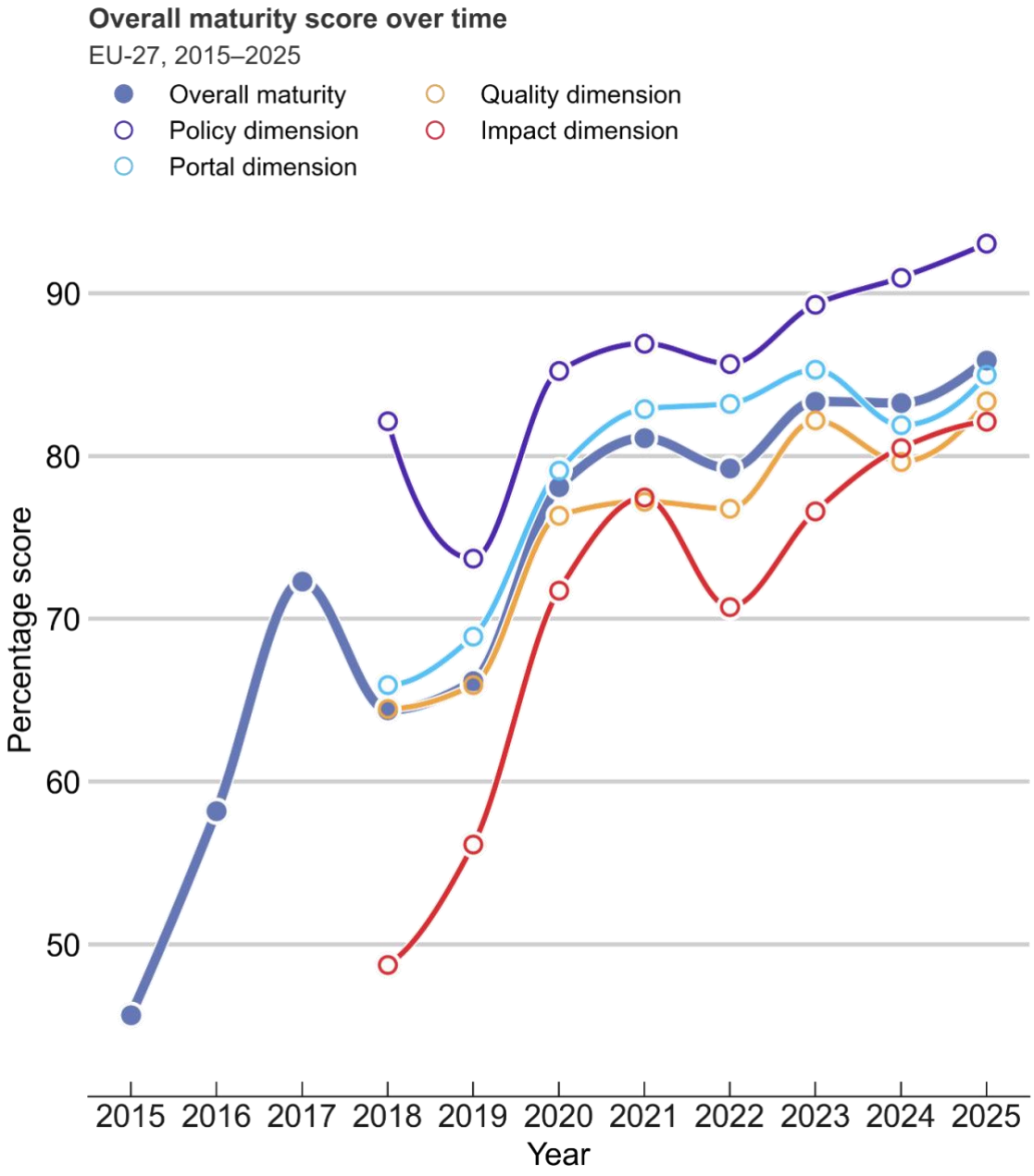

Figure 3: Average EU-27 overall maturity score and score on each dimension (2015–2025).

Spotlight on high-value datasets

The High-Value Datasets (HVDs) implementing regulation, effective since June 2024, provides a legal foundation aimed at improving the accessibility and usability of strategically important datasets. Several Member States, particularly **Lithuania**, **Latvia**, **Estonia**, **Denmark**, **Finland** and **France**, are self-reported as leading in implementing the regulation's requirements. Overall, Member States are progressing most rapidly in the categories of statistical (82 %), geospatial (79 %), and earth observation and environmental (77 %) datasets. Among the requirements, the most advanced aspects include identifying and cataloguing HVDs (82 %), establishing new roles and workflows (79 %), and overcoming legal challenges (76 %). In contrast, technical elements such as enhancing metadata quality (74 %), enabling machine-readable formats via APIs (73 %), and offering bulk download options (73 %) are less mature but developed at a greater pace compared to last year than the organisational requirements.

The following activities are reported across the four dimensions of the ODM questionnaire in relation to HVDs:

- 24 Member States (89 %) reported actively promoting HVDs through their national data portals. These portals often use editorial features like tags and labels to boost dataset visibility and facilitate targeted reuse. Common strategies include filtering tools that help users navigate the six HVD categories more easily, as well as dedicated portal sections that showcase available HVDs and provide context on their relevance and recent updates.
- 17 Member States (63 %) report that they have implemented the DCAT-AP HVD tag on their open data portals. Countries report integrating HVDs in their national portals from existing geoportals, providing seamless access to geospatial data. Furthermore, several countries with advanced geospatial and environmental data initiatives report using the infrastructure for spatial information in Europe (INSPIRE) directive (Directive 2007/2/EC) to ensure cross-border interoperability. Those who do not report implementing the DCAT-AP HVD tag report challenges regarding compliance across all public bodies and difficulties in adapting their Comprehensive Knowledge Archive Network (CKAN) systems to implement requirements for HVDs.
- 21 Member States (78 %) report that they have implemented other measures to ensure that HVDs are interoperable with datasets from other countries. Member States report communicating directly with other countries' data providers and utilising standardised licences or data formats to encourage cross-border reuse.
- 19 Member States (70 %) report having implemented structured processes to monitor the reuse of data from HVDs. Many countries monitor the use of HVDs similarly to that of other datasets, employing usage analytics and portal monitoring frameworks to track engagement and access. Additionally, several Member States adopt more proactive measures, such as holding ad hoc meetings with public institutions to gain insights into HVD use, conducting interactive workshops to better understand user needs and mapping various use cases, particularly those that highlight the application of HVDs in scientific research.
- 22 Member States (81 %) report that they have implemented other measures to ensure HVDs are interoperable with datasets from other countries. Several countries introduced improvements to metadata management and discoverability. Enhancements include automated validation and technical upgrades such as CKAN extensions and SPARQL queries.

Outlook

Open data maturity (ODM) in Europe continues its upward trend, with most countries improving since last year. This reflects adaptation to the updated assessment methodology introduced in 2024 and alignment with evolving policy and technological requirements.

The **policy** dimension remains the most mature. Member States have established governance structures for open data, assigned civil servants specifically to open data topics and built systems to assist data holders and address policy challenges. Nonetheless, Member States continue to update and refine their data strategies with measures in the open data field such as to enhance the availability of dynamic and citizen-generated data and to support reuse by the private sector. Progress on implementing high-value datasets (HVDs) is ongoing.

Maturity on the **portal** dimension has rebounded after a dip in 2024. Enhancements include more countries providing users with APIs and SPARQL end points, offering preview functions for tabular and geospatial data, enhancing user feedback mechanisms, and promoting HVDs on their portals. Each year, several Member States continue to conduct large redevelopments of their portal, which translate to improved maturity on the portal dimension. The pilot indicator on portal performance highlight areas for further optimisation.

Like the portal dimension, maturity on the **quality** dimension saw significant gains. In previous years already Member States reported having numerous workflows and automated processes for harvesting metadata and monitoring its quality on their portals. In 2025, countries increasingly configure their systems to rapidly synchronise the metadata they harvest when changes are made at the source, make efforts to ensure that time series data are complete and are implementing HVD tags. Compliance with DCAT-AP standards improved, often linked to certain countries that undertook portal upgrades that focuses more on DCAT-AP standards. The pilot indicator on metadata quality as harvested by the European Data Portal highlights areas for further improvements.

Finally, performance on the **impact** dimension continues to improve, although more modestly than in recent years. Most countries define open data impact and foster collaboration with civil society and academia, but systematically collected data on the impact created by open data remains limited. Reuse cases are reported, though only a few new examples emerged compared to last year.

Chapter 1: Introduction

Background: open data policy in the European Union

The open data directive (Directive (EU) 2019/1024) encourages EU Member States to make as much publicly accessible information as possible available for reuse. The directive is 'recast', meaning it brings together the original directive on public sector information (Directive 2003/98/EC) and all the amendments made to it in a single legal act.

The core principle of the directive is to promote the reuse of information that is already being collected for government purposes, thus generating additional value once it is reused for different purposes. Therefore, the directive sets out a minimum standard for harmonising national rules and practices, aiming to reduce obstacles and promote reuse of public sector information to drive innovation. When it entered into force in 2019, the directive also answered the need to update the legislative framework in line with the fast-paced evolution of digital technologies, especially artificial intelligence.

Furthermore, the open data directive embraces the potential to generate important social, economic and environmental benefits through innovative applications of generally accessible public information. These benefits are pursued in particular by introducing the concept of high-value datasets (HVDs). The implementing regulation on HVDs (Commission Implementing Regulation (EU) 2023/138) specifies six specific categories of HVDs: geospatial, earth observation and environment, meteorological, statistics, companies and company ownership, and mobility. Due to the importance of these datasets, the regulation lays down rules ensuring their accessibility free of charge and in machine-readable formats. HVDs must be made available for reuse with minimal legal and technical restrictions. Moreover, public sector bodies have the obligation to make them available through application programming interfaces and, where relevant, as a bulk download. The implementing regulation entered into force in June 2024, and EU Member States report on their progress in applying it to the European Commission every two years starting from February 2025.

Not all public sector information can be released as open data. For example, some information is classified as confidential and sensitive, or the public administration that holds it may not have all the necessary rights to permit others to reuse it. Other legislation, such as the Data Governance Act (Regulation (EU) 2022/868), includes measures to stimulate the reuse of public sector information through specific access regimes. The European Register for Protected Data held by the Public Sector provides relevant information on what data is held by public authorities in the Member States, and registers are progressively being made available on the European Data Portal (data.europa.eu).

Measuring open data in Europe

Under the European Data Portal initiative, the Publications Office of the European Union and the Directorate-General for Communications Networks, Content and Technology have conducted an annual benchmarking exercise, by means of a survey of national representatives, since 2015 to assess the maturity of the open data landscape in Europe. The objective of this open data maturity (ODM) assessment is to evaluate the development of countries in the field of open data and to document their year-on-year progress. The assessment measures each country's progress in making public sector information available and stimulating its reuse. The assessment furthermore supports the development of open data best practices across Europe, serving as a tool for knowledge sharing.

Thirty-six European countries participated in the 2025 ODM assessment. These countries are grouped into Member States of the European Union (the EU-27), European Free Trade Association (EFTA) countries and candidate countries for EU membership.

- The **Member States** are Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland and Sweden.
- The **EFTA countries** are Iceland, Norway and Switzerland.
- The **candidate countries** are Bosnia and Herzegovina, Albania, Montenegro, North Macedonia, Serbia and Ukraine.

The structure of this report

This report provides an analysis of the 2025 survey data. The findings of this analysis are presented in several chapters.

- **Chapter 2** summarises how the assessment measures ODM.
- **Chapter 3** describes the overall results of the assessment.
- **Chapters 4–7** discuss the findings of the assessment for each of the four dimensions of ODM and outline recommendations:
  - **policy** (Chapter 4),
  - **portal** (Chapter 5),
  - **quality** (Chapter 6),
  - **impact** (Chapter 7).
- **Chapter 8** concludes with the key messages of the 2025 assessment.
- **Appendix:** contains a detailed description of the methodology, data collection process and scoring system.

In addition to this report and the method appendix, the associated raw and processed data are published online (find all editions of the ODM report and accompanying data on the 'previous editions' webpage). Furthermore, factsheets are published giving an overview of the situation in each participating country.

Chapter 2: Methodology

The open data maturity (ODM) assessment evaluates progress and effectiveness of open data initiatives across four thematic dimensions that are intended to capture the end-to-end value chain of open data: **policy**, **portal**, **quality** and **impact**. The annual assessment was conducted for the first time in 2015, and this is the 11th edition. The four dimensions in the current methodology have been used since 2018. Over time, the questions asked to assess the four dimensions have been revised to adapt to policy changes and the progress of European countries in their ODM. Each of the four dimensions is subdivided into indicators, which are subthemes of the dimensions. In 2025, the methodology was unchanged from the previous year. The latest methodology update was implemented in 2024. The definitions of the four open data dimensions are summarised in Table 1.

Table 1: Dimensions of the ODM methodology and their indicators

Dimension	Description
Policy	Investigates the open data policies and strategies in place in the countries, the national governance models for managing open data, and the measures applied to implement those policies and strategies. To evaluate these elements, the dimension comprises three indicators: (a) **policy framework**, (b) **governance of open data** and (c) **open data implementation**.
Portal	Investigates the functionality of national open data portals, the extent to which users' needs and behaviour are examined to improve the portal, the availability of open data across different domains and the approach to ensuring the portal's sustainability. To evaluate these elements, the dimension comprises four indicators: (a) **portal features**, (b) **portal usage**, (c) **data provision** and (d) **portal sustainability**.
Quality	Assesses the measures adopted by portal managers to ensure the systematic harvesting of metadata, the monitoring of metadata quality and compliance with the DCAT-AP metadata standard, and the quality of the deployment of the published data on the national portal. This dimension provides an overarching incentive for portal managers and policymakers to ensure that open data on the national portal has suitable formats and correct licences, is machine-readable, is high quality and is amenable to a linked data approach. To evaluate these elements, the dimension comprises four indicators: (a) **metadata currency and completeness**, (b) **monitoring and measures**, (c) **DCAT-AP compliance** and (d) **deployment quality and linked data**.
Impact	Analyses the willingness, preparedness and ability of countries to measure both the reuse of open data and the impact created through this reuse. To evaluate these elements, the dimension comprises three indicators: **strategic awareness**, (b) **measuring reuse** and (c) **created impact**, within the areas of (i) government, (ii) society, (iii) environment and (iv) economy.

Data for the assessment is collected through a voluntary questionnaire sent to the open data representatives of the participating countries, working in collaboration with the European Commission and the Expert Group on Public Sector Information. Countries are asked questions about their processes, activities, initiatives and other demonstratable outputs that characterise a mature open data ecosystem. Questions with available data from the previous year were pre-filled in the country questionnaire, allowing respondents to either confirm the validity of last year's answers or provide updated information. This feature was introduced in 2024 to support year-on-year consistency in responses.

Once the completed questionnaires are submitted, the research team validates the responses based on the explanations and supporting evidence provided by the survey respondents for each question. The reviewers assess whether the explanations accompanying the answers are complete, relate to the question and sufficiently justify the response selected. A consultation round is held with the survey respondents to gain clarifications on the survey data and to give them the opportunity to validate the results.

Countries are scored on a list of questions relating to each indicator. The scores for the individual questions sum together to provide a total score for the indicator. In turn, the indicator scores are added together to give scores for the dimensions. The overall maturity score is calculated as the weighted percentage of all the dimensions, meaning that each dimension contributes 25 % towards the overall maturity score. In addition, qualitative insights are gathered through a limited number of non-scored questions. The scoring scheme is presented in Figure 4.

In addition, two automated pilot indicators were introduced in 2024 to complement the qualitative survey data with quantitative metrics. One pilot indicator uses automated web-based tests to evaluate the performance of portals on metrics related to mobile friendliness, speed and performance, security, and web content accessibility. The other pilot indicator used calculated metrics from the metadata quality assessment to evaluate the quality of metadata harvested by data.europa.eu. The methodology underlying the metadata quality assessment is undergoing recalibration. However, it is a promising approach that could help in assessing metadata quality in an automated way. The tool would need to undergo further scrutiny to ensure more objective reporting in the future. These pilot indicators did not contribute to countries' maturity scores in the current ODM assessment. Please refer to the method appendix for full details of the methodology.

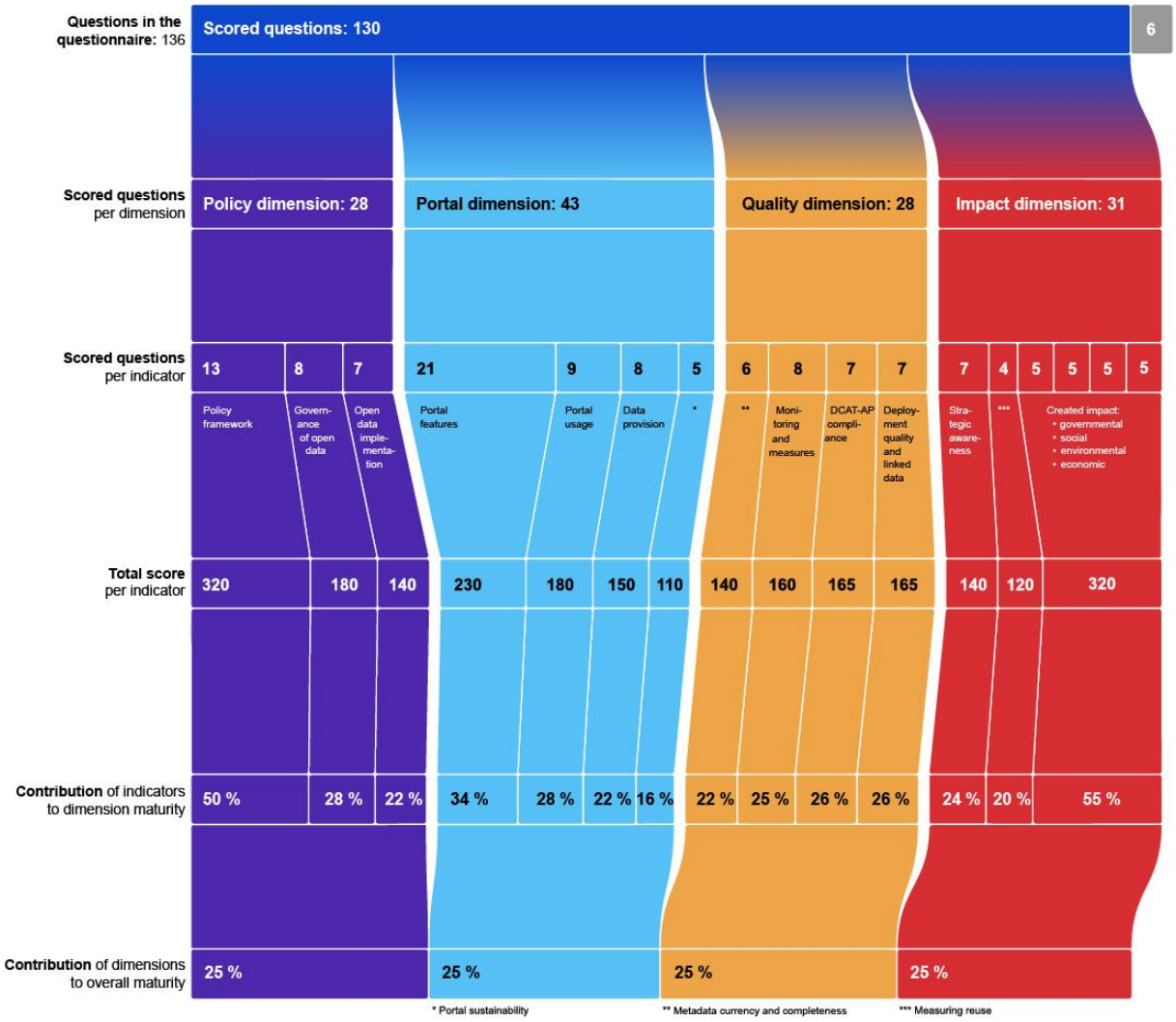

Figure 4: Overview of the scoring scheme of the ODM assessment.

Chapter 3: Overall open data maturity

In 2025, countries across Europe continued on average, to improve their open data maturity (ODM). The average score for all participating countries rose by 1 percentage point (pp) from 2024, reaching 81 % in 2025. This builds on the 1 pp increase in average score for all participating countries between 2023 and 2024.

France (100 %), **Lithuania** (98 %) and **Poland** (97.8 %) are the three most mature countries overall in 2025. **France** and **Poland** remain in the top three from last year, whereas **Lithuania** experienced an increase of 4 pp year-on-year. This is followed closely by **Ukraine** (97.1 %) in fourth position. **Cyprus** and **Portugal**, each with a maturity score of 95 %, have entered the top 10. Their scores rose by 1 pp and 5 pp, respectively, compared to last year (Figure 5).

This year's top 10 countries show an even tighter distribution in scores, with scores now within a 5 pp range, 1 pp narrower than last year. Furthermore, middle-performing countries, specifically those between the 25th and 75th percentiles of the overall distribution (that is, scores from 74% to 95%), saw the range of scores narrow from a 20 pp range to a 18 pp range, indicating broad-based improvement across this group.

Notably, 25 participating countries improved their maturity level over the past year, eight countries remained the same, and one experienced a drop in their overall maturity score. This year's assessment also includes **Montenegro** and **North Macedonia**, providing new insights for these countries; however, year-on-year comparisons are not available for them.

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3.1. EU Member State trends

The EU-27 average reaches 86 % in 2025, an increase of 3 pp since 2024, which can be attributed to increases in most Member States' scores.

The **policy** (93 %) and **portal** (85 %) dimensions remain the most mature dimensions, while the **quality** dimension (83 %) moves up to third, making the **impact** dimension (82 %) the least mature dimension on average. The **quality** and the **portal** dimensions recorded the largest year-on-year increases in maturity on average (+ 4 pp), followed by the **policy** and **impact** dimensions (+ 2 pp each).

Among the EU-27 Member States that improved, **Malta** is the biggest climber, increasing in its overall maturity score by 19 pp compared with 2024. This rise in overall score is driven by increases across all four dimensions, with the most notable being on the **quality** (+ 31 pp) and **portal** (+ 30 pp) dimensions.

The second-largest climber is **Germany** (+ 11 pp), which saw substantial increases in the **impact** (+ 21 pp) and **portal** (+ 18 pp) dimensions. The third-largest climber is **Romania**, which increased its overall maturity score by 6 pp. While there were no changes in the **portal** and **impact** dimensions, Romania's overall advancement was driven by improvements in the **policy** (+ 16 pp) and **quality** (+ 9 pp) dimensions.

Sweden (– 2 pp) experienced a decrease on its overall maturity score. This was driven by declines in both the **policy** (– 3 pp) and **impact** dimensions (– 7 pp), both stemming from the discontinuation of activities that were previously supported.

3.2. European Free Trade Association country trends

Among the participating EFTA countries, **Norway** is the highest scoring on overall maturity at 92 %, bolstered by a 3 pp increase in overall maturity since the 2024 assessment. This increase in Norway's overall score is driven by its improvement of 10 pp in the **impact** dimension and 1 pp in the **portal** dimension. In second place among the participating EFTA countries is **Switzerland** (82 %), reflecting a 2 pp increase in overall maturity driven by 3 point increases in both the **impact** and **quality** dimensions. **Iceland** comes third, remaining unchanged since 2024 with an overall maturity score of 52 %.

3.3. Candidate country trends

Among the participating candidate countries, **Ukraine** (97 %) remains the most mature, followed by **Serbia** (87 %). In terms of improvements in overall maturity scores from the previous year, **Albania** stands out with a 23 pp improvement. Its substantial overall increase was driven primarily by a 61 pp gain in the **quality** dimension and an 18 point rise in the **portal** dimension. Overall, these improvements are likely related to the redevelopment of the opendata.gov.al portal, which now incorporates best practices from leading European open data platforms. The updated portal offers enhanced data quality metrics, such as a higher proportion of datasets with licensing information and improved compliance with DCAT-AP standards. **Serbia** was the only other candidate country to improve its overall maturity since the previous assessment, with a 3 pp growth since 2024.

Read the analyses by dimension in the following chapters for further details on the factors underlying these trends.

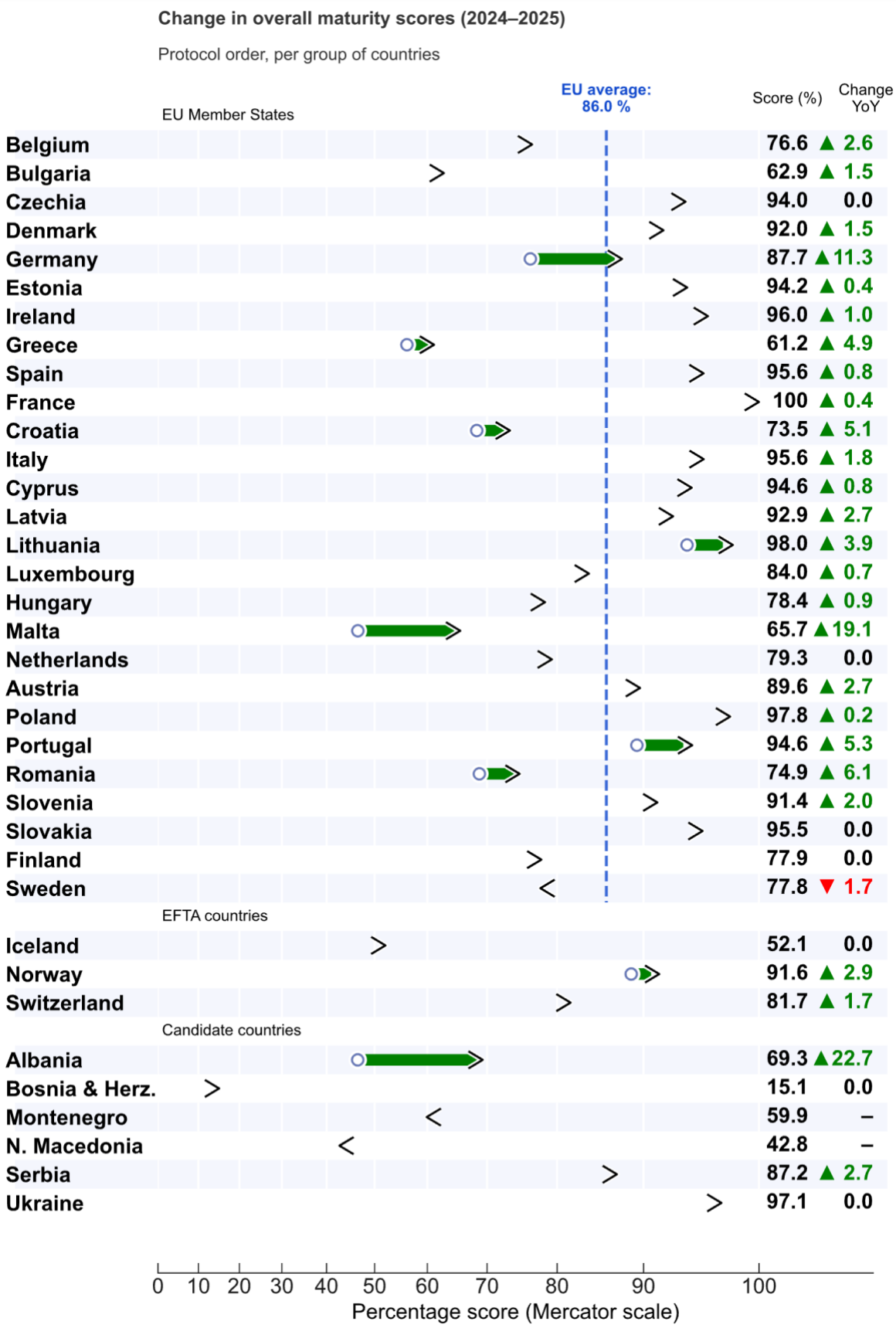

Figure 5: In 2025, the EU average improved by 3 pp to 86 %, and the average for all participating countries increased by a further 1 pp to 81 %.
NB: EFTA, European Free Trade Association; YoY, year-on-year; pp: percentage point.

3.4. Clustering

To help identify affinities between countries, the participating countries are grouped into four clusters based on their overall maturity scores. Countries in the same cluster can discuss strategies to overcome shared challenges. Countries in less mature clusters might be able to learn from those in more mature clusters. Clustering also enables more focused recommendations to be formulated for each group of countries, which are presented in the subsequent chapters about each of the four dimensions of the methodology.

To group the countries into clusters, the overall maturity scores were plotted from lowest to highest. Groups were demarcated where observable gaps in the ordered scores were identified. From the lowest to the highest performing, the four clusters are **beginners**, **followers**, **fast-trackers** and **trendsetters**. The clusters are visualised in Figure 6.

The distribution of composite maturity scores is skewed towards higher scores. The clusters are as follows.

- **Trendsetters (94–100 %).** Czechia (CZ), Estonia (EE), Portugal (PT), Cyprus (CY), Slovakia (SK), Spain (ES), Italy (IT), Ireland (IE), Ukraine (UA), Poland (PL), Lithuania (LT) and France (FR).
- **Fast-trackers (87–93 %).** Luxembourg (LU), Serbia (RS), Germany (DE), Austria (AT), Slovenia (SI), Norway (NO), Denmark (DK) and Latvia (LV).
- **Followers (73–84 %).** Croatia (HR), Romania (RO), Belgium (BE), Sweden (SE), Finland (FI), Hungary (HU), the Netherlands (NL) and Switzerland (CH).
- **Beginners (15–69 %).** Bosnia and Herzegovina (BA), North Macedonia (MK), Iceland (IS), Montenegro (ME), Greece (EL), Bulgaria (BG), Malta (MT) and Albania (AL).

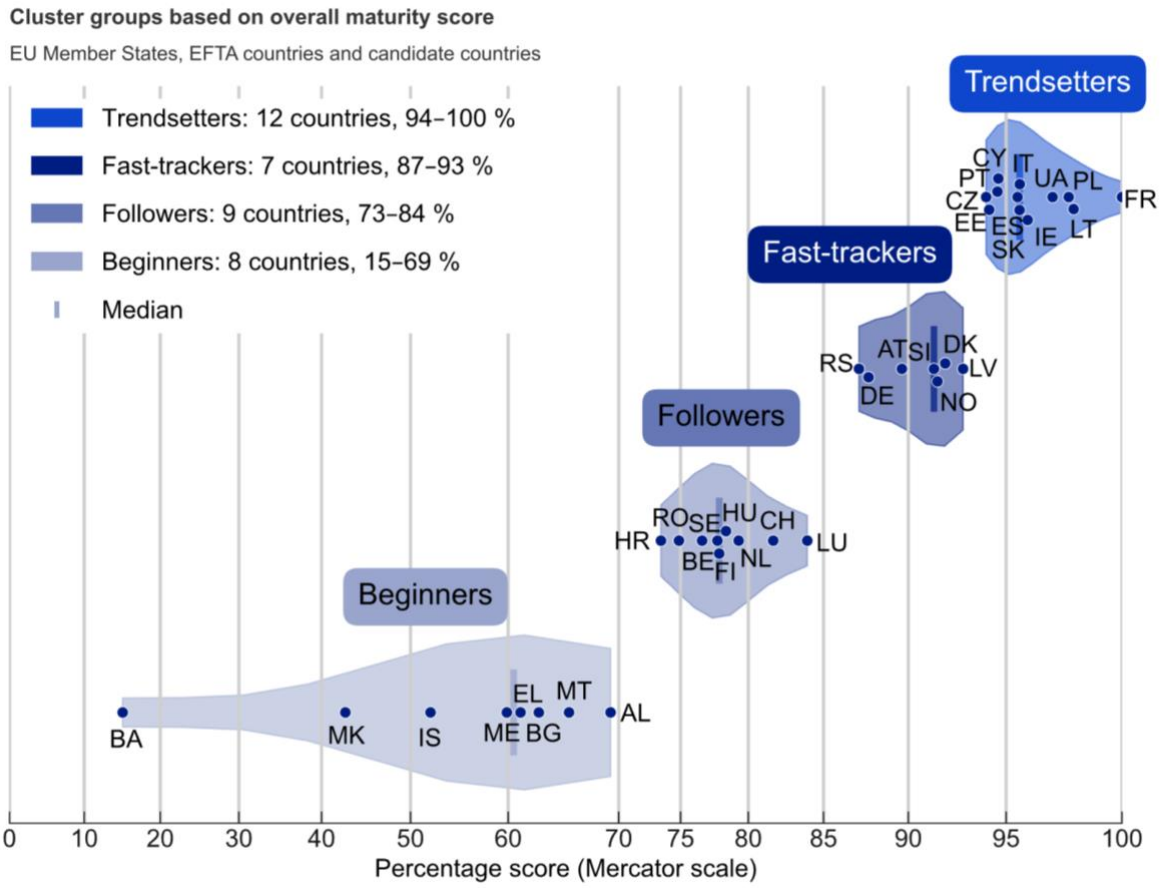

Figure 6: Four-group clustering of participating countries based on overall maturity score.

Chapter 4: Open data policy

Over the years, the EU has developed a comprehensive policy framework to accelerate the opening of data held by the public sector. The Open Data Directive (Directive (EU) 2019/1024) is the most recent framework for open data policy in the EU. The directive, which had to be transposed into EU Member States' national laws by July 2021, aims to enhance the openness and utility of public sector data through requirements such as:

- stimulating the publishing of dynamic data and the uptake of application programming interfaces (APIs);
- limiting the exceptions under which public bodies may charge more than the marginal costs of dissemination for the reuse of their data;
- strengthening the transparency requirements for public–private agreements involving public sector information.

The directive applies to a wide range of information (e.g. written texts, databases and audio files) held by Member States' public sector bodies, public authorities, publicly owned companies and publicly funded research initiatives.

The directive also introduced the concept of high-value datasets (HVDs), which are public datasets associated with important socioeconomic benefits for society, the environment and the economy. The related implementing regulation (Commission Implementing Regulation (EU) 2023/138) sets out rules to ensure that certain datasets included in the six thematic categories defined in the regulation are made available free of charge, in machine-readable formats, through APIs and, where relevant, as a bulk download.

The **policy** dimension of the open data maturity (ODM) assessment is designed to encourage the practical implementation of policy measures. Governance structures, operating models, processes and activities are needed to realise the ambitions outlined in policies and strategies.

In brief, the policy dimension investigates countries' policies and strategies regarding open data, the national governance models for managing open data and the measures deployed to implement the policies and strategies. Table 2 summarises the key elements of the policy dimension.

Table 2: Indicators of the policy dimension

Indicator	Key elements
Policy framework	This indicator assesses whether national and subnational open data policies and strategies exist and how comprehensive they are. It looks at the presence of action plans, measures to incentivise publication and reuse, and support for real-time, geospatial and citizen-generated data. It also considers discoverability on the European Data Portal, data inventories and progress on HVDs.
Governance of open data	This indicator explores how governance structures enable coordination and stakeholder inclusion. It considers the existence of governance models, official roles and public documentation of responsibilities. It also looks at support for local and regional initiatives and regular exchanges between providers, reusers and open data officers.
Open data implementation	This indicator evaluates how policies and strategies are put into practice. It looks at data publication plans, monitoring and revision processes, and measures to address implementation challenges. It also considers support for data holders, training for civil servants and activities promoting open data literacy across society.

This chapter will first present overall performance on the policy dimension and then provide a summary of the results and best practices for each indicator.

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4.1. Overall performance on the policy dimension

In 2025, the policy dimension continues to lead in maturity across the EU-27, maintaining its position as the most advanced dimension in the ODM assessment. The average maturity score in the EU-27 is 93 % (Figure 7). This marks a 2 percentage point (pp) increase compared with 2024 and the second consecutive year that the policy dimension has exceeded the 90 % threshold. The growth is largely attributed to a 3 pp rise in the 'policy framework' indicator, which now also stands at 93 %, the largest increase among the three policy indicators. The 'open data implementation' indicator also saw a 2 pp improvement and is the most mature indicator of the policy dimension, reaching 94 % maturity.

At the country level, **Estonia**, **France**, **Italy**, **Lithuania**, **Poland** and **Ukraine** fulfil all the requirements (100 %) set out in this dimension (Figure 8). **Czechia**, **Ireland**, **Spain** and **Cyprus** follow closely, with scores of 99 %, each excelling in different indicators: **Cyprus** achieved full marks in the 'governance of open data' indicator, while **Czechia** and **Ireland** did so in the 'open data implementation' indicator. Overall, 18 countries scored at least the same as the EU-27 average of 93 %.

Highlight from Italy – ensuring effective policy implementation

A relevant development observed in this year's report is how countries are strengthening processes to implement and monitor open data policies. **Italy** offers a strong example through its structured approach combining planning, monitoring and capacity building.

Public administrations are required to adopt data publication plans, as recommended by the national open data guidelines. These plans prioritise HVDs, dynamic data and user-requested information. Concrete examples include the monthly publication calendar of the National Institute for Insurance against Accidents at Work and regional strategies such as Apulia's Decision Support System project, which integrates administrative data (e.g., protocol and document management) and domain-specific datasets (e.g., tourism, culture, etc.) into a single regional data lake.

Implementation is supported by robust monitoring. The Agency for Digital Italy (AgID) tracks progress through its digital transformation dashboard, which reports dataset growth on dati.gov.it and progress against targets in its three-year plan for information technology in public administration. The basket of key datasets further enables annual monitoring at the national and regional levels.

Policies are regularly updated: the latest three-year plan (2024–2026) was adopted in December 2024. Guidelines also define licensing requirements and recommend International Organization for Standardization standards for data quality.

To assist data holders and civil servants, AgID provides guidance, conducts webinars and launched the AgID Academy to strengthen digital skills. Training initiatives such as the national strategy for digital skills, the Syllabus platform and programmes by the National School of Administration ensure effective policy implementation across all levels (i.e. national and regional, as previously mentioned).

Read more about this trend in Section 4.4.

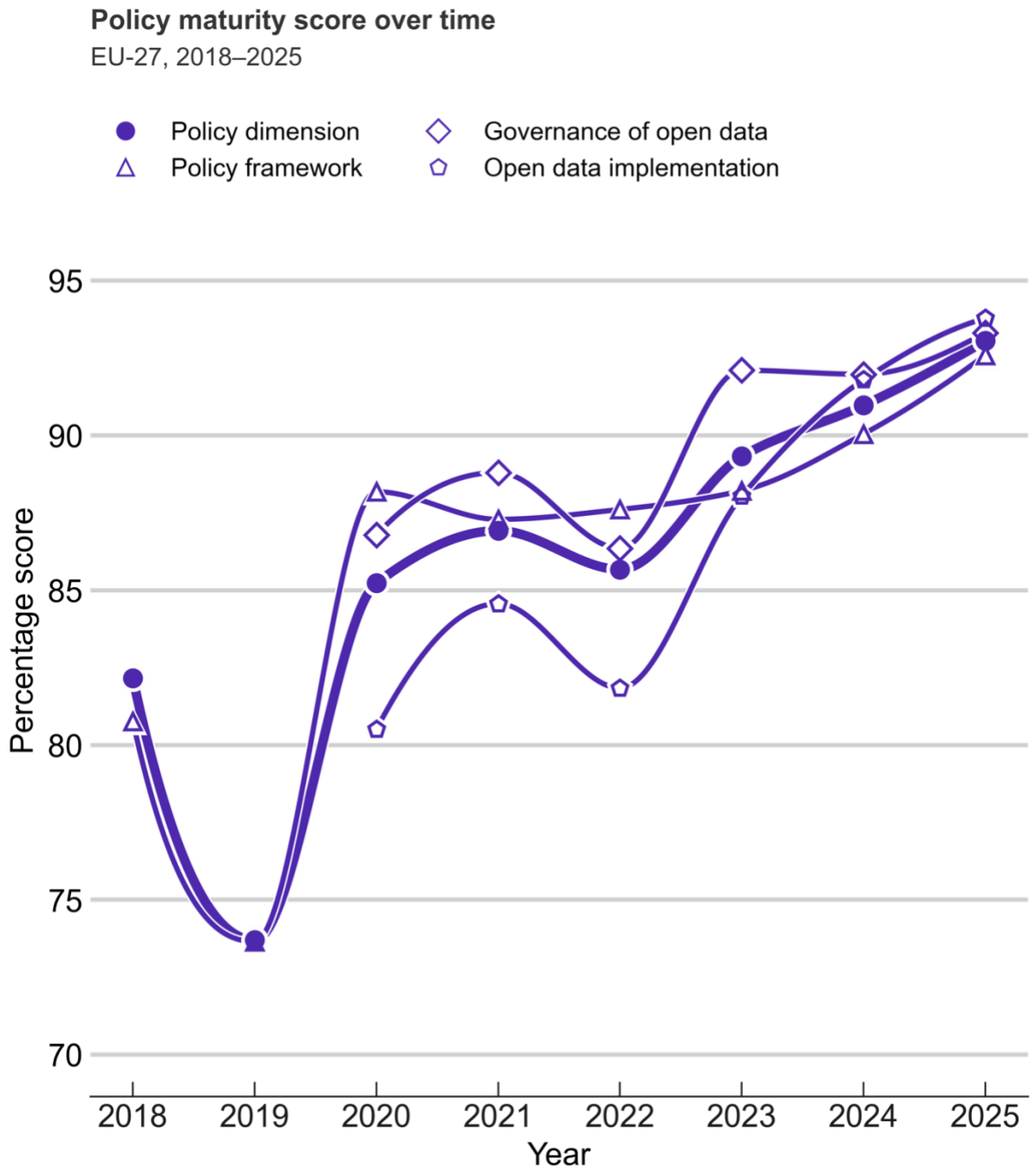

Figure 7: The EU-27 average score on the policy dimension has risen steadily over the past four years (2022–2025).

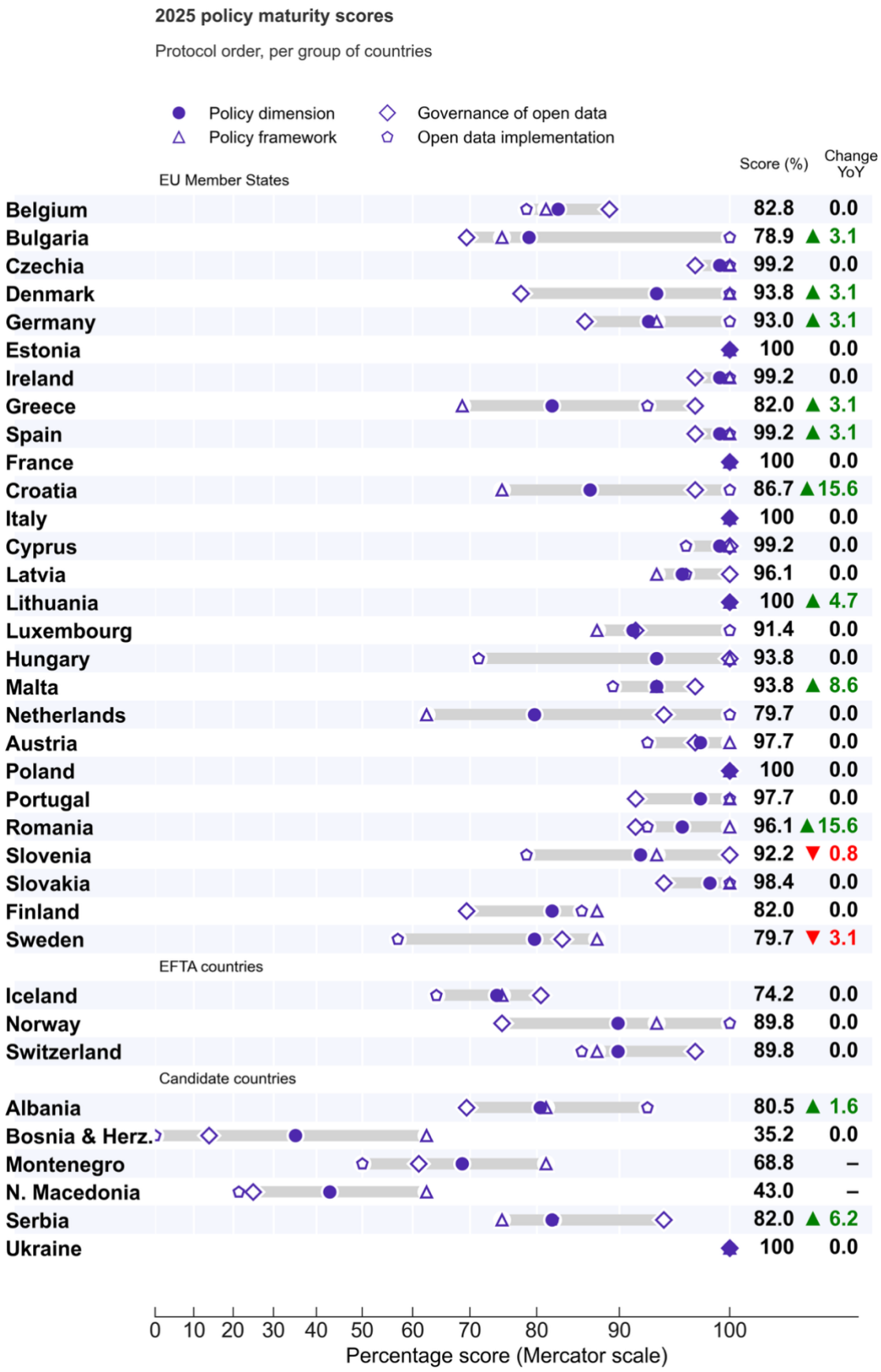

Figure 8: Eleven participating countries improved their scores on the policy dimension in 2025.
NB: EFTA, European Free Trade Association; YoY, year-on-year.

Croatia (+ 16 pp), **Romania** (+ 16 pp) and **Malta** (+ 9 pp) recorded the strongest year-on-year improvements in the policy dimension. **Croatia's** progress was driven by major gains in the 'governance of open data' indicator (+ 33 pp), following the official establishment of a national coordination body to oversee and support open data policy implementation. **Romania** achieved the greatest increase in the 'policy framework' indicator (+ 31 pp), largely due to the adoption of the national open data strategy for 2024–2028 and its action plan, which introduced clear objectives and governance structures. **Malta's** improvement in the policy dimension was supported by a 29 pp rise in the 'open data implementation' indicator. This growth reflects Malta's updated legislation, and the introduction of publication plans at the level of individual public bodies, ensuring consistent application of open data policies and strengthening governance processes.

Highlight from Croatia – inclusive governance for open data

Croatia has introduced a robust governance model to drive its open data agenda. In 2025, the Member State established the Coordination for the Implementation of the Open Data Policy, a multistakeholder body that monitors compliance, improves data accessibility and supports public authorities. Members include representatives from the Ministry of Justice, Public Administration and Digital Transformation, the Office of the Information Commissioner and the State Geodetic Administration. The coordination body can form thematic working groups involving local authorities, academia, businesses and civil society, ensuring broad participation.

This model builds on the Act on the Right to Access to Information, which mandates public bodies to appoint information officers responsible for publishing data and handling reuse requests. At the national level, the open data portal serves as a central hub. It is complemented by local portals such as the City of Zagreb's platform, which publishes machine-readable datasets for reuse.

Knowledge exchange is embedded in Croatia's approach: coordination meetings, regular updates and shared resources on standards foster collaboration between the national team and portal maintainers. Partnerships with academia, such as the University of Zagreb's Faculty of Electrical Engineering and Computing, further strengthen the ecosystem by engaging students in dataset quality analysis.

This inclusive governance structure ensures alignment between national and local initiatives and promotes stakeholder engagement across sectors.

Read more about this trend in Section 4.3.

Highlight from Poland – building a reuse culture through its open data handbook
European countries are increasingly using practical resources to promote open data reuse within the public sector. **Poland** stands out with the second edition of its open data handbook, published by the Ministry of Digital Affairs. This updated handbook responds to the needs of government offices by providing clear steps to build an organisational structure for data openness and reuse. It introduces new data categories, explains how regulations shape open data policies and showcases ready-made solutions such as Poland's Data Portal and the Polish portal for culture and science. The handbook serves as a checklist for offices, guiding them through their responsibilities for opening data and fostering a reuse culture. It complements Poland's open data programme for 2021–2027 and the associated legal standard, which define the 'pillars of openness' and include tools such as an openness checklist for compliance. **Read more about this trend in Section 4.2.**

Overall, only two countries – **Slovenia** and **Sweden** – experienced minor decreases in their performance on the policy dimension year-on-year. In both cases, the decrease (Slovenia, – 1 pp; Sweden, – 3 pp) was driven by a reported reduction in the number of events held annually to promote open data and data literacy to a broader public.

4.2. Policy framework

The 'policy framework' indicator evaluates open data policies, strategies and action plans at the national, regional and local levels. Specifically, this indicator investigates whether concrete mechanisms are in place to support the publication of, access to, discoverability of and reuse of several types of data, including real-time, geospatial and citizen-generated data.

Open data policies and strategies

National open data policies are formalised rules and guidelines that govern open data within a country. In the case of Member States, national policies should include legislative measures to comply with the Open Data Directive, ensuring the reuse of public sector information and promoting interoperability and fair access to open data across the EU. On the other hand, open data strategies are principles and goals that countries want to achieve in the field of open data based on their open data policies. Furthermore, regional and local policies and strategies can complement national policies, focusing on the implementation and execution of open data practices tailored to regional governance structures. Table 3 presents an overview of how countries responded to the questions on this topic.

Table 3: Countries' responses to questions on open data policies and strategies

	Is there a national open data policy?	*Is there a national open data strategy?*	*Is there an open data policy/strategy at the regional or local level?*
EU-27	All 27 Member States (100 %) report having an open data policy.	27 Member States (100 %), with **Romania** as the latest addition, report having a stand-alone national open data strategy or relevant open-data-related objectives, actions and timelines incorporated within broader national policies.	20 Member States (74 %) report having an open data policy/strategy at the regional or local level. Four Member States (15 %) responded 'not applicable' due to the specific governance structures in place (e.g. having a small country size).
EFTA	**Iceland**, **Norway** and **Switzerland** all report having an open data policy.	**Norway** and **Switzerland** report having a national open data strategy, while **Iceland** reports that relevant open-data-related objectives are incorporated within its broader national policies and that work has begun on a general data strategy that will include open data.	**Iceland**, **Norway** and **Switzerland** report having an open data policy/strategy at the regional or local level. **Norway** emphasises that its national strategy is developed in collaboration with relevant local and regional authorities.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** all report having an open data policy.	**Albania**, **Montenegro**, **North Macedonia** and **Ukraine** report having a national open data strategy, while **Serbia** reports that relevant open-data-related objectives are incorporated within its broader national policies.	**Serbia** and **Ukraine** report having an open data policy/strategy at the regional or local level.

(Questions P1, P2 and P3)

In 2025, all countries participating in the ODM assessment report have a dedicated national open data policy. These policies often include a commitment to making public sector data openly available by default, treating official documents as public resources unless legitimate exceptions apply. Their legal basis is typically provided through instruments such as freedom of information / access to information laws, dedicated acts on public sector information or open data, or a combination of these.

There is also growing momentum to turn high-level regulatory principles into concrete, actionable strategies. Often, governments embed open data commitments within broader national frameworks on data governance, digitalisation, artificial intelligence (AI) and e-government. For example, in 2025 **Montenegro** has treated open data as a strategic priority across multiple strategies such as the digital

transformation strategy , public administration reform strategy and the smart specialisation strategy. Similarly, **Portugal** embeds open data in its national digital strategy, while **Hungary** locates open data objectives within its national AI strategy and national digitalisation strategy for 2022–2030.

In 2025, some local and regional open data strategies claim to align with national objectives while tailoring actions to local priorities. For instance, in **France**, many municipalities and regions have their own strategies, coordinated through Open Data France, a national association that supports harmonisation and provides tools for local governments. In **Lithuania**, some municipalities implement the mandatory national policy but customise their portals and datasets for local needs (e.g. Open Vilnius and Open Kaunas).

More countries also report that their local and regional open data strategies include partnerships with non-governmental stakeholders (e.g. academia, the private sector and civil society). For example, in **France**, the region of Rennes's Rudi project (involving an urban data interface) creates a shared governance model for data exchange among diverse stakeholders. Similarly, in **Spain**, the Madrid City Council's open government plan outlines engagement with professional reusers and researchers to maximise the value of open data.

Open data action plans

An open data action plan typically outlines the specific measures and steps that need to be implemented to achieve the goals set by the national open data strategy or policy. Table 4 presents an overview of how countries responded to the question on this topic.

Table 4: Countries' responses to the question on open data action plans

	Does the national strategy/policy include an action plan with measures to be implemented in the open data field?
EU-27	26 Member States (96 %), **all except Croatia**, report that their national strategy/policy includes an action plan with measures to be implemented in the open data field. **Romania** is the latest Member State to report that the national strategy/policy includes an action plan with measures to be implemented.
EFTA	**Iceland**, **Norway** and **Switzerland** report that their national strategy/policy includes an action plan with measures to be implemented in the open data field.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** all report that their national strategy/policy includes an action plan with measures to be implemented in the open data field.

(Question P4)

The most common focus of countries' action plans continues to be on publishing more accessible, reusable and regularly updated open data. Rather than simply increasing the number of open datasets, the emphasis of several countries has shifted towards publishing more dynamic, API-enabled data and embedding interoperability standards. For example, **Italy's** updated three-year plan for information technology in public administration sets clear objectives to increase the number of open dynamic datasets published through APIs and expand spatial datasets under the Infrastructure for Spatial Information in the European Community (Inspire) Directive, ensuring real-time accessibility and compliance with EU directives. **Lithuania** is implementing an API development and management model, integrating at least 376 information systems and registers, and populating a centralised metadata repository to enable automated interoperable data flows.

Additionally, accessibility is reinforced through portal modernisation and feature upgrades, such as in the case of **Spain's** overhaul of its national open data platform and **Slovenia's** redesign of its national open data portal, moving beyond simple cataloguing to user-centric functionality. Reusability is also treated more as a strategic priority, supported by financial instruments and agreements. **Lithuania's** EUR 66 million programme, **Spain's** four-year commitment to foster public sector information reuse and the data economy, and **Slovenia's** dedicated reuse fund to incentivise projects are recent examples of this trend.

Monitoring the usage and impact of open data also remains central, with more formal governance structures being cited in 2025. Namely, **Germany** reports submitting biennial progress reports to parliament and operates a dedicated monitoring process. Similarly, **Czechia** tracks implementation status through its 'digital Czech Republic' plan and **Romania** embeds milestones and indicators overseen by an interministerial committee.

Incentives for data publication and access

Stimulating the publishing of dynamic data and the uptake of APIs is one of the goals of the Open Data Directive. Dynamic data is data that changes asynchronously over time and is periodically updated as new information becomes available. Real-time data is data that changes and needs updating at very frequent intervals, in most cases several times a minute. On the other hand, citizen-generated data is the data that people or their organisations produce to directly monitor, demand or drive change on issues that affect them. Table 5 presents an overview of how countries responded to the questions on this topic.

Table 5: Countries' responses to questions on incentives for data publication and access

	Does the national strategy/policy outline measures to incentivise the publication of and access to real-time or dynamic data?	*Does the national strategy/policy outline measures to incentivise the publication of and access to citizen-generated data?*
EU-27	23 Member States (85 %) now report that their national strategy or policy includes measures to encourage the publication and access to real-time or dynamic data. **Croatia** has joined this group since the previous reporting period.	16 Member States (59 %) report that their national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data. **Lithuania** and **Romania** are the newest countries in this group.

	Does the national strategy/policy outline measures to incentivise the publication of and access to real-time or dynamic data?	*Does the national strategy/policy outline measures to incentivise the publication of and access to citizen-generated data?*
EFTA	**Iceland**, **Norway** and **Switzerland** report that their national strategy/policy outlines measures to incentivise the publication of and access to real-time or dynamic data.	None of the three participating EFTA countries reports that its national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that their national strategy/policy outlines measures to incentivise the publication of and access to real-time or dynamic data.	**Ukraine** reports that its national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data.

(Questions P5 and P6)

Legal frameworks continue to play an important role in enabling the publication of and access to dynamic and/or real-time data and citizen-generated data. In terms of citizen-generated data, **France**, **Hungary**, **Portugal** and **Romania** report including citizen-generated data in national portals and strategies in 2025, signalling a shift beyond the 2024 emphasis on consent mechanisms towards structured onboarding and labelling of non-state data. **Romania's** new open data strategy embeds citizen contributions in public workflows, with a portal update enabling publication on the national platform. In **Hungary**, the national digital strategy prioritises expanding datasets with citizen-generated data and has led to the creation of the digital citizenship programme, which publishes regionally aggregated, non-identifiable datasets (e.g. education and welfare statistics) for public and commercial reuse.

Highlight from Ukraine – institutionalising citizen-generated data through business-to-business/business-to-government frameworks

Ukraine's draft open data strategy for 2025–2027 sets out measures to strengthen the publication and accessibility of citizen-generated data, positioning it as a key component of the national data ecosystem. A central element of the strategy is the creation of a regulatory framework for business-to-business and business-to-government data exchange, enabling structured, machine-readable data sharing between businesses and government. This approach aims to foster innovation, support the development of the digital economy and encourage the implementation of modern technological solutions.

Additionally, the strategy explores economic incentives, including the possibility of a special tax regime for enterprises developing products based on open data, to attract investment and stimulate start-up growth in the data economy.

Supporting the reuse of open data

The primary aims of the Open Data Directive are to encourage the opening of public sector information and to stimulate its reuse. Therefore, measures in the countries' open data strategies or policies that support the reuse of open data by the public and private sectors can support the downstream activities of making data openly available. Table 6 presents an overview of how countries responded to the questions on this topic.

Table 6: Countries' responses to questions on supporting the reuse of open data

	Does the national strategy/policy foster the discoverability of data from your country on data.europa.eu?	*Does the national strategy/policy outline measures to support the reuse of open data by the public sector?*	*Does the national strategy/policy outline measures to support the reuse of open data by the private sector?*
EU-27	23 Member States (85 %) report that their policies and strategies involve the publishing of data on data.europa.eu. However, the other Member States tend to make their data discoverable on data.europa.eu in practice, even though this is not explicitly stated in a policy or strategy.	26 Member States (96 %), **all except Belgium**, report that their open data policies and strategies outline measures to support the reuse of open data by the public sector.	24 Member States (89 %), **all except Bulgaria**, **Luxembourg** and the **Netherlands**, report that their open data policies and strategies outline measures to support the reuse of open data by the private sector. **Croatia** is the newest country to report this.
EFTA	**Norway** reports that its policies and strategies involve the publishing of data on data.europa.eu to foster discoverability.	**Iceland**, **Norway** and **Switzerland** all report that their open data policies and strategies outline measures to support the reuse of open data by the public sector.	**Iceland**, **Norway** and **Switzerland** all report that their open data policies and strategies outline measures to support the reuse of open data by the private sector.
Candidate	**Ukraine** reports that its policies and strategies involve the publishing of its national data on data.europa.eu to foster discoverability.	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **Serbia** and **Ukraine** report that their open data policies and strategies outline measures to support the reuse of open data by the public sector.	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **Serbia** and **Ukraine** report that their open data policies and strategies outline measures to support the reuse of open data by the private sector.

(Questions P7, P8 and P9)

A prominent trend in country responses about enhancing the reuse of open data by both the private and the public sectors is ensuring that open data is accessible and of high quality. In this regard, countries continue to invest in making open data technically reusable across administrations, by not only committing to common principles (e.g. findable, accessible, interoperable and reusable (FAIR)) but also building the infrastructure that enforces them. In 2025, **Czechia**, **France**, **Malta**, **Slovenia** and **Ukraine** report that they are deploying data exchange platforms, APIs and registers that enable seamless integration and reuse of open data in public sector operations. For example, **Malta** has implemented a data exchange platform to enable interoperability and data sharing between public administration entities, as part of its national strategy. In addition, **Slovenia** is upgrading its national open data portal with API capabilities, allowing public bodies to publish and reuse data more effectively. This is complemented by broader support for open data infrastructure across its ministries.

In terms of the private sector, **Austria**, **Italy**, **Norway**, **Portugal** and **Romania** report creating structured environments where multiple stakeholders such as the government, private companies and academia can securely share and experiment with open data. These environments often provide governance, technical infrastructure and processes that enable the co-development of solutions, testing of prototypes and exchange of knowledge in a controlled setting. For example, **Romania's** open data strategy introduces data spaces and 'living labs' as a way of creating safe environments for public, academic and private actors to collaborate on innovative projects. **Austria's** digital action plan outlines a data hub and data partnerships, offering structured collaboration channels for small and medium-sized enterprises and other stakeholders to leverage public sector data. Additionally, **Norway's** digitalisation strategy promotes collaboration between public authorities and industry associations to ensure efficient digital value chain integration and data sharing.

Countries continue to use training and capacity-building initiatives to improve data quality and reuse. In 2025, however, this trend shows a shift towards more specialised and role-specific training. Instead of broad awareness programmes, some countries are embedding technical skills into operational roles. For example, **Slovakia** offers practical SPARQL training for data stewards to query metadata, and **Slovenia** runs dedicated sessions for open data editors at the Administrative Academy of the Ministry of Public Administration. **Spain** integrates real open datasets into official courses for public employees, linking training directly to reuse scenarios. **Ukraine** goes further by targeting leadership with organisational and educational activities to embed open data into decision-making.

Highlight from Spain – the open government data initiative
To foster the reuse of open data within the public sector, **Spain** continuously showcases real-world applications and data-driven business models on its national open data platform. This virtual space now features 483 applications and 99 business models, with over 40 new solutions added in the past year. These examples serve as inspiration and guidance for public entities exploring the potential of open data. Explore the growing catalogue of applications developed using open data and examples of companies and organisations that have created innovative solutions using open data.

Data inventories

A data inventory is a comprehensive catalogue of the datasets held by an organisation and can be used to plan the opening of appropriate datasets. Data inventories can also include data collected by public bodies that cannot be published as open data (e.g. in relation to the European Data Governance Regulation (Regulation (EU) 2022/868)). Table 7 presents an overview of how countries responded to the questions on this topic.

Table 7: Countries' responses to questions on data inventories

	Do policies and strategies mandate that public bodies carry out and maintain a data inventory, whether at the national or local level?	*Do these data inventories include the data collected by public bodies that cannot be published as open data?*
EU-27	26 Member States (96 %), **all except** the **Netherlands**, report that their open data policy or strategy mandates that public bodies maintain a data inventory.	25 Member States (93 %), **all except** **Bulgaria** and the **Netherlands**, report that their data inventories include the data collected by public bodies that cannot be published as open data.
EFTA	**Norway** and **Switzerland** report that their open data policy or strategy mandates that public bodies maintain a data inventory.	**Norway** and **Switzerland** report that their data inventories include the data collected by public bodies that cannot be published as open data.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **North Macedonia** and **Ukraine** report that their open data policy or strategy mandates that public bodies maintain a data inventory.	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **North Macedonia** and **Ukraine** report that their data inventories include the data collected by public bodies that cannot be published as open data.

(Questions P10-a and P10-b)

National legislation, such as open data laws and freedom of information acts, continues to be the most common means to mandate the implementation and maintenance of data inventories. Several countries mandate that public bodies publish their data inventories on a centralised national portal, which serves as a single point of access for open data. Countries such as **France**, **Hungary**, **Norway** and **Spain** report that they have institutionalised roles such as designated data stewards to oversee the creation, maintenance and publication of data inventories. **Spain**, for example, has institutionalised local responsibility for data inventories through a set of standard rules issued by the Spanish Federation of Municipalities and Provinces. These rules require each local authority to maintain a structured inventory of datasets and information sources, with this task being assigned to designated staff who essentially act as local data stewards.

Data inventories across Europe are evolving from including only open data to being comprehensive registries that include all public sector datasets, even those that cannot be published openly. This shift is strongly driven by the Data Governance Act, which requires mechanisms for safe reuse of protected data. In line with the obligations set out in this act, countries have appointed or empowered competent authorities to oversee access to protected data under the act's framework. Many countries are

implementing methods of ensuring that protected datasets are discoverable. For example, **Lithuania** is building a metadata catalogue and a state data lake for protected datasets.

Highlight from Poland – hybrid model of data inventory publication
Poland's national open data portal serves as a central platform for publishing and accessing public sector datasets. At the national level, central public sector organisations are legally obliged to publish datasets on the portal, following structured publication schedules and API development plans outlined in the open data programme for 2021–2027. These schedules are monitored by open data officers and updated every six months. At the local level, participation is voluntary. Cities and municipalities are encouraged to develop annual schedules for opening selected datasets and may publish them either on the national open data portal or on their own open data portals. Gdańsk, Kraków, Poznań, Warsaw and Wrocław, for example, have their own open data portals. The national portal is designed to harvest datasets from these local portals to create a more unified data landscape. To support this integration, the Ministry of Digital Affairs has organised training programmes for local public sector employees, combining theoretical instruction on data openness with practical exercises on preparing and publishing datasets on the national open data portal. Several hundred employees were trained between 2023 and 2025, with additional workshops planned due to high demand.

Highlight from France – coordinated ministerial support for data inventories
France has developed a robust support system for data inventory creation through its interministerial digital transformation programme, Tech.Gouv, and the open data unit Etalab. Each ministry designates open data officers who collaborate with Etalab to identify, structure and publish their data inventories. Workshops are held to define key considerations, and ministries such as those of the economy, culture, agriculture and the armed forces have actively engaged in inventory development. These efforts are aligned with national strategies and prime ministerial directives, which require ministries to draft data roadmaps and create inventories for the national portal. The approach emphasises discoverability, reuse and strategic planning across government.

Prioritising high-value datasets

HVDs are datasets that hold significant potential for economic, social or environmental benefits when made openly available. Commission Implementing Regulation (EU) 2023/138, adopted in December 2022 and published in January 2023, lays down a list of specific HVDs and the arrangements for their publication and reuse. The ODM questionnaire included two questions to enquire about countries' progress with implementing this regulation. Table 8 presents an overview of how countries responded.

Table 8: Countries' responses to questions on implementing the EU regulation on HVDs

	Is your country applying Commission Implementing Regulation (EU) 2023/138 on HVDs?	*Have the public bodies in your country denoted relevant datasets as HVDs in their metadata?*
EU-27	All Member States (100 %) report that they are working towards applying the EU regulation on HVDs.	25 Member States (93 %) report that their public bodies with HVDs have denoted this in the datasets' metadata. The most recent additions are **Denmark**, **Spain**, **Malta** and **Romania**.

(Questions P11 and P12)

NB: Non-EU countries were not surveyed on this question as Commission Implementing Regulation (EU) 2023/138 on HVDs applies only to Member States.

On average, progress remains most advanced for **statistics** (82 %) and **geospatial** (79 %) datasets (Figure 9). While **company and company ownership** datasets (72 %) remain as one of the less mature categories, **meteorological** datasets are now reported as the least advanced category, a regression from previous years (70 %). The maturity of **mobility** datasets (75 %) has reportedly improved the most year-on-year.

Turning to the underlying requirements, the most significant progress is seen in terms of identifying and inventorying HVDs (82 %), followed by setting up new roles and workflows (79 %) and addressing legal barriers (76 %). Requirements related to technical progress score the lowest: metadata availability and quality (74 %), standardised means to structure, describe and access data (74 %), machine-readable formats via APIs (73 %) and bulk downloading (73 %). While this overall profile is the same as last year, with technical progress being less mature than legal and organisational progress, maturity scores for technical progress have improved more year-on-year than those for legal and organisational progress.

Denmark, **Estonia**, **France**, **Latvia**, **Lithuania** and **Finland** are highly mature in terms of their implementation of the HVD regulation, achieving a maturity score of 95 % or higher on average. On the other hand, **Bulgaria**, **Croatia** and **Hungary** report the least advancement in implementing the HVD regulation, with each Member State having a maturity score of less than 50 %.

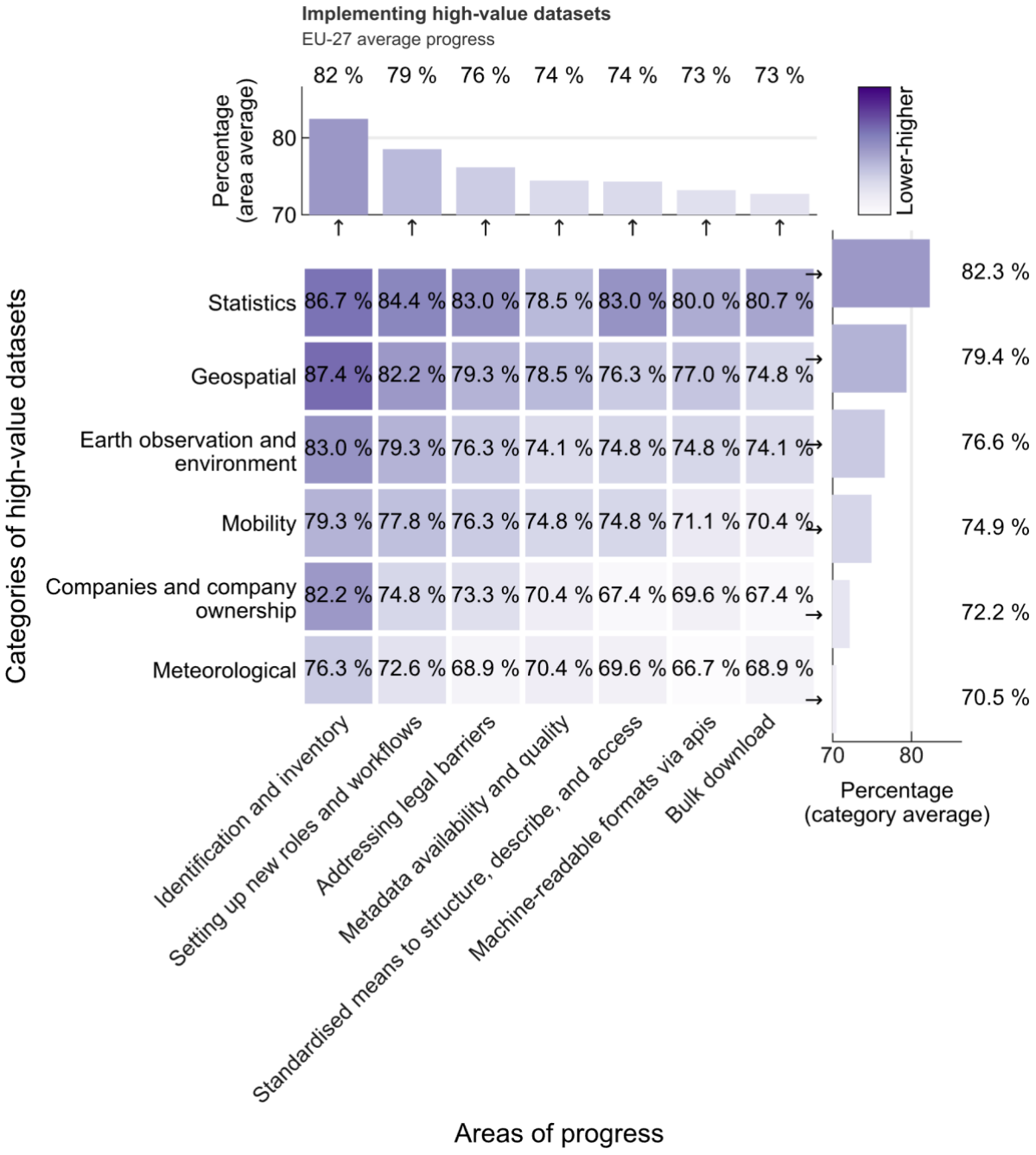

Figure 9: Average maturity scores of the six categories of HVD and seven areas of activity.

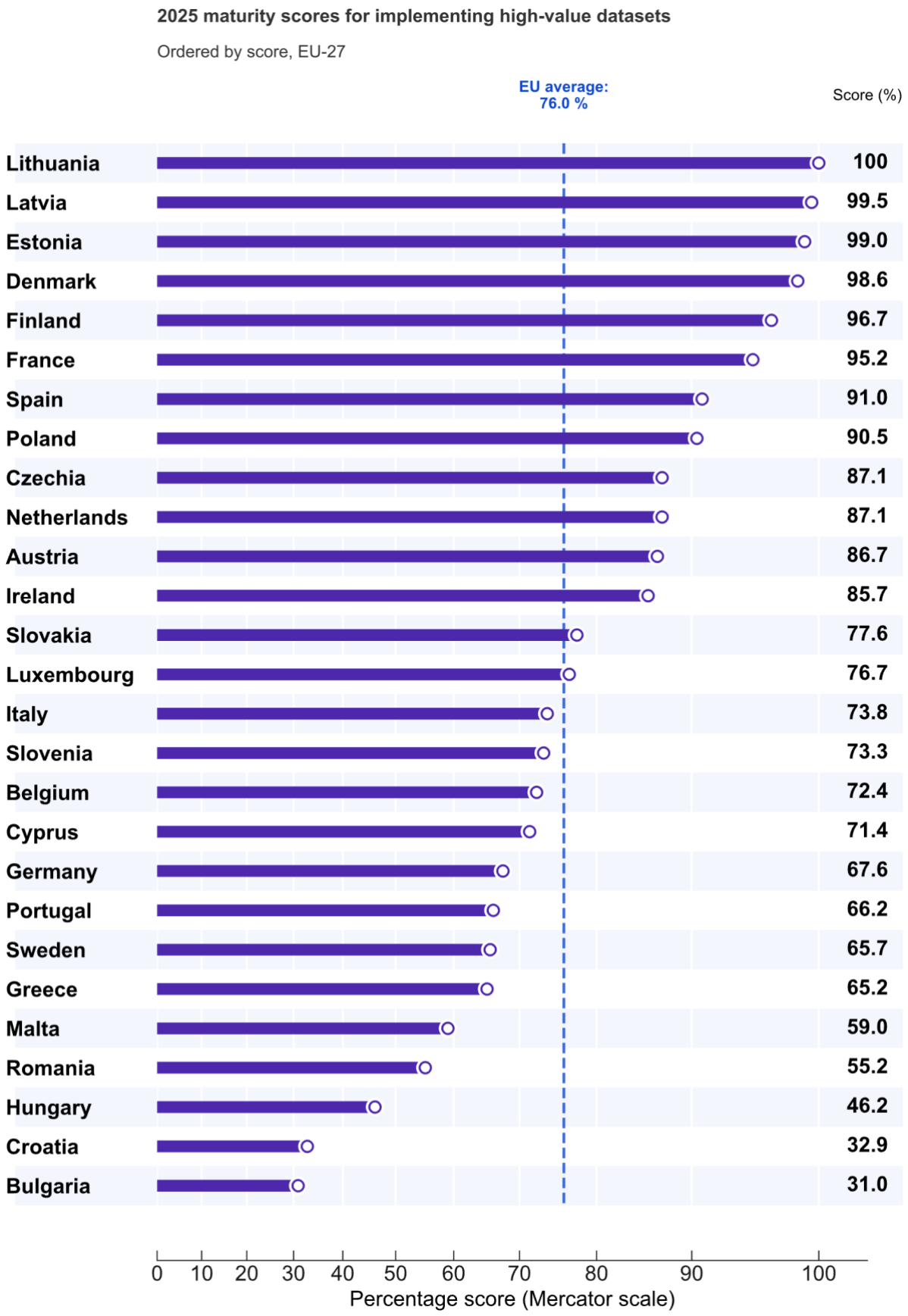

Figure 10: Fourteen Member States are at least equal to the EU average maturity for implementing the requirements on HVDs.

4.3. Governance of open data

This indicator evaluates the governance structures and operating models in place at the national, regional and local levels to support open data initiatives. This includes both the appointment of civil servants with a remit on open data and the exchange of knowledge and experiences within the public sector and between the public sector and open data reusers.

Governance structures

A governance structure for open data is the formal system or framework that ensures various open data stakeholders' participation, collaboration and inclusion. This framework helps to ensure that open data initiatives are inclusive, transparent and aligned with the needs of all stakeholders. Governance structures can be top-down, with coordinating power exercised by an established body, or enacted using a hybrid model, allowing for regional autonomy while maintaining central oversight. Either way, countries will often have mechanisms for engaging stakeholders within their governance systems. Table 9 presents an overview of how countries responded to the questions on this topic.

Table 9: Countries' responses to questions on governance structures

	Is there a governance structure in place that enables the participation and/or inclusion of various open data stakeholders?	*How would you classify the model used for governing open data in your country?*
EU-27	26 Member States (96 %), **all except Bulgaria**, report that their governance structures enable the participation and inclusion of various stakeholders in open data policies. **Croatia** is the most recent Member State to report this.	20 Member States (74 %) report using a hybrid model, combining elements of a top-down and a bottom-up approach. Seven Member States (26 %) report that they implement a top-down approach.
EFTA	**Iceland**, **Norway** and **Switzerland** all report that their governance structures enable the participation and inclusion of various stakeholders in open data policies.	**Iceland**, **Norway** and **Switzerland** all report using a hybrid model, combining elements of a top-down and a bottom-up approach.
Candidate	**Albania**, **Serbia** and **Ukraine** report that their governance structures enable the participation and inclusion of various stakeholders in open data policies.	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** all report using a hybrid model, combining elements of a top-down and a bottom-up approach.

(Questions P13 and P14)

Most countries report having a hybrid governance model, and this is typically characterised by a central authority orchestrating the ecosystem, while there are also participatory methods to include non-central actors (e.g. subnational governments, civil society, academia, the private sector). Examples from 2025 include **Lithuania**, which mandates that institutions respond to user requests logged on its national portal and empowers open data coordinators to liaise with local stakeholders.

Multistakeholder forums, such as boards, working groups and round tables, continue to be popular participatory governance mechanisms. These bodies bring together various open data stakeholders to identify needs and set agendas. In some cases, specialised subgroups are established to work on priority topics. For example, **Portugal's** Data Governance Technical Working Group has a subgroup on interoperability and secure sharing. Other countries have created working groups with different focuses. For example, **Switzerland** uses the Open Government Data forum and two operational working groups – one for legal matters and one for matters related to the national portal – under a specialist federal body to guide implementation of its open data master plan.

Local and regional governance structures

To ensure the effective publication and reuse of open data across a country, governance must be established not only at the national level but also at the subnational level. This entails national governments creating an enabling environment for subnational entities to thrive in their open data endeavours. Although structural and legal limitations might exist, national governments often provide technical, monetary and advisory support to local administrations for their open data initiatives. Table 10 presents an overview of how countries responded to the questions on this topic.

Table 10: Countries' responses to questions on local and regional governance structures

	Does the governance structure ensure that the local and regional open data initiatives are facilitated and supported at the national level?	*To what degree do local/regional public bodies conduct open data initiatives?*
EU-27	24 Member States (89 %), **all except Germany** and **Finland**, report that their governance structures ensure that local and regional open data initiatives are facilitated and supported nationally. **Belgium** reports that this is 'not applicable', since the federal level has no authority over open data projects at the regional level.	Ten Member States (37 %) report that all local/regional public bodies in their countries conduct open data initiatives, and eight Member States (30 %) report that the majority of local/regional public bodies do so.
EFTA	**Iceland** and **Norway** report that their governance structures ensure that local and regional open data initiatives are facilitated and supported nationally.	**Norway** and **Switzerland** report that the majority of the local/regional public bodies in their countries conduct open data initiatives. **Iceland** reports that only a few public bodies in its country conduct open data initiatives.
Candidate	**Serbia** and **Ukraine** report that their governance structures ensure that local and regional open data initiatives are facilitated and supported nationally.	**Ukraine** reports that all local/regional public bodies conduct open data initiatives. **Montenegro** and **Serbia** report that approximately half of the local/regional public bodies conduct open data initiatives, and **Albania**, **Bosnia and Herzegovina** and

		North Macedonia report that only a few public bodies do so.

(Questions P15 and P16)

In 2025, national entities provide support for local and regional open data initiatives in the following key ways.

- **Technical support.** Countries such as **Ireland**, **Spain**, **Lithuania**, **Poland** and **Sweden** note that having shared national platforms, catalogues and technical advisory channels helps lower the barrier for local bodies to publish, describe and federate datasets without having to build or maintain their own full stack. For example, **Lithuania** complements its open data portal with state-level integration work (forming a state data lake) that inventories municipal information systems and opens datasets. Municipal staff are also equipped with the Municipal DataLab application for analysis and decision support.
- **Capacity-building support.** In order to build local officials' skills in publishing, managing and using open data, countries such as **Czechia**, **Lithuania**, **Poland** and **Sweden** note that providing capacity-building support such as training, workshops, clinics, guidance materials and peer learning helps local bodies contribute to open data initiatives. For example, the **Swedish** Association of Local Authorities and Regions runs the Professions Network for Open and Shared Data (Oppnadataprofessionsnätverk), a collaborative forum for municipal and regional staff. The network offers seminars, practical workshops, and tailored guidance on applying Sweden's open data legislation and EU directives in local contexts. **Czechia's** national open data team regularly participates in regional conferences and educational events to upskill municipalities.
- **Advisory support.** Countries such as **Bulgaria**, **Ireland**, **Lithuania**, **Poland**, **Serbia** and **Spain** provide practical, hands-on assistance through staffed projects, structured programmes and reusable materials. For example, **Lithuania** and **Poland** use reusable materials, such as Poland's updated open data handbook and Lithuania's newsletters, and organise centrally managed training projects that embed national expertise into local practice.

Highlight from Ireland – Irish technical services framework

To help public bodies comply with the Open Data Directive, **Ireland** established the technical services framework, a streamlined mechanism for accessing specialised open data services. This framework acts as a pool of pre-qualified service providers for open data and data management, ensuring that public sector bodies can quickly obtain expert support without lengthy procurement processes.

Through a simple request form, authorities can access services such as:

- **data management** – audits, cataloguing, preparation, publication, maintenance and maturity assessment;
- **hosted open data platform solutions** – ready-to-use infrastructure for publishing and managing datasets;
- **consultancy services** – expert guidance on open data and data management practices.

By centralising technical expertise and simplifying service delivery, the framework accelerates compliance and reduces the burden on local and regional bodies, making open data implementation more efficient and sustainable.

Outlining open data roles and responsibilities

A network of open data officers serves as a system for communication and collaboration between the national open data team and various open data officers across different regions or sectors within the country. Having civil servants across public sector bodies with an official remit on open data can facilitate the process of making data open. Table 11 presents an overview of how countries responded to the questions on this topic.

Table 11: Countries' responses to questions on open data roles and responsibilities

	Is a document describing the responsibilities and governance structure of the national (and/or regional/local) open data team publicly available?	*Does the governance model include the appointment of official roles in civil services that are dedicated to open data (e.g. open data officers)?*
EU-27	25 Member States (93 %), with **Croatia** being the newest addition, report that they have a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team. **Denmark** and **Sweden** do not report having such a document available.	25 Member States (93 %), **all except Belgium** and **Denmark**, report that their governance model includes the appointment of dedicated open data roles in the civil service.
EFTA	**Switzerland** reports that it has a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team.	**Iceland** and **Switzerland** report that their governance models include the appointment of dedicated open data roles in the civil service.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Montenegro**, **Serbia** and **Ukraine** report that they have a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team. **North Macedonia** does not report having such a document available.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that their governance models include the appointment of dedicated open data roles in the civil service.

(Questions P17 and P19)

Official roles in the civil service that are dedicated to open data are reported in various forms. **Slovakia** and **Switzerland** report these roles to be data stewards, who manage metadata and ensure data quality, whereas **Austria**, **Bulgaria**, **Germany** and **Serbia** report that open data coordinators are responsible for publication workflows and compliance. In addition, **France** and **Malta** report appointing chief data officers who oversee broader data governance.

The trend of national laws requiring specific roles focused on open data continues in 2025. For example, Article 8(3) of **Bulgaria's** ordinance on the standard conditions for the reuse of public sector information mandates all public sector bodies to appoint designated staff members responsible for managing their organisation's profile on the open data portal. These individuals perform all core

functions associated with the role of an open data officer, including coordination with the national portal and the responsible national body.

Highlight from France – comprehensive governance model
France demonstrates a comprehensive governance model that embeds open data roles across all levels of government. At the national level, the General Data Administrator (Administrateur général des données) coordinates public data policy, sets strategic priorities and oversees a network of chief data officers in each ministry. At the ministerial level, chief data officers manage data policy (e.g. open data, quality and reuse) supported by Etalab (France's national open data and digital innovation unit), which runs the network of chief data officers. Some ministries also appoint open data officers to focus on dataset publication and act as intermediaries between Etalab and internal teams, while data stewards handle technical and organisational aspects of data publication. At the local level, each regional representative (*préfet*) designates a referent for data, algorithms and source codes to promote openness. Additionally, the Interministerial Digital Directorate, the French central government body responsible for steering France's digital transformation across all ministries and public administrations, coordinates a network of API managers to enable dynamic data access.

Network of open data teams, officers and reusers

Communication and collaboration between various stakeholders are important for fostering a functional open data ecosystem. A regular exchange of knowledge and experiences between stakeholders can play a significant role in enhancing the quality and accessibility of open data and in creating feedback loops for improving open data policies. Table 12 presents an overview of how countries responded to the questions on this topic.

Table 12: Countries' responses to questions on communication and collaboration between stakeholders

	Is there a regular exchange of knowledge or experiences between the national open data team and the team maintaining the national portal?	*Is there a regular exchange of knowledge or experiences between the national open data team and the wider network of open data officers in your country?*	*Is there a regular exchange of knowledge or experiences between public sector bodies (i.e. the providers) and open data reusers (e.g. academia, citizens and businesses)?*
EU-27	26 Member States (96 %), **all except Finland**, report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	All Member States (100 %) report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	All Member States (100 %) report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.
EFTA	**Iceland**, **Norway** and **Switzerland** all report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	**Iceland**, **Norway** and **Switzerland** all report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	**Iceland**, **Norway** and **Switzerland** all report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.

	Is there a regular exchange of knowledge or experiences between the national open data team and the team maintaining the national portal?	*Is there a regular exchange of knowledge or experiences between the national open data team and the wider network of open data officers in your country?*	*Is there a regular exchange of knowledge or experiences between public sector bodies (i.e. the providers) and open data reusers (e.g. academia, citizens and businesses)?*
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	**Montenegro**, **Serbia** and **Ukraine** report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.

(Questions P18, P20 and P21)

Countries continue to report formalised groups that help structure collaboration as a method of ensuring regular exchange of knowledge between the national open data team and the team maintaining the national portal, in addition to their national network of open data officers. For example, **Germany's** reports leveraging its product board for multi-party coordination and **Lithuania's** Open Data Club connect core actors around portal and data-opening issues. **Austria** combines strategic and technical coordination through Cooperation Open Government Data Austria and specialist groups (Fachgruppe), while **Switzerland's** open government data working group Corstat provides a similar structure.

Forums also remain a widely used method for knowledge exchange in countries' open data ecosystems. Unlike one-way communication channels, these are interactive spaces that enable dialogue among various open data stakeholders. In 2025, forums are reported to take the form of online platforms (e.g. **Norway's** Datalandsbyen), conferences and hackathons (e.g. **Iceland's** conference on the Icelandic data ecosystem and **Slovenia's** hackathons), and specialised thematic sessions within broader events (e.g. **Portugal's** Interoperable Europe Roadshow).

Highlight from Ukraine – Data+ communication platform

The Data+ communication platform in **Ukraine** exemplifies an effective approach to ensuring regular exchange of knowledge and experiences between the national open data team and a broader network of open data officers. Established with the support of the Ministry of Digital Transformation, the platform fosters collaboration among government bodies, civil society, experts and data providers.

Throughout 2024, seven community meetings were organised to address critical topics such as legislative developments, technical challenges and strategic planning. Discussions included the first reading of the draft law on personal data protection, the implications of the draft law on access to electronic registers and issues related to verifying and publishing data from the Unified State Register of Addresses. The platform facilitated consultations on the open data development strategy for 2025–2027 and introduced a methodology for ranking cities by the maturity of their open data publication practices. It also delivered capacity-building initiatives, including an online training session on using artificial intelligence in the field of open data.

By combining regular stakeholder meetings, public consultations and targeted training, Data+ creates a structured environment for continuous dialogue and knowledge sharing.

4.4. Open data implementation

This indicator looks at the practical steps taken to turn open data strategies into action. It focuses on the support provided to data holders, including those managing real-time, geospatial and citizen-generated data, to help them publish datasets effectively. It also considers efforts to build open data literacy, both within public administrations and among the wider public, through targeted initiatives and capacity-building activities.

Data publication plans

Data publication plans – that is, specific workflows or internal data management and monitoring processes for the publication of datasets – play a key role in ensuring that datasets are published consistently and effectively. Table 13 presents an overview of how countries responded to the question on this topic.

Table 13: Countries' responses to the question on data publication plans

	Do data publication plans exist at the public body level?
EU-27	All Member States (100 %) report that they have publication plans for open data at the public body level.
EFTA	**Norway** and **Switzerland** report that they have publication plans for open data at the public body level.
Candidate	**Albania** and **Ukraine** report that they have publication plans for open data at the public body level.

(Question P22)

Most countries have established legal requirements that oblige public sector bodies to create and follow data publication plans. The publication of open data is often supported by centralised national platforms or geoportals, which offer structured workflows and procedures to guide the publication of such data in a consistent and coordinated manner.

Highlight from Lithuania – systematic approach to data publication

Lithuania has established a multilayered approach to data publication planning, which is coordinated primarily by the State Data Agency. The approach includes the following.

- **The national data-opening plan.** The State Data Agency prepares and publishes a national data-opening plan on the national open data portal, developed in coordination with relevant institutions and based on user-submitted requests for new or updated datasets. This process is formalised in the official data-opening procedure.
- **Institution-level planning.** Individual institutions also maintain their own data-opening plans. For example, the State Enterprise Centre of Registers, which manages key national registers, has published new open datasets as part of its strategy. Additionally, dataset-specific planning can be made visible on the national portal.
- **Inventorisation.** An overview of inventorisation and publication planning at the state information systems level is available via an interactive dashboard published by the State Data Agency.

Implementation plans and monitoring processes

Governments can benefit from setting up reliable processes that support the implementation of open data strategies and ensure policies stay relevant through regular updates. Table 14 presents an overview of how countries responded to the questions on this topic.

Table 14: Countries' responses to questions on implementation plans and monitoring processes

	Are there processes to ensure that the open data policies/strategy previously mentioned are implemented?	*Do you update your policy/strategy as appropriate to ensure its success, such as based on data collected for monitoring?*
EU-27	All Member States (100 %) report that they have processes to ensure that their open data policies and strategies are implemented.	22 Member States (81 %) report that they have procedures in place to update their policy/strategy as appropriate. **Germany**, **Greece** and **Malta** are the Member States that newly report this.
EFTA	**Iceland**, **Norway** and **Switzerland** all report that they have processes to ensure that their open data policies and strategies are implemented.	**Norway** and **Switzerland** report that they have procedures in place to update their policy/strategy as appropriate.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they have processes to ensure that their open data policies and strategies are implemented.	**Albania**, **Serbia** and **Ukraine** report that they have procedures in place to update their policy/strategy as appropriate.

(Questions P23 and P24)

The most frequently mentioned mechanism for ensuring the implementation of open data strategies and policies is regular progress monitoring. In many cases, the monitoring of progress is mandated by the open data strategies and policies themselves. On top of that, many countries also update their policy/strategy based on the latest insights and inputs provided by various ministries and institutions.

Highlight from Spain – annual evaluation and targeted action

Spain follows an annual evaluation cycle to guide the development and refinement of its open data initiatives. Each year, the results of a national questionnaire assessing the state of open data inform the priorities and actions for the following 12 months. In 2025, this process led to a series of targeted improvements and new resources aimed at enhancing both data publication and user engagement.

Key developments included the creation of implementation materials for Spain's new Data Catalogue Vocabulary Application Profile (DCAT-AP) (DCAT-AP-ES), helping data publishers transition to the updated specification. The Member State also introduced advanced data science exercises, such as building conversational AI agents using public data, to support more sophisticated reuse scenarios.

Spain continued to improve the usability of its national portal, with updates to navigation and user experience, and optimised guidelines for publishing high-quality data in formats such as comma-separated values (CSV) or via APIs. In response to user demand, new guides and reports were published, covering topics including portal deployment, exploratory data analysis and municipal innovation.

To further engage the public, Spain launched a podcast channel and developed infographics on open data applications in urban management, sustainability and geospatial techniques. These efforts reflect a commitment to continuous improvement, driven by feedback from users and data publishers, and supported by regular monitoring and strategic planning.

Monitoring charging practices relating to open data

Legal frameworks often define procedures to help public bodies understand when charging above marginal costs is allowed, and which entities are authorised to do so. Table 15 presents an overview of how countries responded to the question on this topic.

Table 15: Countries' responses to the question on monitoring charging practices

	Are there any processes in place to assess if public sector bodies are charging for data above the marginal costs?
EU-27	25 Member States (93 %), **all except Hungary** and **Sweden**, report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide.
EFTA	**Iceland** and **Norway** report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide.

(Question P25)

Most countries have established clear legal frameworks that define when public bodies can charge for data and how fees are calculated. These rules often include transparency measures, such as publishing lists of authorised bodies, approved pricing methodologies and review schedules. For example, some countries require public bodies to notify a central authority before applying charges, while others, such as **Belgium** and **Austria**, involve advisory bodies or ministries in approving exceptions. In several cases, methodologies for determining prices are publicly available and subject to periodic review.

Enforcement mechanisms vary. Some countries, such as **Czechia** and **Spain**, allow users to report unjustified fees through catalogue feedback tools. In other countries, requesters must typically report overcharging to committees or oversight bodies. **Norway** is currently reviewing funding models as part of broader legislative reforms to align with EU directives. Meanwhile, countries such as **Serbia** prohibit charges altogether, reinforcing the principle of free access to open data.

Data literacy training and open data publication activities

Initiatives that support open data publication aim to help data holders make their information available in accessible formats. These efforts often include training programmes and capacity-building activities, which are frequently aligned with broader goals to strengthen civil servants' data skills. By integrating open data support into professional development, governments can ensure that public sector staff are prepared to manage data effectively and meet transparency objectives. Table 16 presents an overview of how countries responded to the questions on this topic.

Table 16: Countries' responses to questions on open data publication and data literacy training

	Are there any activities in place to assist data holders with publishing their data as open data?	*Is there a professional development or training p lan for civil servants working with data in your country?*
EU-27	All 27 Member States (100 %), with **Bulgaria** being the latest addition, have activities in place to assist data providers with their open data publication.	All 27 Member States (100 %), with **Malta** being the latest addition, report that they offer professional training to civil servants working with open data.
EFTA	**Iceland**, **Norway** and **Switzerland** all report having activities in place to assist data providers with their open data publication.	**Iceland**, **Norway** and **Switzerland** all report offering professional training to civil servants working with open data.
Candidate	**Albania**, **Serbia** and **Ukraine** report having activities in place to assist data providers with their open data publication.	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they offer professional training to civil servants working with open data.

(Questions P27 and P28)

Structured support and training for civil servants working with open data is a key component of national strategies in many countries. Professional development programmes are often delivered through national platforms or institutions, offering flexible learning formats such as video series (e.g. **Lithuania's** 27-part training), webinars (e.g. **Poland's** workshops for local authorities) and dedicated academies (e.g. **Ukraine's** Open Data Academy and Chief Digital Transformation Officer (CDTO) Campus). These initiatives aim to build long-term capacity and foster digital transformation across public administrations.

To assist data holders in publishing open data, countries provide a wide range of support services. These include technical consultations (e.g. **Spain's** multilevel support structure), legal and organisational guidance (e.g. the Open Data **France** team) and shared infrastructure such as metadata catalogues (e.g. in **Sweden**). Some countries also offer financial support (e.g. **Estonia**) or partner with external organisations to deliver specialised services (e.g. **Ireland's** collaboration with Derilinx). Designated open data officers or liaison roles are common, ensuring accountability and continuity in data publication efforts.

Highlight from Cyprus – onboarding support for public sector bodies

In **Cyprus**, a structured onboarding process helps public sector bodies prepare and publish their datasets on the national open data portal. The process begins with the assignment of an open data liaison officer, who then participates in a dedicated training programme. With guidance from the Open Data Team, public sector bodies develop a tailored data publication plan using provided templates and support materials. The data is then published gradually in accordance with this plan, while the Open Data Team monitors progress and prompts updates when needed. Public sector bodies are required to revise and resubmit their plans at least every two years, with most opting for annual updates. This cyclical approach ensures consistent engagement and alignment with open data goals.

4.5. Recommendations

Countries can use the following general advice to improve on the policy dimension of the ODM methodology. The recommendations are tailored to four levels of maturity, ranging from trendsetters to beginners.

Trendsetters

- Enhance and consolidate the open data ecosystems you support by developing thematic communities of providers and reusers. Continue to prioritise HVDs within the six specified categories, in line with the requirements.
- Steer the network of open data officers to enable data-driven policymaking at their level of government, delegating and decentralising monitoring activities. Maintain the connection between the national strategy and objectives and the needs of agencies and local authorities, with these needs expected to gain prominence over time.
- Work with training institutions to provide advanced open data courses and training, and tailor training curricula to cover more advanced topics. Such training can include guidance on compliance with open data laws and education on data literacy. Make such courses formally recognised and provide certification upon successful completion.

Fast-trackers

- Assist in the development of open data initiatives at the local and regional levels and seek to achieve better coordination with local and regional open data teams.
- Activate the network of open data officers and enable them to set up monitoring activities within their organisation (e.g. by developing plans for data publication and monitoring practices). Track progress against these plans and assist open data officers in alleviating barriers to data publication identified in their organisations.
- Ensure that existing open data courses and training materials are promoted and used. Cooperate with training organisations to develop new course offerings tailored to the needs of your national, regional and local administrations. Make such courses formally recognised and provide certification upon successful completion. Ensure that financial resources are allocated at all administrative levels to enable more civil servants to benefit from training.
- Focus on organising activities that better target the delivery of sustainable solutions. Move beyond creativity-stimulating competition formats (e.g. hackathons) to formats that provide opportunities for the medium- to long-term engagement of businesses. Ensure funding and political sponsorship (e.g. by having an organisation serve as a patron) for the winning ideas.

Followers

- Update the national strategy on open data to reflect technical and policy developments at the EU level, including on HVDs (Commission Implementing Regulation (EU) 2023/138) and the latest versions of the DCAT-AP such as release 3.0 of the main profile and its specific extensions such as DCAT-AP for HVDs and StatDCAT-AP, for statistical datasets.
- Set up a governance structure that accounts for the characteristics of your country. Engage potential reuse groups (e.g. data-gathering companies, research institutions, non-governmental organisations) in open data governance in your country. This will enable co-ownership around a common vision and buy-in for the actions of each sector.
- Develop a yearly plan for online activities (e.g. events, conferences) to promote open data. Focus on formats that encourage publication and reuse by both the public and private sectors.

Experiment with formats that both leverage creativity (e.g. hackathons) and enable the development of business opportunities for medium- to long-term engagements (e.g. data challenges).

- Encourage the network of open data liaison officers to set up data publication plans and monitor progress against these plans. Enable the open data officers to exchange knowledge and experiences between public sector bodies and with the broader network of reusers. Deepen the understanding within the network of open data officers of the benefits of open data reuse by the public sector.
- Ensure that existing open data courses and training materials are leveraged, and cooperate with public administrations and training organisations to develop open data training curricula for national, regional and local administrations. Enable such courses to be formally recognised and provide certification upon completion. Ensure that financial resources are allocated at all administrative levels to training activities for civil servants working with data.
- Enable meetings and engagement between reusers and publishers. Develop a deeper understanding of the demand side of open data and work with data providers to prioritise data publication in line with this demand.

Beginners

- Develop a national strategy for open data and align it with broader strategies at the national level (e.g. digital strategies and strategies for the modernisation of the public sector). Ensure the development of legal frameworks and ethical guidelines to govern the use of open data and generally safeguard sensitive and personal information.
- Rally support for the open data programme and political leadership within the top level of government. Showcase international research around the value of open data to emphasise the economic benefits of data exploitation. Use HVDs as a focal point.
- Establish a national-level team in charge of open data to ensure coordination of activities within the country and set up roadshows to increase understanding of the team's scope and activities among primary public administrations. Include all levels of government in this process.
- Organise a series of open data events at the national level and focus on engaging both data publishers and reusers in your country. Prioritise the promotion of reuse cases and best practices for data publication during such events.
- Set up relevant communication channels and assign contact people for data publication within public administrations (e.g. open data liaison officers). Maintain an active dialogue with data officers and enable regular exchanges of knowledge among them, focusing on efficient online channels and face-to-face meetings.
- Identify the primary data holders in the country and understand their main concerns and their perceived barriers to data publication. Take the first steps towards overcoming these barriers and unlocking the publication of data.
- Organise workshops and awareness-raising sessions with the primary data holders. Use materials already developed in other countries and at the European level for content and as a source of inspiration.

Chapter 5: Open data portals

Open data portals are developed at the European, national and local levels to make open data easily accessible to anyone interested in using the data. These platforms often serve as central directories, helping users locate public data resources. Rather than simply storing datasets, many portals function as meta-catalogues, aggregating links to data hosted elsewhere to improve discoverability. Public sector organisations managing these portals often undertake a range of initiatives to promote the availability and reuse of public sector information. In this broader context, portals also play a role in raising awareness about open data and encouraging its use among a diverse range of user groups.

The **portal** dimension of the open data maturity (ODM) assessment is designed to encourage national portals to offer features and functionalities that meet user needs and deliver a positive user experience. A well-designed, user-friendly portal can boost the adoption of open data and help transform casual users into active reusers.

In brief, the portal dimension investigates the functionality of national open data portals, how user needs and behaviours are incorporated into portal improvements, the availability of open data across various sectors and strategies to ensure portals' long-term sustainability. Table 17 provides an overview of the indicators used to assess the portal dimension.

Table 17: Indicators of the portal dimension

Indicator	Key elements
Portal features	This indicator explores how national portals empower users through interactive features and technical capabilities. It assesses whether portals support programmatic access via application programming interfaces (APIs) or SPARQL, offer relevant documentation and enable dataset previews. It also considers user engagement tools such as feedback mechanisms, dataset requests, reuse case submissions and notifications. The presence of community features, transparency around data requests and promotion of high-value datasets (HVDs) are also taken into account.
Portal usage	This indicator assesses how well national portals monitor user activity and apply insights to improve usability. It looks at traffic analysis, API usage and efforts to understand user needs. It also considers whether search behaviour is tracked and if steps are taken to enhance discoverability and metadata clarity.
Data provision	This indicator assesses how well national portals support inclusive data publication. It looks at contributions from public sector providers and whether support is offered to those not yet publishing. It also considers the integration of regional and local data, the use of automatic harvesting and the availability of real-time and citizen-generated datasets. Lastly, it checks if the portal shows when data exists but cannot be shared.
Portal sustainability	To ensure long-term viability, this indicator looks at whether clear sustainability strategies are in place for national portals. It considers the availability of public documentation and open-source code and looks at social media presence. It also assesses whether portals monitor the characteristics of published data and use these insights to improve performance. The focus is on transparency, adaptability and the ability to maintain and develop the portal over time.

This chapter will first present overall performance on the portal dimension and then provide a summary of the results and best practices for each indicator.

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5.1. Overall performance on the portal dimension

In 2025, the portal dimension is the second-best-performing dimension among the EU-27, achieving a maturity score of 85 % (Figure 11). While maturity on this dimension decreased by 3 percentage points (pp) between 2023 and 2024 – partially influenced by changes in the methodology – the maturity level has recovered in 2025, with a 4 pp increase in maturity between 2024 and 2025. The increased score on the portal dimension in 2025 can be attributed to increases in all four of the underlying indicators in this dimension, with the 'portal features' indicator showing the largest year-on-year increase in maturity (+ 5 pp).

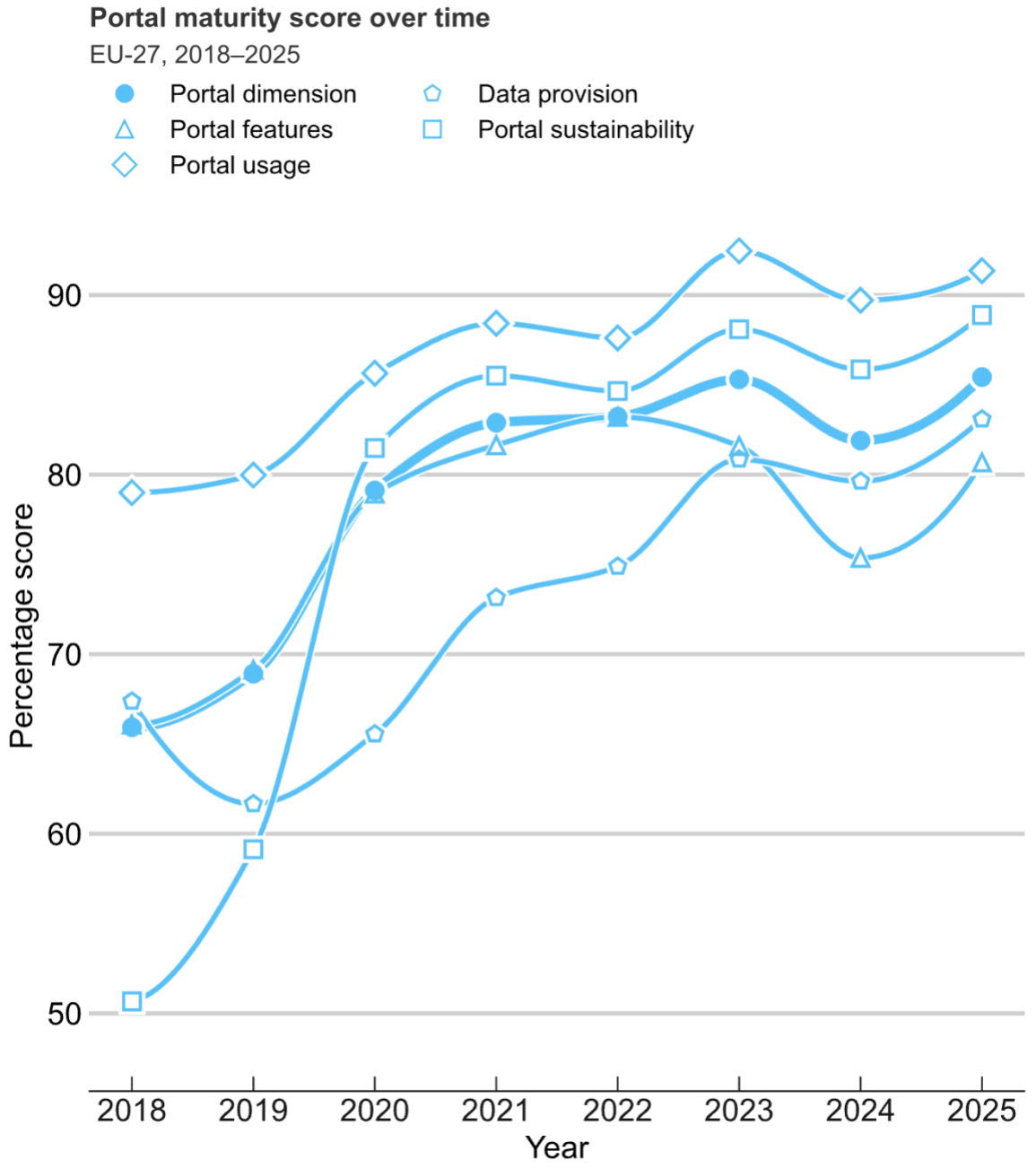

Figure 11: The EU-27 average score on the portal dimension increased year-on-year, counteracting the decrease observed in the previous annual cycle.

Regarding individual country performance, **France** now stands with **Poland** as the two participating countries to report conducting all of the activities assessed in the questionnaire, earning a 100 % maturity score on this dimension (Figure 12). **Lithuania** places third on this dimension, with a maturity score of 99 %, reflecting a 6 pp increase compared with 2024, which was driven by a substantial increase of 27 pp on the 'data provision' indicator. In Lithuania, the State Data Agency actively contacts institutions, coordinates data collection and prepares datasets for publication on the national open data portal. This approach helps to reduce the technical and administrative burden on individual institutions, particularly those with limited resources or expertise.

Highlight from Lithuania – continuous improvement through multichannel feedback

One of the key practices highlighted in this year's report is basing portal improvements on user feedback. **Lithuania**, for example, places a strong emphasis on continuous improvement of its national portal, actively incorporating feedback received via social media and direct contact. Recent developments include enhancements to the user interface, API functionality and task management tools for institutional coordinators. The portal team also uses GitHub to log issues and track potential improvements, applying a ticketing approach to manage updates transparently.

Read more about this trend in Section 5.3.

In total, 20 countries match or exceed the EU average of 85 %, including 13 with scores of 90 % or above. Among these are **Ukraine**, a candidate country scoring 94 %, and **Norway**, a European Free Trade Association (EFTA) country with a score of 92 %.

Highlight from Ukraine – supporting data providers in the publication process

One of the key practices highlighted in this year's report is providing support to data providers to facilitate the publication of high-quality datasets on national portals. **Ukraine** takes a structured approach to assisting public authorities in their data publication efforts, offering both technical and strategic guidance.

The Ministry of Digital Transformation plays a central role in coordinating open data activities and supporting data providers. As part of its efforts, the ministry has developed a comprehensive set of resources and tools to streamline the publication process and improve data quality.

- **Technical documentation and guidance.** Ukraine provides detailed instructions and templates to help data providers prepare and publish datasets in line with national standards. These materials cover metadata structuring, licensing and compliance with the Data Catalog Vocabulary Application Profile (DCAT-AP) standard, ensuring consistency across the portal.
- **Monitoring and feedback mechanisms.** The national portal includes features that allow for the tracking of dataset publication and reuse. Data providers receive feedback on the quality and completeness of their metadata, helping them to identify areas for improvement and align with best practices.
- **Capacity building and coordination.** Regular training sessions and workshops are organised to build the skills of data publishers. These events foster collaboration between institutions and promote a shared understanding of open data principles and technical requirements.

Ukraine's approach demonstrates how targeted support and clear guidance can empower data providers, enhance the quality of published data and strengthen the overall open data ecosystem.

Read more about this trend in Section 5.4.

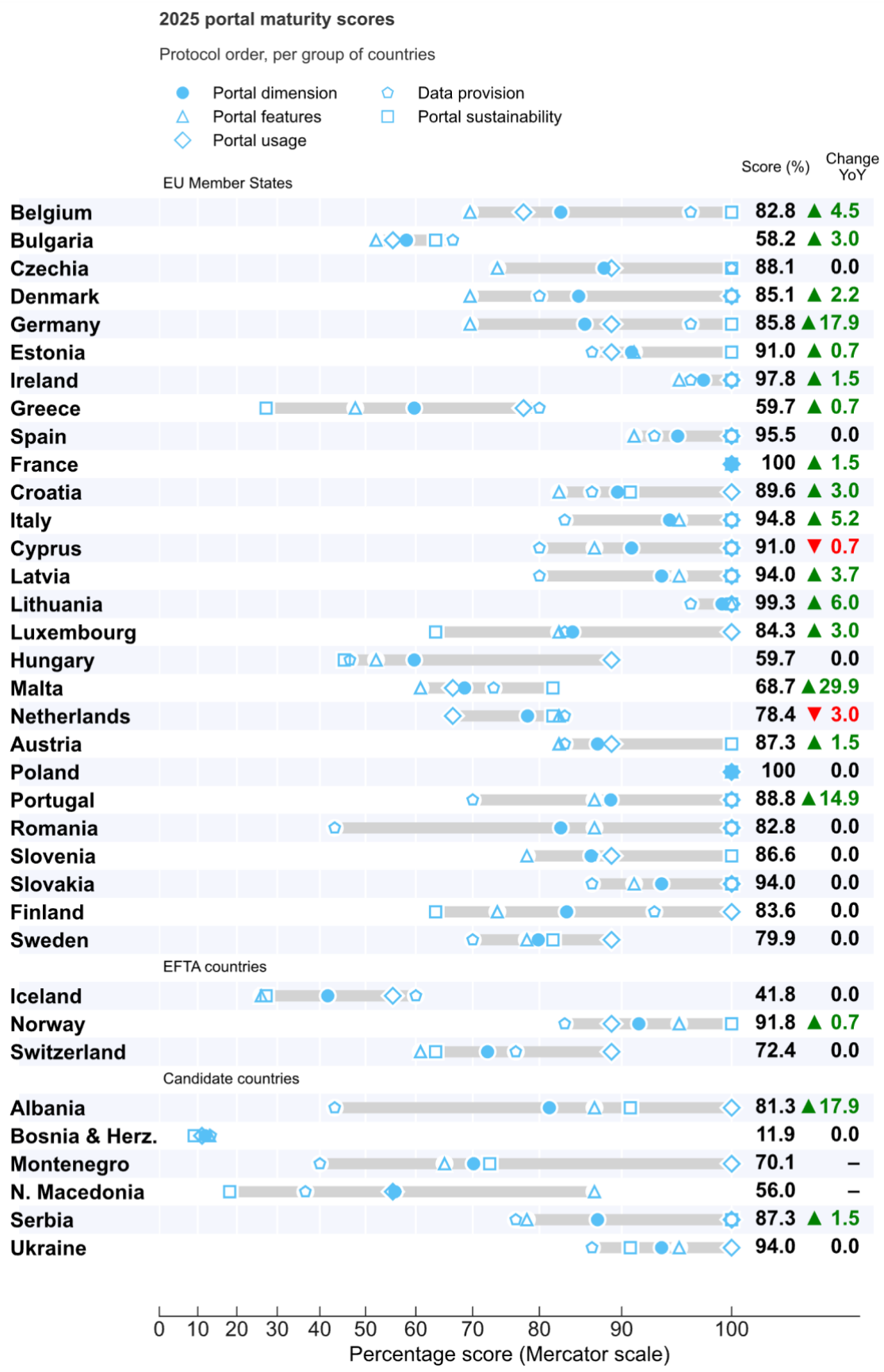

Figure 12: The majority of countries had either a stable or an increased score on the portal dimension in 2025.
NB: YoY, year-on-year.

Malta (+ 30 pp), **Albania** (+ 18 pp), **Germany** (+ 18 pp) and **Portugal** (+ 15 pp) achieved double-digit improvements in their maturity scores compared with 2024. **Malta's** improved maturity can be attributed to progress across all four indicators of the portal dimension. The country achieved a notable increase in the 'portal sustainability' indicator (+ 45 pp), driven by the introduction of a sustainability strategy for its national portal, and on the 'portal features' indicator (+ 35 pp), where it enhanced its feedback mechanisms and user involvement to ensure relevant updates to the portal.

Germany's increased maturity is primarily driven by a significant rise in the 'portal sustainability' indicator (+ 55 pp). This resulted from the national portal's active presence on social media platforms such as Mastodon and LinkedIn and from the implementation of the GovData Monitor, which tracks data characteristics and informs daily improvements. These insights help identify structural issues across the portal ecosystem, including with harvesters and connected portals. Germany also saw progress on the 'portal features' indicator (+ 26 pp) following the introduction of a contact mechanism, a way to request datasets and the integration of open-data-related news into the portal.

Portugal's maturity gains stem mainly from an increase in the 'portal usage' indicator (+ 33 pp). This was driven by enhanced monitoring efforts, including expanded API analytics, tracking of user-entered search keywords and analysis of the most and least visited pages. These measures provide valuable insights into user behaviour and help guide improvements to the portal's structure and content.

For the second year in a row, **Albania** is among the major improvers in the portal dimension. It achieved significant progress on the 'portal features' (+ 35 pp) and 'portal usage' (+ 22 pp) indicators. Key improvements included the implementation of a rating system for datasets, the creation of a dedicated reuse section and analysis of user behaviour, not only through traffic monitoring but also through a user workshop and a user survey.

Highlight from Albania – comprehensive portal upgrade to enhance user experience

One of the practices highlighted in this year's report is the maturity gains that can be achieved through a comprehensive upgrade of the national open data portal. **Albania** exemplifies this approach through a large-scale revamp of its portal, aimed at improving usability, transparency and user engagement. The updated portal now features a dataset rating system (1–5 stars), a dedicated news section on open data topics and multiple notification options, including RSS and Atom feeds and email. Users can follow the progress of their data requests; the requests are actively monitored and the responses summarised in publicly available reports. A newly introduced reuse section showcases practical applications of datasets, with direct links to the source data and the option for users to submit their own reuse cases. To better understand and respond to user needs, the portal team tracks search keywords, analyses traffic and conducts user surveys and workshops. Together, these enhancements reflect a strategic and user-centric effort to elevate the portal's functionality and foster a more mature and responsive open data ecosystem.

Read more about this trend in Section 5.2.

Two participating countries – **Cyprus** (– 1 pp) and the **Netherlands** (– 3 pp) – experienced slight reductions in maturity on the portal dimension. In **Cyprus**, the national portal previously harvested data from all local and regional sources automatically, but now a majority of datasets, but not all, are harvested in this way. The **Netherlands** temporarily paused monitoring and promotional activities as part of an ongoing update to the platform's vision and ambition.

5.2. Portal features

This indicator assesses both basic and advanced features of national open data portals. Basic functionalities include advanced search options (e.g. multifield searches and filtering), dataset downloads and the ability to search by file format or data domain. More advanced portals allow users to access data programmatically through APIs or SPARQL queries. This indicator also looks at whether users can request and rate datasets and if the portals showcase reuse cases. Additionally, it evaluates features that promote online interaction between data providers and users, including discussion forums, feedback channels and notifications for new datasets.

Overview of national portals

All participating countries have a national open data portal, **except Bosnia and Herzegovina** where open data is provided through local portals. To ensure more advanced and flexible search capabilities, all national open data portals in the EU provide APIs (100 %) and several provide SPARQL end points (15 EU Member States; 56 %), along with documentation, to enable programmatic querying of metadata. These tools allow users and developers to interact directly with the portal's underlying data structures, enabling advanced queries and data retrieval beyond what is possible through a standard web interface. Table 18 provides an overview of the key features of national open data portals.

Table 18: Overview of national open data portals for all of the 2025 participating countries

Country	National portal website	Technology stack	API present?	SPARQL access point present?
Member States				
Belgium	https://data.gov.be/en	Custom back end with Drupal front end (see GitHub)	Yes (see API)	
Bulgaria	https://data.egov.bg	Custom, including Fluentd, Elasticsearch node, MariaDB and Graylog	Yes (see API)	
Czechia	https://data.gov.cz/english	Custom, including LinkedPipes	Yes (see API)	Yes (see end point)
Denmark	www.datavejviser.dk	CKAN back end with a DCAT plug-in and a front end designed with React	Yes (see API)	
Germany	https://www.govdata.de	Typo3 for the content management system and piveau (previously CKAN) for data storage	Yes (migrating from CKAN API to piveau API)	Yes (see end point)
Estonia	https://andmed.eesti.ee/	Custom, including Typescript, PostgreSQL and Solr	Yes (see API)	Yes (see end point)
Ireland	https://data.gov.ie	CKAN	Yes (see API)	
Greece	https://data.gov.gr	Custom	Yes (see API)	Yes (see end point)

Country	National portal website	Technology stack	API present?	SPARQL access point present?
Spain	https://datos.gob.es/en	CKAN and Drupal for content management and Virtuoso for the SQARQL end point	Yes (see API)	Yes (see end point)
France	https://www.data.gouv.fr	Udata	Yes (see API)	Yes (see end point)
Croatia	https://data.codeforcroatia.org/	CKAN	Yes (see API)	Yes (see end point)
Italy	https://dati.gov.it	CKAN and Drupal	Yes (see API)	Yes (see end point)
Cyprus	https://www.data.gov.cy/	EKAN	Yes (see API)	
Latvia	https://data.gov.lv/eng	CKAN	Yes (see API)	Yes (see end point)
Lithuania	https://data.gov.lt/?lang=en	Self-developed solution in Python	Yes (see API)	Yes (see end point)
Luxembourg	https://data.public.lu/en	Udata	Yes (see API)	
Hungary	https://kozadatportal.hu	CKAN	Yes (see API)	
Malta	https://open.data.gov.mt	CKAN	Yes (see API)	
Netherlands	https://data.overheid.nl/en	CKAN	Yes (see API)	
Austria	https://www.data.gv.at/home?locale=en	piveau and DCAT-AP (previously based on CKAN and Wordpress)	Yes	
Poland	https://dane.gov.pl/	Custom, including Falcon, Django, RDFLib, Wagtail CMS and Typescript (microservice architecture)	Yes (see API)	Yes (see end point)
Portugal	https://dados.gov.pt/en/	Udata	Yes (see API)	Yes (see end point)
Romania	https://data.gov.ro/en	CKAN	Yes (see API)	
Slovenia	https://podatki.gov.si	CKAN	Yes (see API)	
Slovakia	https://data.gov.sk/en	Custom, including LinkedPipes	Yes (see API)	Yes (see end point)
Finland	https://www.avoindata.fi/en	CKAN	Yes (see API)	Yes (see end point)
Sweden	https://www.dataportal.se/en	Custom, including EntryScape, the Strapi CMS and NodeBB	Yes (see API)	Yes (see end point)
EFTA countries				
Iceland	https://opingogn.is	CKAN		

Country	National portal website	Technology stack	API present?	SPARQL access point present?
Norway	https://data.norge.no	Custom, including Phython, Kotlin, Typescript, Rust, React, Next.js, Spring, RostgreSQL, MongoDB and Kafka	Yes (see API)	Yes (see end point)
Switzerland	https://opendata.swiss/en/	CKAN	Yes (see API)	
Candidate countries				
Albania	https://opendata.gov.al/en	Custom-built using .NET Core 8, follows the Clean Architecture pattern and uses Hangfire for harvesting	Yes (see API)	Yes (see end point)
Bosnia and Herzegovina	None			
Montenegro	https://data.gov.me/	CKAN	Yes (see API)	
North Macedonia	https://data.gov.mk/	CKAN	Yes	
Serbia	https://data.gov.rs	Udata	Yes (see API)	
Ukraine	https://data.gov.ua/en	CKAN	Yes (see API)	Yes (see end point)

(Questions PT1, PT2, PT3 and PT4)

NB: CKAN, Comprehensive Knowledge Archive Network; CMS, content management system.

Preview functions

Making data more accessible through preview functions can encourage individuals to engage with the data. This approach applies to both tabular and geospatial data, fostering a more interactive and user-friendly experience. Table 19 presents an overview of how countries responded to the questions on this topic. In 2025, such features have become more widely adopted and cover a diverse range of datasets. Previews of tabular data remain more widely available than previews of geospatial data.

Table 19: Countries' responses to questions on preview functions

	Does the national portal offer a preview function for tabular data?	*Does the national portal offer a preview function for geospatial data?*
EU-27	20 Member States (74 %) report that they offer a preview function for tabular data. The newest countries to report having this feature are **Austria** and **Malta**.	17 Member States (63 %) report having a preview function for geospatial data. This is an increase from 2024, with **Italy** and **Malta** the latest additions to this group.

	Does the national portal offer a preview function for tabular data?	*Does the national portal offer a preview function for geospatial data?*
EFTA	**Norway** and **Switzerland** report having preview functions for tabular data.	**Norway** and **Switzerland** report having preview functions for geospatial data. This remained stable from 2023.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report having preview functions for tabular data.	**Albania**, **Montenegro**, **North Macedonia** and **Ukraine** report having a preview function for geospatial data.

(Questions PT20 and PT21)

Providing feedback on the portal

To improve usability and support ongoing development of the portal, national portals may include features that allow users to provide feedback. This typically includes a visible 'Contact us' or 'Feedback' button for general comments about the portal. In some cases, users can also rate individual datasets or submit dataset-specific feedback. Table 20 presents an overview of how countries have implemented these features.

Table 20: Countries' responses to questions on portal feedback mechanisms

	Does the national portal offer a mechanism for users to provide general feedback?	*Does the national portal offer a mechanism for users to provide feedback on specific datasets?*	*Does the national portal provide a mechanism for users to rate datasets?*
EU-27	All Member States (100 %) enable users to provide general feedback on the portal. **Germany** and **Greece** newly report offering this feature.	20 Member States (74 %) enable users to provide feedback on a specific dataset. **Belgium** removed the feature due to little usage.	16 Member States (59 %) enable users to rate datasets. **France** and **Greece** are the latest Member States offering this feature.
EFTA	All three participating EFTA countries enable users to provide feedback on the portal, with **Switzerland** newly reporting this.	**Iceland** and **Norway** enable users to provide feedback on specific datasets.	None of the participating EFTA countries enables users to rate specific datasets.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** enable users to provide general feedback on the portal.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** enable users to comment on specific datasets.	**Albania**, **Montenegro**, **North Macedonia** and **Ukraine** enable users to rate datasets.

(Questions PT8, PT9 and PT10)

While general feedback mechanisms have long been a standard feature across national open data portals, this year sees further refinement in how users can interact with portal teams and dataset publishers. Many countries continue to offer direct contact channels, typically through general forms, while others are expanding their feedback channels by offering more interactive features. **Greece**, for

instance, has newly introduced a dataset rating system, joining a growing number of countries that allow users to evaluate datasets through star-based ratings. At the same time, some countries are reassessing these features. **Belgium**, for example, removed its dataset-level feedback option due to limited uptake, while **France** uses several features to understand the usefulness or quality of a dataset and to display these to users (Figure 13), including the following.

- Usage metrics, such as reuse counts, are prominently displayed and serve as indicators of interest and relevance.
- Users can mark datasets as favourites, which acts as a form of positive feedback.
- Open discussions are available on each dataset page, allowing users to share critiques and/or suggestions.
- A reporting function is available to flag outdated or problematic content.
- Each dataset has a metadata quality score, which is based on the completeness and structure of its information.

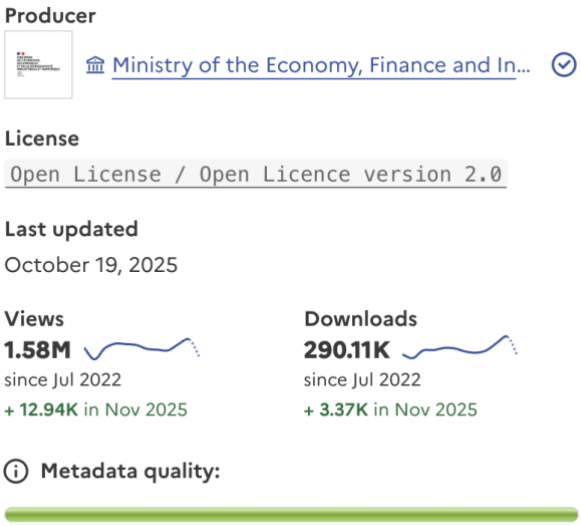

Figure 13: Screenshot from data.gouv.fr showing the dataset-level information displayed to users.

High-value datasets

The reuse of HVDs offers significant benefits to society, the environment and the economy. Promoting these datasets on the portal can help boost the visibility and reuse of these datasets. Table 21 presents an overview of how countries responded to the question on this topic. Common approaches to promoting HVDs on the national portal include incorporating filtering options to help users easily locate these datasets and using editorial tools such as labels or tags to promote their visibility and encourage reuse. Several countries have also created dedicated sections within their portals to inform users about HVDs and their significance.

Table 21: Countries' responses to the question on HVDs

	Do you promote HVDs on your national portal?
EU-27	24 Member States (89 %) report actively promoting HVDs on their national portals. The newest Member States reporting this are **Belgium**, **Italy**, **Malta**, the **Netherlands** and **Portugal.**

(Question PT22)

NB: Non-EU countries were not surveyed on this question as Commission Implementing Regulation (EU) 2023/138 on HVDs applies only to Member States.

Requesting datasets and providing transparency

Users may seek datasets that are not available on the national portal. In this case, it is valuable if they can request specific datasets, such as through a 'request data' button. It is beneficial to users if such requests and their progress status are presented transparently. Table 22 presents an overview of how countries responded to the questions on this topic.

Table 22: Countries' responses to questions on requesting datasets and providing transparency

	Does the national portal enable users to request datasets?	*Are requests for datasets and their progress status presented in a transparent manner on the national portal?*	*Does the team monitor the extent to which requests result in the publication of the requested data?*
EU-27	23 Member States (85 %), with **Germany** as the latest addition, provide the possibility for users to request datasets.	19 Member States (70 %), with **Malta** as the latest addition, report that they display the progress of requests on their national portals.	24 Member States (89 %) report that they monitor the results of requests, with **Germany** being the newest addition.
EFTA	Like in 2023, **Norway** reports that it provides the possibility for users to request datasets.	Like in 2023, **Norway** reports that it displays requests on its national portal.	Like in 2023, **Norway** reports that it monitors the status of requests.
Candidate	**Albania**, **North Macedonia**, **Serbia** and **Ukraine** provide the possibility for users to request datasets.	**Albania**, **North Macedonia** and **Ukraine** report displaying requests on their national portals.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they monitor the status of requests.

(Questions PT13, PT14 and PT15)

The open data team is typically responsible for reviewing dataset requests, monitoring them over time and providing responses. In some countries, this process is supported by automated tools that allow users to submit requests through standardised forms and dashboards. In others, requests are sent via email and require manual evaluation by the open data team.

Highlight from France – transparency in data requests
Users in **France** can request datasets that are not yet available through a dedicated public forum. A specific category on the forum allows individuals to post open data requests and engage in discussions with the portal team and other users. To ensure transparency, the progress of these requests is tracked on a separate monitoring page, which outlines the status of each request. This setup enables users to follow the life cycle of a request, from submission to evaluation and potential publication. France's approach aims to encourage open dialogue and community participation, helping to prioritise data needs and strengthen the responsiveness of public data services.

Actively involving users

Users can be a source of citizen-generated data, including open data that they have processed into new forms. This can help national portals increase the variety of available data and enhance the community's engagement. When new datasets, whether from official or non-official sources, are published, national portals can notify users to enhance the reach of open data. Table 23 presents an overview of how countries responded to the questions on this topic.

Table 23: Countries' responses to questions on actively involving users

	Does the national portal provide the functionality for users to contribute datasets that they have produced or enriched?	*Does the national portal offer the possibility for users to receive notifications when new datasets are available on the national portal?*
EU-27	19 Member States (70 %), with the new addition of **Malta**, report that they enable users to actively publish datasets on their national portals.	20 Member States (74 %) report that they notify users when new datasets are available.
EFTA	**Norway** reports that it enables users to publish datasets on its national portal.	**Norway** and **Switzerland** report that they notify users when new datasets are available.
Candidate	**Serbia** and **Ukraine** report that they enable users to publish datasets.	**Albania**, **North Macedonia**, **Serbia** and **Ukraine** report offering notifications on new content being published.

(Questions PT7 and PT12)

Enhancing the open data culture

To engage users, many national portals provide a space to find information, events and news on relevant open data topics in the country. Additionally, national data portals often provide functionalities that enables reusers and data providers to interact. Table 24 presents an overview of how countries responded to the questions on this topic.

Table 24: Countries' responses to questions on enhancing the open data culture

	Does the national portal enable users to find information and news on relevant open data topics in the country?	*Does the national portal offer a mechanism through which users can undertake exchanges with others?*
EU-27	26 Member States (96 %), all **except Bulgaria**, report publishing information on open data topics in the country.	20 Member States (74 %), with **Germany** as the most recent addition, report providing a space for dialogue on their national portals, such as a discussion forum.
EFTA	**Norway** and **Switzerland** report publishing information on open data topics in the country.	**Norway** reports offering a mechanism for users to exchange information with other users.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report updating users on open data topics.	**North Macedonia**, **Serbia** and **Ukraine** report enabling users to interact with each other on their national portals.

(Questions PT11 and PT16)

National portals typically support user engagement by offering access to news and updates on open data developments. Most platforms include a dedicated section for blog posts or announcements, while others highlight recent topics directly on the home page. Social media is also used to share updates, with several countries actively posting across multiple platforms. Some portals stand out for their multi-format content strategies. **Spain**, for instance, combines expert commentary, infographics and event recaps to reach a broader audience, supported by a regular newsletter sent to thousands of subscribers.

In terms of interaction with data providers, several countries host discussion forums on their open data portals. Many portals also allow users to comment directly on individual datasets. In terms of the underlying technology, **Austria** and **Romania** use the Disqus plug-in for their comment feature and forum. Other countries use external services for such exchanges. For example, **Czechia** and **Spain** use GitHub and **Belgium** and **Cyprus** have set up chat rooms on Element.io (formerly Riot.im). Nonetheless, other countries have discontinued such features. **North Macedonia** has currently disabled its comment section due to issues with bots. **Finland** has withdrawn its discussion board due to low use and for security reasons. The forum had issues with fake accounts that fed the platform different kinds of advertisements, which required a lot of manual moderation to manage.

Providing examples of open data reuse

National portals often include sections that highlight how open data is reused, helping users explore practical applications and success stories. These examples are typically tagged or linked to relevant datasets, making it easier to navigate and understand the context. For example, **Sweden** has recently updated its approach by relaunching its 'Good examples' section, which showcases reuse cases and presents best practices from public actors. Table 25 presents an overview of how countries responded to the questions on this topic.

Table 25: Countries' responses to questions on showcasing open data reuse examples

	Does the national portal showcase reuse examples, such as in a designated section of the portal?	*Does the national portal reference the datasets that the showcased reuse examples are based on?*	*Does the national portal provide the possibility for users to submit their own reuse cases?*
EU-27	24 Member States (89 %) report highlighting reuse cases in a designated section of their portals. This feature is temporarily no longer available in **Greece** as it migrates to a redeveloped portal.	22 Member States (81 %), with **Germany** as the latest addition, report linking reuse cases to the underlying datasets.	21 Member States (78 %) report enabling users to submit their own reuse cases.
EFTA	**Norway** and **Switzerland** report highlighting reuse cases in a designated section of their portals.	**Norway** and **Switzerland** report linking reuse cases to the underlying datasets.	**Norway** and **Switzerland** report enabling users to submit their own reuse cases.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report highlighting reuse cases in a designated section of their portals.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report linking reuse cases to the underlying datasets.	**Albania**, **North Macedonia**, **Serbia** and **Ukraine** report enabling users to submit their own reuse cases.

(Questions PT17, PT18 and PT19)

5.3. Portal usage

This indicator examines whether portal administrators regularly evaluate how well the portal's design, features and available data align with user needs. While direct user feedback can offer valuable insights, it is often anecdotal and limited in scope. For this reason, this indicator also considers whether systematic monitoring is in place to better understand user behaviour. This includes the collection and analysis of data such as the number of unique visitors, typical user profiles, the most frequently accessed datasets, preferred data categories and traffic generated through the portal's APIs.

User analytics

Understanding how national portals are used is useful for countries aiming to strengthen both the supply and reuse of open data. Commonly used tools for website tracking include Matomo Web Analytics, Google Analytics and Piwik PRO. Some countries also report using Siteimprove and Fathom. In addition to tracking visitor numbers, countries may also use tools such as user satisfaction surveys and user workshops, monitoring search engine optimisation performance and social media analysis to gain deeper insights into user behaviour and needs. Table 26 presents an overview of how countries responded to the questions related to this topic.

Table 26: Countries' responses to questions on user analytics

	Do you monitor the portal's traffic?	*Besides monitoring portal traffic, do you perform any further activities to better understand the behaviour and needs of users of your portal?*
EU-27	All 27 Member States (100 %) report that they monitor the portal's traffic.	25 Member States (93 %) report that they conduct other activities to understand users' needs. **Croatia**, **Latvia** and **Malta** are the newest Member States that report this.
EFTA	All participating EFTA countries report that they monitor the portal's traffic.	All participating EFTA countries report that they conduct other activities to understand users' needs.
Candidate	All participating candidate countries report that they monitor the portal's traffic.	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they conduct other activities to understand users' needs.

(Questions PT23 and PT25)

Enhancing the performance of national portals

User feedback continues to play a central role in shaping the development of national open data portals. Many countries actively analyse how users interact with their portals, using insights from dataset access, download behaviour and feedback to guide improvements. At the same time, countries are investing in outreach efforts to promote open data and engage wider audiences. These often include arranging annual hackathons or open data meetups that bring together public sector representatives and businesses, academia or other citizen groups. It is also common practice to promote the national open data portal through institutional newsletters, by cross-referencing the national portal on other official government websites, by leveraging the brand of the portal as the officially acknowledged central national platform for open data and through promotional campaigns on social media channels such as Bluesky, Facebook, LinkedIn, Mastodon, YouTube and X (formerly Twitter). Table 27 provides an overview of how countries responded to the questions related to this topic.

Table 27: Countries' responses to questions on enhancing the performance of national portals

	Do you use the insights about portal usage and about the behaviour and needs of portal users to improve the portal accordingly?	*Do you undertake any activities to promote the portal and attract new users or new audiences?*
EU-27	24 Member States (89 %) report using insights from users to keep improving their portals.	24 Member States (89 %) report conducting activities to promote and attract new users. This number has decreased by one country, the **Netherlands**, since 2024.
EFTA	**Norway** and **Switzerland** report using user insights to keep improving their portals.	**Norway** and **Switzerland** report conducting activities to promote and attract new users.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report using user insights to keep improving their portals.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report conducting activities to promote and attract new users.

(Questions PT26 and PT27)

Highlight from Ireland – enhancing reach through strategic promotion and engagement

Ireland has adopted a multichannel approach to increase visibility and engagement with its national open data portal. By combining targeted outreach, strategic partnerships and user-focused communication, the portal team has successfully broadened its audience and encouraged greater data use.

Key initiatives include the following.

- **Newsletter and network amplification.** The portal's newsletter is widely distributed – not only to subscribers but also through key networks such as open data liaison officers, the advisory group and the governance board.
- **Training and public sector collaboration.** Open data training is shared via public sector learning and development teams, helping to build awareness and capacity across government bodies.
- **Social media and event outreach.** The team actively promotes the portal on platforms like X and shares QR codes during conferences and university events, such as Love Data Week, to engage students, researchers and the wider public.
- **User-focused platform and strategy.** Ireland's second national open data strategy emphasises user engagement, while the portal itself offers intuitive navigation, topic-based categorisation and regular updates to support discovery and usability.
- **Community building and support.** Through the Open Data Engagement Fund, workshops and direct support to data publishers, Ireland fosters a vibrant open data ecosystem that encourages both data publication and reuse.

Most popular data domains

Efforts are often undertaken to optimise search and discoverability, including by tracking which keywords are used to search for data and content, identifying the most and least visited pages, and evaluating how easily users reach datasets. Some countries report that they explicitly prioritise improving metadata quality and ensure that datasets are properly categorised and tagged with relevant keywords to improve the portal's internal search functionality and to boost the portal's visibility on external search platforms. This includes actions like implementing schema.org to provide better findability in Google, as reported by **Czechia** and the **Netherlands**. There are also examples of new AI-based search features, in **Norway** for instance, that further support content discoverability. In addition, **Ireland** and the **Netherlands** report advanced search features that are based on metadata indexing via Solr. Table 28 summarises how countries addressed the questions related to this topic.

Table 28: Countries' responses to questions on the most popular data domains

	Do you monitor what keywords are used to search for data and content on the portal?	*Do you take measures to optimise the search and discoverability of content?*
EU-27	25 Member States (93 %), with **Portugal** as the most recent addition, report that they monitor the keywords used in their portals and the most and least consulted pages.	All Member States (100 %) report optimising the discoverability of datasets.
EFTA	**Norway** and **Switzerland** report that they monitor the keywords used in their portals and the most and least consulted pages.	All participating EFTA countries report that they implement measures to improve the discoverability of content.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they monitor the keywords used in their portals and the most and least consulted pages.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they implement measures to improve the discoverability of content.

(Questions PT28 and PT30)

Application programming interfaces

APIs enable reusers to access metadata programmatically, allowing automated searches and data processing. National portals can analyse API usage similarly to how they analyse regular portal traffic. To support both human and machine readability, metadata can be presented in clear, accessible language. Table 29 provides an overview of how countries responded to the questions related to this topic.

Table 29: Countries' responses to questions on APIs

	Do you run analytics on API usage?	*Is the metadata on your portal available in clear, plain language to enable both humans and machines to read and understand it?*
EU-27	18 Member States (67 %) report analysing API usage. **Malta** and **Portugal** newly report running analytics on API usage. **Slovenia** no longer reports conducting API analytics.	All Member States (100 %) have metadata that is written in language that is understandable to humans and machines, like in 2023.
EFTA	**Iceland** reports analysing API usage.	All participating EFTA countries report providing human-readable metadata.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report analysing API usage.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report providing human-readable metadata.

(Questions PT24 and PT31)

5.4. Data provision

This indicator assesses how actively data providers contribute to national portals and the strategies in place to encourage their involvement, including the links between national and regional/local portals. It also examines how portals support access to citizen-generated data and data that cannot be openly shared. Finally, it evaluates how well the portal infrastructure supports access to real-time and dynamic datasets.

Official data providers

In general, official data providers make data available on the national open data portal. In many countries, legislation mandates that public sector open data must be registered in the national open data portal. Common reasons for public sector providers not providing data include low awareness by public actors of the benefits of open data; a perception that data sharing is difficult, for example due to national security risks and uncertainty about what data can be shared as open data; and governance structures, such as decentralised systems, making it difficult to strongly incentivise regional actors to share data. Furthermore, most countries make it possible for users to discover datasets that exist but are not openly accessible. In these cases, there is often a dedicated page for these datasets, along with a notice explaining the restricted access and instructions on how to request permission. Such countries often have the long-term objective of making their national open data portal the central portal for all public data. Table 30 presents an overview of how countries responded to the questions on this topic.

Table 30: Countries' responses to questions on official data providers

	To what degree do public sector data providers contribute data to the portal?	*Does the national portal allow users to see if data exists that cannot be made available as open data?*
EU-27	23 Member States (85 %) report that all or the majority of public sector providers supply data to the national portal.	21 Member States (78 %) report that they show users if data exists that cannot be made available as open data. **Belgium** and **Lithuania** newly report this.
EFTA	**Norway** assesses that the majority of data providers contribute data to the portal, while **Switzerland** assesses that approximately half of data providers supply data. **Iceland** reports that only a few public sector bodies supply data to the national portal.	All the participating EFTA countries report that they show users if data exists that cannot be made available as open data.
Candidate	**Ukraine** reports that all public sector providers supply data to the national portal. **Albania** and **Serbia** assess that approximately half of data providers supply data to the portal.	None of the participating candidate countries report showing users if data exists that cannot be made available as open data.

(Questions PT32 and PT40)

Non-official data providers

Some countries also allow non-official providers to contribute data to their national portals, such as community-sourced / citizen-generated data. Table 31 presents an overview of how countries responded to the question on this topic.

Table 31: Countries' responses to the question on non-official data providers

	Does the national portal provide a way for non-official data to be published?
EU-27	17 Member States (62 %) report allowing the publication of non-official data on their portals.
EFTA	None of the EFTA countries report allowing the publication of data from non-official providers on their portals.
Candidate	**Serbia** and **Ukraine** report allowing the publication of non-official data on their portals.

(Question PT39)

Assistance for data providers

National portals can expand the availability of open data by identifying providers that have not yet contributed and actively supporting them in the publishing process. Countries use a range of approaches to support data providers in publishing datasets on national portals, such as offering general guidance, creating online tutorials and frequently asked questions (FAQs) pages, and arranging targeted meetings. Table 32 presents an overview of how countries responded to the questions on this topic.

Table 32: Countries' responses to questions on assistance for data providers

	Do you identify the data providers that are not yet publishing data on the national portal?	*Were there concrete actions taken to assist these data providers with their publication processes?*
EU-27	All Member States (100 %) report that they identify the data providers not yet publishing data on their national portals.	All Member States (100 %), with the recent addition of **Lithuania**, report that they take concrete actions to assist these data providers with their publication processes.
EFTA	All participating EFTA countries report that they identify the data providers not yet publishing data on their national portals.	All participating EFTA countries report that they take concrete actions to assist these data providers with their publication processes.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they identify the data providers not yet publishing data on their national portals.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they take concrete actions to assist these data providers with their publication processes.

(Questions PT33 and PT34)

Regional and local data sources

While national portals focus primarily on datasets from national-level sources, regional and local data can provide valuable, context-rich insights across various domains. Integrating these datasets into national platforms enhances their visibility and encourages wider reuse. Table 33 presents an overview of how countries responded to the questions on this topic.

Table 33: Countries' responses to questions on regional and local datasets

	Besides the national open data portal, are there other regional and local portals?	*Are regional and local portals and their data sources discoverable via the national portal?*	*To what degree are data from regional and local sources harvested automatically?*
EU-27	24 Member States (89 %) report that there are other regional and local portals besides the national open data portal.	21 countries (78 %) report that regional and local sources are discoverable via the national portal. The number has decreased by one country, **Sweden**, since 2024.	18 Member States (67 %), with **Denmark** as the latest addition, report that all or the majority of regional and local datasets are harvested automatically. 4 Member States (15 %) indicated that this question was not applicable, mainly because there are no regional bodies given the size of their countries.
EFTA	All participating EFTA countries report that regional and local portals exist in their country. **Iceland** newly reports this.	All participating EFTA countries report that regional and local sources are discoverable via the national portal.	**Norway** reports that all regional and local datasets are harvested automatically. For **Switzerland**, this is true of the majority of datasets. **Iceland** reports that none of the regional and local datasets are automatically harvested.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Serbia** and **Ukraine** report that regional and local portals exist in their country.	**Serbia** and **Ukraine** report that regional and local sources are discoverable via the national portal.	**Ukraine** reports that all regional and local datasets are harvested automatically. For **Serbia**, this is true of the majority of datasets.

(Questions PT35, PT36 and PT37)

In most cases, regional and local data are also made discoverable through the national portal. (Some countries, due to their size and governance structures, do not have regional or local portals.) In many countries, the data from smaller regional and local portals is integrated into the national catalogue through automated harvesting, typically following agreements with local authorities. However, not all countries have adopted this approach. In **Estonia**, for example, most local governments and other local data owners are small organisations with limited budgets and staff, and often with no designated data

governance specialists nor procedures. Since these organisations typically have only a small number of datasets, it is most practical to manage these manually.

Access to real-time and dynamic data

Most national portals include real-time or dynamic datasets. Dynamic data is information that changes over time and is updated at regular intervals, such as weekly unemployment statistics. Real-time data, however, is refreshed continuously and at short intervals, with examples including live traffic updates, air quality measurements and current weather conditions. This type of data is essential for applications like navigation systems that optimise routes based on traffic or models used for economic forecasting. Table 34 provides a summary of how countries responded to the question on this topic.

Table 34: Countries' responses to the question on real-time and dynamic data

	Does the national portal include datasets of real-time or dynamic data?
EU-27	25 Member States (93 %), with **Malta** as the most recent addition, report that they offer real-time or dynamic data on their portals.
EFTA	All participating EFTA countries offer real-time or dynamic data on their portals.
Candidate	**Albania**, **North Macedonia**, **Serbia** and **Ukraine** report offering real-time or dynamic data on their portals.

(Question PT38)

5.5. Portal sustainability

This indicator examines the measures in place to ensure the long-term viability of national open data portals. It covers strategies to boost portal visibility, approaches for collecting and responding to user feedback, and systems for tracking and improving portal performance over time.

Strategy and visibility

A crucial element in maintaining the long-term sustainability of national portals is the development of a clear strategy or action plan. Indeed, in most countries, the national portal is a central element of a broader open data strategy. In some countries, such as **France** and **Italy**, the mission of the open data portal is even set out in law. In other countries, such as **Finland**, the portal is identified as one of the public digital services provided by the government. Additionally, most countries maintain a presence on social media platforms. These channels are actively used to raise public awareness about open data and to engage directly with users and data communities. More countries report having accounts on Bluesky and Mastodon than in previous years. Table 35 provides a summary of how countries responded to the questions related to this topic.

Table 35: Countries' responses to questions on strategy and visibility

	Does the national portal have a strategy to ensure its sustainability?	*Is your national portal active on social media?*
EU-27	23 Member States (85 %) report that the national portal has a strategy to ensure its sustainability. **Malta** newly reports this.	23 Member States (85 %) are active on social media to increase the visibility of the portal. **Germany** and **Greece** newly report doing this.
EFTA	**Norway** and **Switzerland** report that the national portal has a strategy to ensure its sustainability.	All participating EFTA countries are active on social media.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report having a strategy to ensure the portal's sustainability.	**Albania**, **North Macedonia**, **Serbia** and **Ukraine** report being active on social media.

(Questions PT41 and PT42)

Availability of documents to the public

To promote transparency and support open-source practices, national portals can publish their source code along with relevant documentation and technical artefacts. Platforms like GitHub or GitLab are commonly used for this purpose, enabling public access and collaboration. Table 36 presents an overview of how countries responded to the question on this topic.

Table 36: Countries' responses to the question on the public availability of documents

	Are the portal's source code and relevant documentation and artefacts made available to the public?
EU-27	26 Member States (96 %), with **Malta** as the newest addition, report publicly sharing the portal's source code and relevant documentation.
EFTA	All participating EFTA countries report publicly sharing the portal's source code and relevant documentation.
Candidate	**Bosnia and Herzegovina** and **Serbia** report publicly sharing the portal's source code and relevant documentation.

(Question PT43)

Monitoring performance

To support ongoing improvement and track progress, national portals can evaluate key aspects of the data they host, such as the total number of datasets, their categorisation and the inclusion of real-time data, and how these elements change over time. In addition, usage statistics and performance reports offer valuable insights that can help guide future developments and justify continued investment. Table 37 presents an overview of how countries responded to the questions on this topic.

Table 37: Countries' responses to questions on monitoring performance

	Do you monitor the characteristics of the data published on the portal, such as the distribution across categories, static versus real-time data, and how these change over time?	*Does this monitoring enable the portal team and/or data providers to take action to improve their performance on the national portal?*
EU-27	25 Member States (93 %), with **Germany** as the latest addition to this group, report that they monitor the characteristics of the data published on the portal. This practice is temporarily not being carried out in **Greece** as it migrates to a redeveloped portal.	25 Member States (93 %) report that this monitoring enables the portal team and/or data providers to take action to improve their performance on the national portal.
EFTA	**Norway** reports that it monitors the characteristics of the data published on the portal.	**Norway** responded this monitoring enables the portal team to take action to improve its performance on the national portal.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they monitor the characteristics of the data published on the portal.	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that this monitoring enables the portal team and/or data providers to take action to improve their performance on the national portal.

(Questions PT44 and PT45)

Many countries have established monitoring systems to support ongoing improvements to their national portals. These frameworks often focus on assessing metadata quality, including the analysis of both general and detailed statistics across datasets. In **Spain**, for example, the portal offers both public and private dashboards to monitor performance. The public dashboard provides general indicators, such as portal visits, published datasets, reuse cases and data distribution by category or format. Publishers and administrators also have access to a private dashboard with more detailed metrics, including trends in datasets by agency, user engagement and publishing activity, helping to guide improvements and ensure data quality.

Many countries also use performance monitoring to improve portal usability. In **Italy**, for example, the portal team conducts targeted activities based on monitoring results to help individual data providers enhance the quality of their published metadata and overall portal performance. Specific guidance is offered through FAQs to address common issues, and logs from the harvesting process are shared with data providers to support corrections when needed.

5.6. Pilot indicator: automated tests of portal performance

Pilot indicator – automated tests

In addition to gathering qualitative information on portals, there are technical and quantitative methods to evaluate portals on objective metrics. Such tests can complement the insights derived from the questionnaire and extend the scope of the ODM report. As a pilot, four indicators (mobile friendliness, page speed, security and web accessibility) were measured for this year's report but did not contribute to countries' maturity score. These tests were conducted on the portal URLs listed in Table 18.

Mobile friendliness assesses how well a website adapts to mobile devices, ensuring a seamless user experience for visitors on smartphones and tablets. This indicator is operationalised through the EXPERTE mobile friendly test. In summary:

- **70 %** of all portals are mobile friendly;
- **63 %** of all EU portals are mobile friendly.

Page speed assesses a selection of speed and performance standards from Google's PageSpeed Insights. The results can be summarised as follows.

- Of all portals, **78 %** pass the **time to interactive** test. This test measures how long it takes a page to become fully interactive. Sites are considered fully interactive when (a) the page displays useful content, (b) event handlers are registered for the most visible page elements and (c) the page responds to user interactions within 50 milliseconds.
- Of all portals, **59 %** pass the **first contentful paint** test. This test measures the time from when the user first navigated to the page to when any part of the page's content is rendered on the screen. Sites should strive to have a first contentful paint of 1.8 seconds or less.
- Of all portals, **72 %** pass the **largest contentful paint** test. This test reports the render time of the largest image, text block or video visible in the viewport, relative to when the user first navigated to the page. To provide a good user experience, sites should strive to have a largest contentful paint of 2.5 seconds or less.
- Of all portals, **41 %** pass the **cumulative layout shift** test. This test measures the biggest group of unexpected layout changes that happen on a web page while it is loading. To provide a good user experience, sites should strive to have a cumulative layout shift score of 0.1 or less.

Security assesses several complementary metrics related to basic cybersecurity hygiene using the publicly available security testing tool by the Dutch national government called internet.nl. The results can be summarised as follows.

- Of all portals, **18 %** pass the **modern address (IPv6)** test. This test evaluates if the website is reachable for visitors using a modern internet address (IPv6), making it fully part of the modern internet.
- Of all portals, **26 %** pass the **domain name system security extensions** test. This test evaluates if the website's domain is signed with a valid signature, which protects against manipulated translation from the domain into rogue internet addresses.
- Of all portals, **9 %** pass the **secure connection** test. This test evaluates if information in transit between the website and its visitors is protected against eavesdropping and tampering.
- Of all portals, **3 %** pass all three tests.

Web accessibility assesses the accessibility status of websites (including for individuals with disabilities) using the open-source Axe-core tool. The accessibility criteria are based on the web content accessibility guidelines (WCAGs). The results can be summarised as follows.

- Of all portals,**73 %** pass the **alternative text (WCAG 1.1.1)** test. This test evaluates whether the website offers text alternatives for non-text content, enabling it to be transformed into

formats like large print, braille, speech, symbols or simplified language to meet diverse user needs.

- Of all portals, **60 %** pass the **colour contrast (WCAG 1.4.3)** test. This test evaluates if the visual presentation of text and images on the website has a contrast ratio of at least 4.5:1. Exceptions include cases of large text, text or images part of an inactive user interface component, and text that is part of a logo or brand name.
- Of all portals, **39 %** pass the **page/document title (WCAG 2.4.2)** test. This test evaluates if the website has titles that describe the topic or purpose.
- Of all portals, **11 %** pass the **link name (WCAG 2.4.4)** test. This test evaluates the clarity and accessibility of links on a website.
- Of all portals, **70 %** pass the **language attribute (WCAG 3.1.1)** test. This test evaluates if the primary language of each web page is specified in a way that can be identified by software, such as screen readers and search engines.
- Of all portals, **76 %** pass the **valid language code (WCAG 3.1.2)** test. This test evaluates if the correct language code, such as <html lang="en"> for English, is applied to the page.
- Of all portals, **76 %** pass the **discernible button text (WCAG 4.1.2)** test. This test evaluates if for people with visual impairments, button destination, function, purpose or action can clearly be described.
- Of all portals, **39 %** pass the **name, role, value (WCAG 4.1.2)** test. This test evaluates the accessibility and compatibility of user interface components of the website with assistive technologies.
- While no portal passes all eight tests, **Czechia**, **Estonia** and **France** stand out for passing all tests except the link name (WCAG 2.4.4) test.

5.7. Recommendations

Countries can use the following general advice to improve on the portal dimension of the ODM methodology. The recommendations are tailored to four levels of maturity, ranging from trendsetters to beginners.

Trendsetters

- Invest in the portal so that you can use new workflows and tools that enable a better understanding of your users' profiles and needs while preserving their privacy. Ensure that the portal supports community contributions, including user-submitted datasets, reuse cases and blog content.
- Evaluate options for extending the open data portal such that it serves as a public register of data altruism organisations, or advise your government on which approach would best support new initiatives in this area. Although the ODM assessment focuses on the Open Data Directive (Directive (EU) 2019/1024), open data portals can be leveraged in efforts to implement other items of EU legislation, such as the Data Governance Act (Regulation (EU) 2022/868). For example, open data portals can serve as registers for protected data held by the public sector.
- Continue improving search functionality: ensure that improvements in metadata quality translate into better discoverability of datasets, and leverage new tools such as those powered by AI to improve search functionality with the existing quality of metadata.
- After establishing an effective system for annotating and filtering HVDs on the portal, focus on maintaining this system and regularly monitoring dataset usage.
- Reach out to and cooperate with other countries to develop solutions to common challenges, including basic, reusable elements such as open-source software that your platforms share (e.g. portal extensions).

Fast-trackers

- Monitor portal usage and seek to understand user profiles to guide improvements. Add features that support interaction between publishers and reusers.
- Enhance the national portal's promotion of HVDs by adding advanced filtering options, allowing users to navigate and explore datasets across the six HVD categories.
- Strengthen support for real-time data publication by identifying key data holders and addressing technical or resource barriers. Promote the publication of data beyond the minimum requirements specified by law.

Followers

- Regularly update the portal to reflect user needs. Include features such as dataset-level feedback, login areas, SPARQL access and APIs.
- Use editorial tools like tags and labels to highlight HVDs and enable filtering. Create a dedicated section for HVDs with updates and explanations.
- Promote reuse cases more prominently, ideally on the home page, and encourage the community to share their examples.
- Analyse portal usage to better understand user behaviour and improve engagement.
- Identify data holders who are not publishing and work to address barriers. Support the publication of real-time data.

Beginners

- Develop a national open data strategy that includes clear provisions for portal development, management and funding. Use action plans to establish responsibilities and ensure follow-through.
- Ensure that the portal supports basic functionality for publishing and discovering datasets. Look to European best practices when selecting technology and features.
- Integrate feedback channels into the portal and ensure that they are easy to use. Be mindful of privacy when implementing analytics tools.
- Create dedicated sections for news and reuse stories to raise awareness and showcase value.
- Begin promoting HVDs by adding a section that explains their significance and gradually labelling relevant datasets to increase their visibility and encourage reuse on the portal.

Chapter 6: Open data quality

The quality of data refers to how accurate, complete, consistent, timely and usable a dataset is. Preparing high-quality data includes dealing with missing values and other inaccurate elements, harmonising data structures and making the data available in accessible formats. Data quality also depends on the quality of its deployment on national portals, which can be assessed by looking at the use of aspects such as open data licences, machine-readable data formats, unique resource identifiers (a character sequence that identifies a dataset) and a linked data approach (a set of design principles for relating datasets to one another).

In addition to the data itself, high-quality data is accompanied by good descriptions. Such descriptive data is called metadata and gives information about the dataset, such as author, date and keywords. Specifications define the structure and content of metadata descriptions and aim to make public sector data more easily searchable across borders and sectors. In particular, the Data Catalogue Vocabulary – Application Profile (DCAT-AP) is designed to describe public sector datasets in Europe and is, therefore, the reference specification in the open data maturity (ODM) assessment methodology. The recent DCAT-AP-HVD extension further enhances these specifications to support the description of high-value datasets (HVDs) across Europe.

High-quality data has greater value because it is more easily discoverable, accessible, interoperable and reusable – aligning with the FAIR principles (findable, accessible, interoperable and reusable). This value comes from characteristics such as being easier for reusers to analyse and visualise. Consistent and well-documented formats and metadata improve discoverability and interoperability, while clear licensing and structured descriptions ensure accessibility and legal reuse. High-quality metadata further supports these principles by helping search engines match dataset descriptions to user queries, making data easier to find and correctly interpret.

The **quality** dimension of the ODM assessment encourages national portals to publish datasets with high-quality data and metadata. The ODM methodology emphasises metadata quality, not only because national portals rely on it to make datasets discoverable and support metadata harvesting, but also because it ensures interoperability, reusability, compliance with standards and effective data management. The methodology also evaluates whether portal managers offer guidance and processes that enable and incentivise data publishers to provide high-quality data.

In brief, the quality dimension assesses the measures adopted by portal managers to ensure the systematic and timely harvesting of metadata and the monitoring mechanisms in place to ensure the publication of metadata that is compliant with the DCAT-AP metadata standard and several deployment quality requirements. Table 38 summarises the key elements of the quality dimension.

Table 38: Indicators of the quality dimension

Indicator	Key elements
Metadata currency and completeness	This indicator assesses whether metadata is kept current and complete. It looks at systematic approaches for timely updates, automation of harvesting and minimal delay between source changes and portal updates. It also considers coverage of historical and contemporary data and measures to ensure interoperability of HVDs across countries.
Monitoring and measures	This indicator explores how metadata quality and licensing compliance are monitored. It considers whether mechanisms track quality and if results are published. It also looks at standards for metadata and licences, guidelines for providers and support activities to help them publish high-quality metadata and choose appropriate licences.
DCAT-AP compliance	This indicator evaluates adherence to the DCAT-AP standard. It looks at compliance with mandatory, recommended and optional classes, and whether guidelines and tools assist providers. It also considers the existence of national DCAT-AP extensions, monitoring of compliance and efforts to address common gaps.
Deployment quality and linked data	This indicator assesses the quality of data and metadata deployment. It considers whether models such as the 5-star open data model or FAIR principles are used, the share of datasets meeting open and machine-readable standards, and the use of structured licences. It also looks at linking practices, including the use of uniform resource identifiers and connections to other data sources.

This chapter will first present overall performance in the quality dimension and then provide a summary of the results and best practices for each indicator.

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6.1. Overall performance in the quality dimension

The quality dimension is the third most mature dimension of the ODM assessment according to the EU-27 average in 2025 (Figure 14) The average maturity of EU Member States in the quality dimension is 83 %. This is a 4-percentage-point (pp) increase from 2024, primarily driven by a 7-pp increase in the 'metadata currency and completeness' indicator and a 4-pp increase in the 'deployment quality and linked data' indicator. The 'DCAT-AP compliance' (+3 pp) and the 'monitoring and measures' (+2 pp) indicators also increased. Overall, 19 countries score above the EU average, with 10 achieving 90 % or higher.

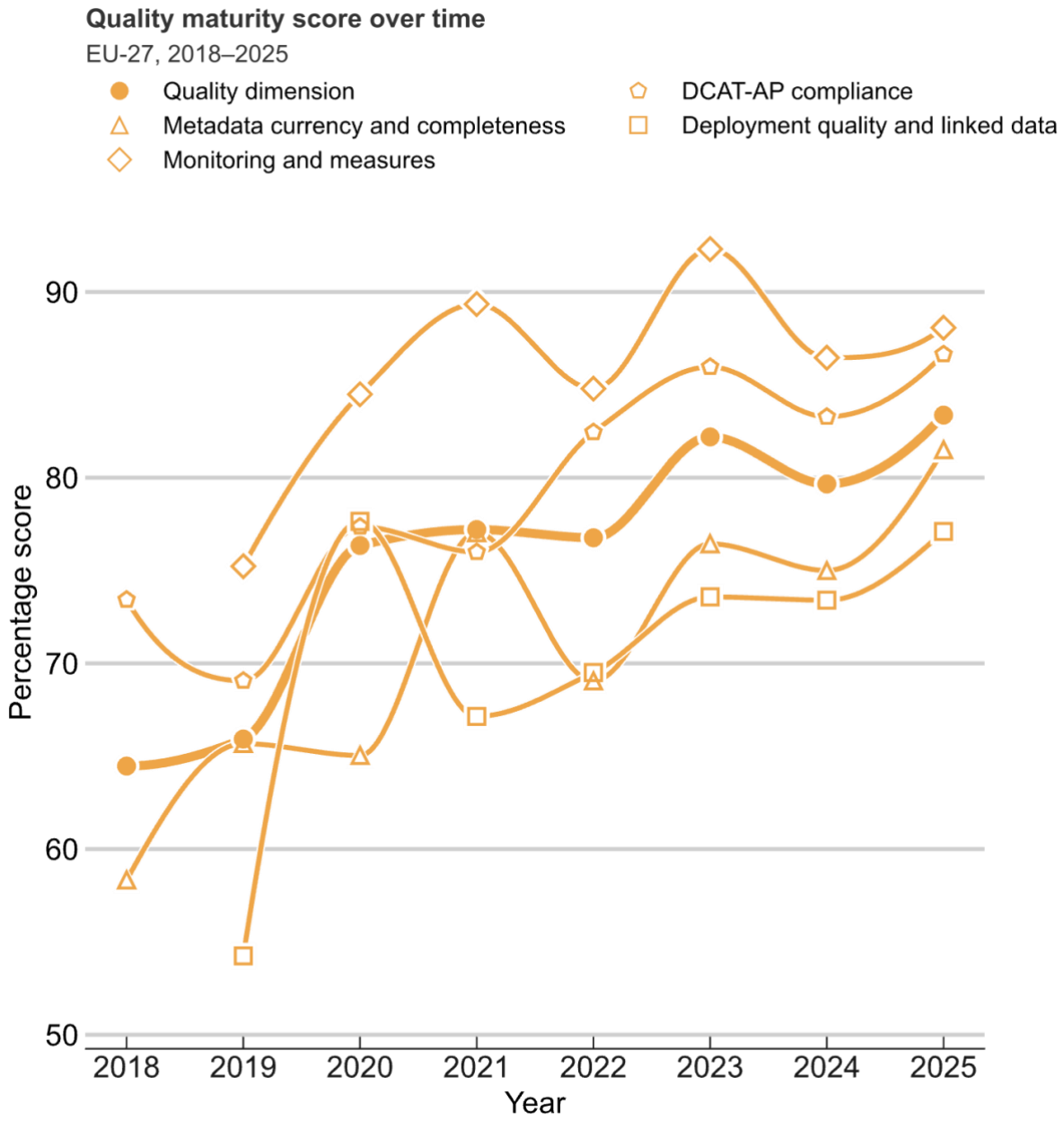

Figure 14: The EU-27 average score in the quality dimension experienced the largest year-on-year increase among the four dimensions.

France (100 %) maintains its position as the most mature country in the quality dimension (Figure 15). **Latvia** (95 %) and **Ukraine** (94 %) hold second and third place.

Latvia and **Ukraine** both achieve full maturity (100 %) in the 'monitoring and measures' indicator, meaning they have strong mechanisms to check metadata quality and ensure correct licensing, along with support measures for data providers. Meanwhile, **Denmark**, **Lithuania** and **Ukraine** achieve full maturity (100 %) in the 'DCAT-AP compliance' indicator, demonstrating that they monitor adherence to the DCAT-AP standard and provide clear guidelines and training to help data providers comply.

Highlight from France – technical integration for DCAT-AP

One of the key challenges highlighted in this year's report for DCAT-AP compliance is technical integration from diverse systems.

France has taken extensive measures to guarantee that its national catalogue exposes correct DCAT-AP descriptions of datasets, particularly in the context of HVD reporting. The first approach involved leveraging the Semantic Interoperability Community (SEMIC) ISO 19139 to DCAT-AP Extensible Stylesheet Language Transformations (XSLT) as the main interoperability solution for harvesting metadata from decentralised or thematic geographical platforms. This required in-depth studies of common issues, such as licences, data services, contact points and other responsible parties, which were addressed either at the metadata level or during harvesting.

To ensure proper interpretation by the European Data Portal (data.europa.eu), France validated its DCAT-AP exposition using SPARQL (SPARQL Protocol and RDF Query Language), reporting endpoints to list required metadata fields. This process revealed inconsistencies in the national catalogue's exposition, which have since been corrected, strengthening compliance and interoperability.

This proactive approach demonstrates how systematic validation and iterative improvements can significantly enhance the accuracy and reliability of DCAT-AP metadata across national catalogues. Read more about this trend in **Section 6.4**.

Albania (+61 pp), **Malta** (+31 pp) and **Greece** (+16 pp) demonstrated the greatest year-on-year improvement in the quality dimension.

Albania's major improvement can be attributed to substantial progress in the 'DCAT-AP compliance' indicator (+100 pp), 'deployment quality and linked data' (+70 pp) and 'monitoring and measures' indicator (+66 pp). These substantial increases can be attributed to a comprehensive redevelopment of their open data portal over the past year.

Highlight from Albania – DCAT-AP by design

Albania achieved a marked improvement in DCAT-AP compliance by fully redeveloping its national open data portal. The new platform was designed using best practices from leading portals, notably the European Data Portal (data.europa.eu), and includes the following.

- **Structured metadata collection:** a redesigned management panel enables data providers to submit datasets via a user-friendly form that captures all required DCAT-AP fields. Metadata such as title, access rights, licence, format and publisher details are either mandatory or auto-inferred (e.g. media type, file size).
- **Automated metadata generation and validation:** upon submission, the system automatically generates DCAT-AP-compliant metadata. Validation is performed using a nationally developed metadata quality assurance (MQA) methodology, modelled on the MQA from the European Data Portal, to ensure consistency and conformance.
- **Legacy data migration:** all datasets from the previous portal were migrated and their metadata regenerated to align with DCAT-AP standards.

These initiatives led to Albania's open data portal achieving over 90 % compliance with DCAT-AP standards across mandatory, recommended and optional classes.

Read more about other countries' DCAT-AP compliance in Section 6.4.

Malta's increase in its score on the quality dimension can be attributed to its 48-pp increase in the 'DCAT-AP compliance' indicator, which they credit to a new version of their national portal that focuses more on DCAT-AP standards. Additionally, Malta saw a 32-pp increase in the 'metadata currency and completeness' indicator, which can be attributed to the implementation of DCAT-AP HVD tags, new efforts to ensure that published data covers a complete time series and an increase in the percentage of metadata obtained automatically from the source, among other improvements.

Highlight from Malta – guidance for high-quality metadata

One of the key practices highlighted in this year's report is the publication of manuals and handbooks that help data owners produce high-quality metadata.

Malta ensures that data publishers receive clear, practical guidance through multiple methods.

- **Helper text in the publishing form:** when creating or amending a dataset, data owners see a brief description under each metadata field, explaining what information is expected.
- **Publisher user guide:** a comprehensive guide is available to assist data owners in publishing datasets correctly and independently.

These measures enable data owners to provide accurate metadata and maintain consistency across the national portal.

Read more about this trend in Section 6.3.

Greece's increase in its score in the quality dimension can be attributed to its 30-pp increase in the 'deployment quality and linked data' indicator and an 18-pp increase in the 'DCAT-AP compliance' indicator. The notable rise in the 'deployment quality and linked data' indicator can be attributed to a new portal being implemented, which has improved the openness, structure and interoperability of its public datasets, along with its DCAT-AP compliance.

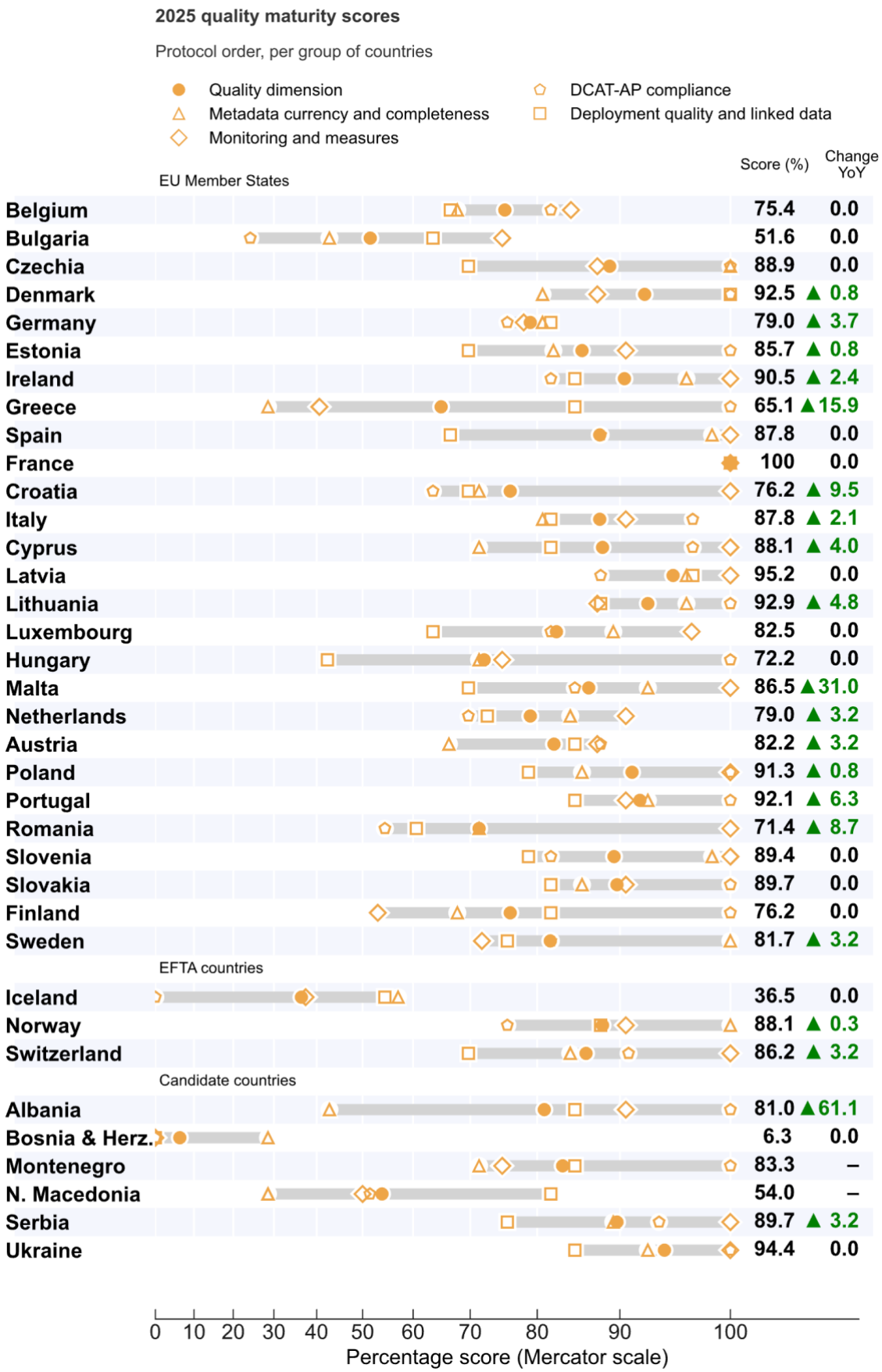

Figure 15: The scores of the majority of countries increased in the quality dimension in 2025. NB: EFTA = European Free Trade Association, YoY = year on year.

6.2. Metadata currency and completeness

This indicator assesses the extent to which countries systematically ensure that their data and metadata are up to date. The indicator also investigates automatic harvesting processes, which ensure that changes at the data source are reflected with as little delay as possible on the portal where the dataset is made discoverable. Furthermore, the completeness of data that has a time component and preparations to ensure that HVDs are interoperable with other datasets on the portal are also evaluated by this indicator.

Currency of metadata

Metadata plays a crucial role in enhancing the usability and reliability of open data, and its timely update is essential for maintaining data relevance and accuracy. A predefined approach to ensuring that metadata remains up to date involves implementing systematic processes and mechanisms tailored to the specific characteristics and update frequency of different datasets. Table 39 presents an overview of how countries responded to the questions on this topic.

Table 39: Countries' responses to questions on the currency of metadata

	Is there a predefined approach to ensure that metadata is kept up to date?	*What percentage of the metadata on the national portal is obtained from the source automatically rather than edited manually?*	*What is the average delay from when the metadata describing a dataset is updated at the source to when the change is visible on the portal?*
EU-27	Twenty-six Member States (96 %), **all except Bulgaria**, report having a predefined approach to ensuring that metadata is kept up to date. This has remained stable since 2024.	Five Member States (19 %) report that 100 % of the metadata on their national portals is obtained automatically from the source. Seven Member States (26 %) indicate that at least 90 % of their metadata is sourced automatically, while five Member States (19 %) report that at least 70 % of their metadata is sourced automatically.	Twenty-one Member States (78 %), with the recent addition of **Croatia** and **Romania**, report that the average delay from when the metadata describing a dataset is updated at the source to when the change is visible on the portal is less than one day. Five Member States (19 %) indicate that this delay is typically less than one week. **Greece** reports that the average delay can extend beyond one month.
EFTA	All three participating EFTA countries report having a predefined approach to keeping metadata up to date. This has remained stable since 2024.	**Norway** reports that 100 % of its national portal is obtained automatically from the source. **Switzerland** reports that at least 90 % of the metadata on its national portal is obtained automatically	Like in 2024, **Norway** and **Switzerland** report that the average delay in updating metadata from the source is less than one day. **Iceland** reports that

	Is there a predefined approach to ensure that metadata is kept up to date?	*What percentage of the metadata on the national portal is obtained from the source automatically rather than edited manually?*	*What is the average delay from when the metadata describing a dataset is updated at the source to when the change is visible on the portal?*
		from the source. **Iceland** reports that this figure is less than 30 % of the metadata.	this delay can extend beyond one month.
Candidate	**Albania**, **Serbia** and **Ukraine** report having a predefined approach to keeping metadata up to date. This has remained stable since 2024.	**Ukraine** reports that at least 50 % of the metadata on its national portal is obtained automatically from the source. **Serbia** indicates that this figure is at least 30 %, while **Albania**, **Bosnia and Herzegovina**, **Montenegro and North Macedonia** report that less than 30 % is sourced automatically.	**Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that the average delay in updating metadata from the source is less than one day. **Albania** and **Bosnia and Herzegovina** report that this delay can extend beyond one month.

(Questions Q1, Q2 and Q3)

Legal frameworks and regulatory requirements are frequently cited by countries such as **Estonia**, **Cyprus**, **Latvia** and **Slovenia** as the basis for their predefined approach to updating metadata. In many cases, designated open data personnel and portal administrators oversee quality by conducting regular checks and notifying publishers of discrepancies. By contrast, countries including **Greece**, **Lithuania**, **Serbia**, **Slovenia**, **Spain** and **Switzerland**, joined in 2025 by **Malta**, **Romania** and **Finland**, report that updates largely depend on data publishers, who determine the frequency for updating metadata.

In 2025, more countries report implementing DCAT-AP in their predefined approach for ensuring metadata is kept up to date. DCAT-AP provides a common metadata structure that includes properties for update information, such as last modification date and update frequency. While these fields are recommended or optional, their use supports better maintenance and interoperability of metadata across data portals. This standardisation enables automated validation, harvesting and synchronisation across portals, reducing manual effort and preventing out-of-date records. For example, the **Netherlands** reports implementing DCAT-AP-NL 3.0 with daily metadata checks and published validation guidance, and **Norway** recommends DCAT-AP nationally and supports harvesting to capture changes from local catalogues. Additionally, **Lithuania** has extended DCAT-AP to include temporal and spatial metadata types, enabling the system to identify and maintain coverage for these dimensions. While this does not inherently trigger automatic updates, it supports portal-level features such as automated checks and user notifications when datasets fall behind schedule.

Similar to the previous assessment, most countries rely on **automated harvesting systems** as a means to keep metadata up to date, often by utilising daily job schedulers. Some countries adopt a hybrid approach that combines automated harvesting with targeted manual checks, often for smaller data providers or to resolve discrepancies.

Completeness of metadata

Having complete and up-to-date data is important, since reuse cases may require historical or current data to be feasible and impactful. How current this data needs to be depends on what the data is about. Datasets that represent phenomena that change in real time, such as weather or traffic data, should be updated close to real time to enable complex applications. For other datasets, a different frequency of updates may be appropriate. Gaps in a time series can also negatively affect the usability of datasets. Table 40 presents an overview of how countries responded to the question on this topic.

Table 40: Countries' responses to the question on the completeness of metadata

	Do you undertake efforts to ensure that published data covers the full period from when it was first published?
EU-27	Twenty-three Member States (85 %) report undertaking efforts to ensure that published data covers the complete time series. **Malta**, **Romania** and **Sweden** are the most recent additions to this group.
EFTA	**Iceland** and **Norway** report undertaking efforts to ensure that published data covers the complete time series. This has remained stable since 2024.
Candidate	**Montenegro**, **Serbia** and **Ukraine** report undertaking efforts to ensure that published data covers the complete time series.

(Question Q4)

Regular monitoring, auditing and validation processes remain common methods to ensure that datasets cover the full time series. Countries such as **Bulgaria**, **Estonia**, **Hungary** and **Serbia** continue to report monitoring systems managed by portal editors or national teams, while **Luxembourg** actively engages with data producers to incorporate historical time-series data. Many countries also provide direct support and guidance to publishers to maintain data integrity across time periods. The use of the dcat:temporal attribute within the DCAT-AP standard, as noted by **Denmark** and **Slovakia**, remains an important practice to document temporal scope, especially when datasets are discontinued, and automation continues to be applied in some cases to prevent time gaps, as seen in **Latvia**, **Portugal** and **Slovakia.**

Building on these ongoing practices, in 2025 several enhancements were reported. Countries such as **Czechia**, **Germany**, **Lithuania** and **Sweden** adopted DCAT-AP 3.0 profiles and dataset series structures, making temporal coverage more systematic and reducing ambiguity in how time spans are represented. Automation now goes beyond updating datasets to include compliance nudges, such as **Lithuania's** automated notifications when updates are overdue. **Sweden** introduced functionality to assess metadata quality using the MQA method. Some countries have also introduced measures to improve historical completeness: **Lithuania** and **Romania** now explicitly encourage retrospective backfilling of historical data.

Interoperability of high-value datasets

The DCAT-AP annotation for HVDs can help denote HVDs, making it easier for users to identify and access them. Moreover, by adhering to this standard, national portals can ensure that their datasets are interoperable with those from other countries. Such interoperability is key to unlocking the full potential of the data, enabling more comprehensive analyses. By including the European Legislation Identifier (ELI) reference of the HVDs' Commission Implementing Regulation (EU) 2023/138 and the relevant HVD categories, portals can support automatic harvesting, grouping and meaningful

exploration of datasets. Table 41 presents an overview of how countries responded to the questions on this topic.

Table 41: Countries' responses to questions on the interoperability of HVDs

	Have you implemented the DCAT-AP HVDs tag to denote HVDs in your portal?	*Besides the DCAT-AP tag, have you implemented any other measures to ensure that HVDs are interoperable with datasets from other countries?*
EU-27	Twenty-one Member States (78 %) report that they have implemented the DCAT-AP HVDs tag in their (national) open data portal(s). **Malta**, the **Netherlands**, **Austria** and **Portugal** are recent additions to this group.	Twenty-two Member States (81 %), with the recent addition of **Germany**, report that they have implemented other measures to ensure that HVDs are interoperable with datasets from other countries.

(Questions Q5 and Q6)

NB: Non-EU countries were not surveyed on this question as Commission Implementing Regulation (EU) 2023/138 on HVDs applies only to Member States.

DCAT-AP for HVDs implementation continues to progress across Member States, building on developments that were already established. In 2025, more Member States continued to implement DCAT-AP for HVDs, with **Luxembourg**, **Malta**, the **Netherlands**, **Austria** and **Portugal** newly confirming their adoption of DCAT-AP HVD annotations. Beyond the continued expansion of HVD tagging, 2025 saw targeted improvements in how countries manage HVD tagging and related metadata practices. Several Member States enhanced visibility and discoverability of HVDs: **Lithuania**, **Luxembourg**, **Malta** and **Portugal** introduced or maintained filters and tags for HVD datasets, while **Sweden** added functionality to filter datasets by category and developed SPARQL queries to monitor HVD metadata. **Lithuania** also implemented automated update reminders through its 'Tasks' notification feature, supporting ongoing data maintenance. On the technical side, **Germany** adapted its geo-ISO converters and extended its Comprehensive Knowledge Archive Network (CKAN) to enable correct HVD handling and export, ensuring alignment with the European Data Portal.

In addition to using DCAT-AP HVD annotations, Member States continue to promote interoperability through measures such as direct coordination with data producers in other countries, encouraging standard licences and formats, and developing APIs (application programming interfaces). **Germany** and **Italy** upgraded their CKAN-based portals to improve metadata handling, while **Portugal** implemented DCAT-AP HVD tagging and exposed metadata through a dedicated catalogue endpoint. In addition, **Lithuania** and **Portugal** are applying EU concept schemes and tagging datasets with both HVD status, which indicates that a dataset is officially designated as an HVD under the EU Open Data Directive, and HVD category, which specifies the thematic area (e.g. Geospatial, Mobility or Earth Observation) based on the EU classification scheme, to ensure consistent classification across portals. In addition, DCAT-AP requires the dct:applicableLegislation property for HVDs, which must include the ELI reference to Commission Implementing Regulation (EU) 2023/138. This ensures that each dataset explicitly links to the legal act defining its HVD status.

6.3. Monitoring and measures

This indicator assesses the extent to which mechanisms are in place to evaluate and improve metadata quality and its compliance with licensing standards. Moreover, the indicator looks at the support, guidelines and tools available to assist data publishers in publishing high-quality metadata and choosing the correct licence type for their data.

Monitoring the quality of metadata on portals

Monitoring metadata quality is important for ensuring datasets are discoverable, well documented and usable by stakeholders. From manual reviews to automated systems, countries use a range of methods to ensure compliance with standards. Dashboards and reports are effective tools for monitoring and visualising metadata quality, and providing public access to these resources enhances transparency and accountability. Table 42 presents an overview of how countries responded to the questions on this topic.

Table 42: Countries' responses to questions on monitoring the quality of metadata

	Do you monitor the quality of the metadata available on your portal?	*Do you publish information on the quality of the metadata available on the portal?*
EU-27	Twenty-six Member States (96 %), **all except Finland**, report monitoring the quality of metadata available on their portals. This has remained stable since 2024.	Twenty-two Member States (81 %) report that they publish information on the quality of metadata available on their portals. This has remained stable since 2024.
EFTA	All three participating EFTA countries report monitoring the quality of metadata available on their portals. This has remained stable since 2024.	**Norway**, along with the recent addition of **Switzerland**, report publishing information regarding the quality of metadata available on their national portal.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report monitoring the quality of metadata available on their portals.	**Ukraine**, along with the recent addition of **Albania** and **Serbia**, report publishing information on the quality of metadata available on their portal.

(Questions Q7 and Q8)

Countries continue to rely on automated systems to ensure metadata quality, but 2025 shows a shift towards more structured and enforceable approaches. **Spain** and **Switzerland's** portals have introduced formal validation mechanisms like shapes constraint language (SHACL)-based checks, while others, including **Latvia**, **Malta**, **Slovenia** and **Slovakia**, now apply gating rules that prevent publication of datasets with incomplete metadata. Publicly accessible metadata quality dashboards have also become more common, with **Albania**, **France**, **Serbia** and **Switzerland** being the most recent countries to openly provide such information to individuals. Furthermore, while manual reviews remain part of the process in some cases, the overall trend is towards automated validation combined with greater transparency.

Setting metadata standards and licensing requirements

Metadata serves as a foundational layer that describes the content, context and structure of datasets, enabling users to discover and utilise data effectively. Ensuring the quality of metadata is essential for fostering findability, interoperability and effective data sharing. Countries often set various standards and guidelines that organisations must implement to govern metadata quality and ensure the usability and reliability of open data. Licensing is a common way to govern open data and relevant metadata quality. Without a licence, data may be publicly available, but reusers will not have certainty about what permissions they have to access, use, change or share the data under copyright or database laws. Table 43 presents an overview of how countries responded to the questions on this topic.

Table 43: Countries' responses to questions on metadata standards and licensing requirements

	Do you set any standards on metadata quality that data providers must abide by?	*Do your open data publication or licensing guidelines recommend using CC licences?*	*What percentage of the open data available on the national portal is accompanied by licensing information?*	*How many different licences are used on your portal?*
EU-27	All Member States, with the recent addition of **Greece**, report that they set standards on metadata quality that data providers must abide by.	Like in 2024, 25 Member States (93 %), **all except Greece** and **Hungary**, report that their publication or licensing guidelines provide recommendations for using CC licences.	Twenty-two Member States (81 %) report that more than 90 % of their datasets have licensing information. This includes the most recent addition of **Croatia**.	Fifteen Member States (56 %) report having one to four licences on their portal. Only **Belgium**, **Czechia** and **Sweden** report having more than 10 licences on their portals.
EFTA	**Switzerland**, and the most recent addition of **Norway**, report that they set standards on metadata quality that data providers must abide by.	All three participating EFTA countries report that their publication or licensing guidelines provide recommendations for using CC licences. This has remained stable since 2024.	**Norway** and **Switzerland** report that over 90 % of their datasets have licensing information. This has remained stable since 2024.	**Iceland** and **Switzerland** report having one to four licences on their portal. **Norway** reports having between five to ten.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that they set standards on	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that their publication or licensing guidelines provide	**Albania**, **North Macedonia**, **Montenegro**, **Serbia** and **Ukraine** report that more than 90 % of their datasets have licensing information.	**Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report having one to four licences on their portal. **Albania**

	metadata quality that data providers must abide by.	recommendations for using CC licences.		reports having five to ten.

(Questions Q10, Q11, Q12 and Q13)

Many countries mandate the use of DCAT-AP, for example by stating that portals **must comply** with the specification or by defining mandatory fields in their national profiles. However, others such as **Ireland**, **Greece** and **Spain** emphasise compatibility rather than strict obligations, where DCAT-AP is framed as a benchmark for quality assessment or as part of an evolving standard (e.g., Spain's Technical Interoperability Standard for Reuse of Public Sector Information; NTI-RISP). **Cyprus** and **Luxembourg** enforce compliance through national profiles that extend DCAT-AP, which even go beyond the EU baseline by adding stricter or additional mandatory fields.

Countries also continue to mandate CC BY 4.0 or CC0 through strategies or laws, with this year's developments showing a move towards more formal legal instruments and operational enforcement in specific countries. For example, **Albania** and **Montenegro** now require the use of CC licences by law, with Albania specifically mandating CC BY 4.0.

Support activities for data providers

Activities to support data providers with publishing high-quality data can take many forms. Documents, tools, training and tailored guidance are common methods that countries use to ensure publishers supply high-quality datasets. Table 44 presents an overview of how countries responded to the questions on this topic.

Table 44: Countries' responses to questions on support for data providers

	Do you publish guidelines and have tools to assist publishers in publishing high-quality metadata?	*Besides providing guidelines, are regular activities conducted or mechanisms in place to assist publishers in supplying high-quality datasets?*
EU-27	Twenty-five Member States (93 %), with the recent addition of **Croatia** and **Malta**, report that they publish guidelines and have tools in place to assist publishers in publishing high-quality metadata.	Twenty-three Member States (85 %), with the recent addition of **Malta**, report that they conduct regular activities or have mechanisms in place to assist publishers in supplying high-quality datasets.
EFTA	**Norway** and **Switzerland** report that they publish guidelines and have tools in place to assist publishers in publishing high-quality metadata. This has remained stable since 2024.	**Norway** and **Switzerland** report that they conduct regular activities or have mechanisms in place to assist publishers in supplying high-quality datasets. This has remained stable since 2024.

	Do you publish guidelines and have tools to assist publishers in publishing high-quality metadata?	*Besides providing guidelines, are regular activities conducted or mechanisms in place to assist publishers in supplying high-quality datasets?*
Candidate	**Serbia**, **Ukraine** and the recent addition of **Albania** report that they publish guidelines and have tools to assist publishers in publishing high-quality metadata.	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that they conduct regular activities or have mechanisms in place to assist publishers in supplying high-quality datasets.

(Questions Q9 and Q14)

Countries continue to publish manuals and handbooks that include information on publishing high-quality metadata, with **Croatia** and **Malta** as the most recent additions.

Another continued trend in 2025 is the practice of providing tailored, direct assistance to data providers, helping them address specific challenges. This can be particularly effective because it allows for real-time feedback, clarification of standards and hands-on guidance, which can be more impactful than general documentation or training alone. For example, **France**, **Latvia**, **Poland** and **Romania** offer personalised help through one-on-one consultations. **Spain** expanded its efforts significantly, conducting over 700 support interactions with 159 organisations, while **Ukraine** implemented a moderation system that reviews datasets before they go live, complemented by a WhatsApp support channel for immediate assistance.

Several countries have also advanced their support for high-quality datasets and metadata publishing through more interactive and intelligent systems. Namely, **Malta** describes a foundational and interoperable data layer, including secure APIs, to help publishers access and share linked data. **France** redesigned its portal interface to offer contextual guidance, quality indicators and real-time feedback during dataset publication. **Lithuania** reports using a ranking system based on the 5-star open data model to motivate improvements in dataset quality. In addition, **Albania** and **France** are the newest countries to report utilising real-time metadata quality scoring tools, enabling publishers to assess and improve their metadata before publication.

Highlight from Albania – creating a management portal for data providers
Albania provides tools and functionalities to assist data publishers in ensuring high-quality metadata. They have implemented a dedicated management portal, available at https://admin.opendata.gov.al, where data providers can log in using their Entra ID credentials managed by the National Agency for Information Society. Within this portal, the publishing module includes a simple and intuitive form that guides users through the process of entering dataset metadata. Key fields such as category, licence, media type and file type are either mandatory or controlled, helping to ensure consistency and compliance with DCAT-AP standards.

6.4. DCAT-AP compliance

DCAT is a World Wide Web Consortium standard designed to facilitate interoperability between data catalogues published online. DCAT-AP is an application profile of DCAT, developed by the European Commission to improve interoperability and foster the discoverability and reuse of open data across European catalogues. The 'DCAT-AP compliance' indicator assesses the extent to which metadata on national portals complies with the DCAT-AP standard for describing public sector datasets and what efforts are taken to assist data publishers in following DCAT-AP.

Creating a framework for DCAT-AP compliance

Having a standardised way to describe datasets helps ensure that data catalogues from different organisations or regions are interoperable. Consequently, many national portals adopt the DCAT-AP framework or align their standards with it to enable the seamless integration and exchange of metadata. Many countries have created national extensions of DCAT-AP to tailor the general framework to their specific needs, enhancing its relevance and functionality for their contexts. Table 45 presents an overview of how countries responded to the questions on this topic.

Table 45: Countries' responses to questions on creating a framework for DCAT-AP compliance

	Does the national portal follow the DCAT-AP framework or, if not, are standards in place to ensure interoperability with DCAT-AP?	*Is there a national extension of the DCAT-AP standard developed for your country?*
EU-27	Twenty-six Member States (96 %), **all except Bulgaria**, report that their national portals follow the DCAT-AP framework or ensure interoperability with DCAT-AP. **Greece** and **Malta** are the most recent additions to this group.	Seventeen Member States (63 %) report having a national extension of the DCAT-AP standard. **Luxembourg** and **Portugal** are the most recent additions to this group.
EFTA	**Norway** and **Switzerland** report that their national portals follow the DCAT-AP framework or ensure interoperability with DCAT-AP. This has remained stable since 2024.	**Norway** and **Switzerland** report having a national extension of the DCAT-AP standard. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that their national portals follow the DCAT-AP framework or ensure interoperability with DCAT-AP.	None of the participating candidate countries report having a national extension of the DCAT-AP standard. This has remained stable since 2024.

(Questions Q15 and Q19)

Countries continue to ensure DCAT-AP compliance by using platforms or plug-ins with built-in support for the standard. For example, **Montenegro** now uses the CKAN extension ckanext-dcat for their portal. Others maintain compliance by enforcing metadata structure and exporting metadata in DCAT format, a method now adopted by **Malta**, which uses Turtle syntax and mandatory fields in its portal. Legal and policy-based enforcement also remains a common approach, with **Romania** continuing this trend by mandating DCAT-AP through national legislation and preparing for the 3.0 update. Technical

enforcement through structured metadata requirements is further reflected in **Lithuania**, which uses an extended DCAT standard and requires valid metadata for publication.

Compliance with the DCAT-AP specifications

DCAT-AP has various metadata properties that can be used to describe data. As a specification, DCAT-AP defines a hierarchy of properties, grouped as classes, that are mandatory, recommended or optional. Table 46 presents an overview of how countries responded to the questions on this topic.

Table 46: Countries' responses to questions on compliance with DCAT-AP specifications

	What is the percentage of metadata on your portal that is DCAT-AP compliant in terms of mandatory classes?	*What is the percentage of metadata on your portal that uses DCAT-AP recommended classes?*	*What is the percentage of metadata on your portal that uses DCAT-AP optional classes?*
EU-27	Twenty-five Member States (93 %), with the recent addition of **Italy** and **Malta**, report that more than 90 % of their portals' metadata complies with DCAT-AP's mandatory classes.	Twenty-one Member States (78 %), with the most recent addition of **Italy**, report that more than 90 % of the metadata on their portals follows DCAT-AP's recommended classes.	Seventeen Member States (63 %), with the most recent addition of **Denmark**, report that more than 90 % of the metadata on their portals follows DCAT-AP's optional classes.
EFTA	**Norway** and **Switzerland** report that more than 90 % of the metadata on their portals is compliant with DCAT-AP's mandatory classes. This has remained stable since 2024.	**Norway** and **Switzerland** report that more than 90 % of the metadata on their portals follows DCAT-AP's recommended classes. This has remained stable since 2024.	**Switzerland** reports that at least 50 % of the metadata on its portal follows DCAT-AP's optional classes. For **Norway**, this percentage is at least 30 %, and for **Iceland**, it is less than 10 %. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report that more than 90 % of the metadata on their portals is compliant with DCAT-AP's mandatory classes.	**Albania**, **Montenegro** and **Ukraine** report that more than 90 % of the metadata on their portals follows DCAT-AP's recommended classes.	**Albania**, **Montenegro** and **Ukraine** report that more than 90 % of the metadata on their portals follows DCAT-AP's optional classes.

(Questions Q16, Q17 and Q18)

Investigating the common causes of non-compliance can help national portals to develop strategies to help data providers improve the quality of their metadata. Table 47 presents an overview of how countries responded to the question on this topic.

Table 47: Countries' responses to the question on non-compliance with the DCAT-AP standard

	Do you investigate the most common causes of the lack of DCAT-AP compliance?
EU-27	Twenty Member States (74 %), with **Malta** as the most recent addition, report investigating the most common causes of the lack of DCAT-AP compliance.
EFTA	**Switzerland**, and the most recent addition of **Norway**, report investigating the most common causes of the lack of DCAT-AP compliance.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report investigating the most common causes of the lack of DCAT-AP compliance.

(Question Q20)

In 2025, a lack of training, awareness or expertise on the standard continues to be the most common cause of non-compliance with DCAT-AP. Countries such as **Malta**, **Montenegro**, and **Romania** are the most recent to cite that data owners and publishers often lack understanding of DCAT-AP requirements, leading to incomplete or incorrect metadata.

Outdated or unmanaged metadata also continues to be a significant barrier to DCAT-AP compliance. **France** and **Norway** specifically report that older dataset descriptions, created before DCAT-AP standards were widely adopted or understood, have not been properly updated. These legacy records often lack mandatory properties or use incorrect ones, contributing to persistent non-compliance.

The complexity of technical integration from diverse systems also remains a recurring cause of non-compliance. In 2025, **France** highlights a more nuanced aspect of technical integration: the difficulty of ensuring DCAT-AP compliance when harvesting metadata from decentralised platforms. Even when platforms support DCAT-AP, inconsistencies in implementation and exposure methods (e.g. SPARQL endpoints, XSLT) can lead to non-compliant metadata being ingested into national catalogues. This reflects a growing complexity in maintaining metadata quality across distributed systems.

6.5. Deployment quality and linked data

This indicator examines the extent to which countries use a model, such as the Berners-Lee 5-star open data model or the FAIR principles, to assess the quality of data deployment. This indicator also assesses the extent to which data is available under an open licence, in structured and machine-readable formats, with URIs and links to other data sources.

Use of models for deployment quality

A model for assessing data deployment is important because it enables national portal teams to systematically and adaptively judge whether a dataset is more or less likely to be reused, given the quality it offers portal users. Table 48 presents an overview of how countries responded to the question on this topic.

Table 48: Countries' responses to the question on the use of models for deployment quality

	Do you use a model to assess the quality of deployment of data in your country?
EU-27	Twenty-four Member States (89 %), **all except Bulgaria**, **Hungary** and the **Netherlands**, report using a model to assess the quality of deployment of data. This has remained stable since 2024.
EFTA	All participating EFTA countries report using a model to assess the quality of deployment of data. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report using a model to assess the quality of deployment of data.

(Question Q23)

The 5-star open data model and the FAIR principles remain the most frequently cited models used by countries for assessing data quality. **Albania** and **Montenegro** are the most recent countries to adopt the 5-star open data model to assess the quality and deployment of open data in their respective countries. Many countries continue to integrate the FAIR principles into their data quality assessments.

Highlight from France – data.gouv.fr metadata quality score

France has developed a metadata quality score for datasets published on data.gouv.fr, inspired by the 5-star open data model. This score is designed to help both data producers and reusers assess and improve the quality of metadata in a transparent and actionable way.

Key features include the following.

- **Multi-criteria evaluation**: the score is based on several metadata dimensions, including:
  - completeness and clarity of dataset descriptions;
  - documentation of resources;
  - update frequency and adherence;
  - licensing openness;
  - declared open formats;
  - spatial and temporal coverage.
- **User guidance**: producers receive feedback on which criteria are met and which need improvement, encouraging continual enhancement of metadata quality.
- **Integration into impact indicators**: the score is publicly visible and integrated into France's broader impact measurement framework, reinforcing metadata quality as a key performance metric.

This model promotes greater accountability, discoverability and reuse potential of datasets, while offering a replicable framework for other countries aiming to improve metadata quality systematically.

Activities for data providers to ensure high-quality data

The quality of data on national portals depends on the quality of data supplied by data providers. Therefore, assisting data providers with skills and tools is one way to improve the quality of published data. Table 49 presents an overview of how countries responded to the question on this topic.

Table 49: Countries' responses to the question on activities for data providers to ensure high-quality data

	Do you conduct activities to promote and familiarise data providers with ways to ensure higher quality data?
EU-27	Twenty-six Member States (96 %), **all except Bulgaria**, report conducting activities to promote and familiarise data providers with ways to ensure higher quality data. This has remained stable since 2024.
EFTA	All participating EFTA countries report conducting activities to promote and familiarise data providers with ways to ensure higher quality data. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report conducting activities to promote and familiarise data providers with ways to ensure higher quality data.

(Question Q24)

In 2025, countries continue to echo trends from previous assessments in the type of activities used to promote and familiarise data providers with ways to ensure higher quality data. Namely, **Albania** and

Montenegro now report organising hands-on or thematic training events. Specifically, **Albania** organised a hands-on workshop led by the National Agency for Information Society, focusing on improving metadata structure and standardisation. **Montenegro** conducted training sessions that emphasised the importance of data quality and provided internal guidance documents to support data providers. **Norway** is also another country to report the trend of direct engagement with data publishers, where authorities proactively reach out to data providers with tips and feedback to improve metadata quality. Notably, **France** reported a more comprehensive approach to familiarise data providers with ensuring higher quality data, which includes regular training events, webinars and personalised support, complemented by detailed documentation and feedback mechanisms based on user analytics.

Highlight from France – promoting data quality through schema adoption
France places strong emphasis on promoting the use of standardised data schemas to enhance metadata quality and interoperability across its open data ecosystem. To support this, it maintains a dedicated platform – schema.data.gouv.fr – that provides comprehensive documentation, validation tools and practical examples. This platform helps data providers adopt common schemas, validate their datasets and ensure consistency in structure and semantics. By making schema adoption accessible and actionable, France empowers publishers to produce higher quality, interoperable data that is easier to discover, integrate and reuse.

Deployment quality

Several best practices can enhance the accessibility and reusability of open data. These include ensuring datasets are made available under an open data licence (e.g. CC) and having licences provided in a structured format. Additionally, it is good practice to ensure that datasets are in an open and machine-readable format (e.g. CSV, JSON and XML) and to assign URIs to the datasets. Finally, datasets should also be linked to various sources, which, through the use of URIs, can expand the dataset's context and relevance. Table 50 presents an overview of how countries responded to the questions on this topic.

Table 50: Countries' responses to questions on deployment quality

	*What percentage of datasets are made available under an **open licence**?*	*What percentage of licences are provided in a **structured data format**?*	*What percentage of datasets are provided in an open and **machine-readable format**?*	*What percentage of datasets use **URIs**?*	*What percentage of datasets **link to other sources**?*
EU-27	Twenty-four Member States (89 %), with the recent addition of **Greece** and **Portugal**, report that	Twenty-three Member States (85 %) report that over 90 % of their datasets have structured licence data. This includes	Seventeen Member States (63 %), with the recent addition of **Greece**, report that over 90 % of their datasets are in	Eleven Member States (41 %) report that over 90 % of their datasets use URIs. This includes the recent	Five Member States (19 %) report that over 90 % of their datasets are linked to other sources. This has remained

	*What percentage of datasets are made available under an **open licence**?*	*What percentage of licences are provided in a **structured data format**?*	*What percentage of datasets are provided in an open and **machine-readable format**?*	*What percentage of datasets use **URIs**?*	*What percentage of datasets **link to other sources**?*
	over 90 % of their datasets have an open licence.	the recent additions of **Ireland**, **Greece**, **Malta** and **Portugal**.	a machine-readable format.	additions of **Greece**, **Cyprus** and **Lithuania**.	stable since 2024.
EFTA	**Switzerland** reports that over 90 % of its datasets have an open licence. This has remained stable since 2024.	All three participating EFTA countries report that over 90 % of their datasets have structured licence data. This has remained stable since 2024.	**Iceland** and **Norway** report that over 90 % of their datasets are in a machine-readable format. This has remained stable since 2024.	**Norway** reports that over 90 % of its datasets use URIs. This has remained stable since 2024.	**Norway** reports that over 90 % of its datasets are linked to other sources. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that over 90 % of their datasets have an open licence.	**Albania**, **Montenegro**, **North Macedonia**, and **Serbia** report that over 90 % of their datasets have structured licence data.	**Albania**, **Montenegro**, **North Macedonia**, **Serbia** and **Ukraine** report that over 90 % of their datasets are in a machine-readable format.	**Albania**, **Montenegro**, and **North Macedonia** report that over 90 % of their datasets use URIs.	**North Macedonia** and **Ukraine** report that between 51 % and 70 % of their datasets are linked to other sources.

(Questions Q25, Q26, Q27, Q28 and Q29)

6.6. Pilot indicator: automated tests of metadata quality

Pilot indicator – automated tests

In addition to gathering qualitative data about metadata quality, metadata quality can also be assessed quantitatively. The MQA is a tool designed to evaluate the quality of metadata harvested by the European Data Portal. More information about the methodology and its calculations can be found on the MQA page of the European Data Portal.

In brief, the MQA's methodology examines five dimensions, which focus on:

- compliance with DCAT-AP and related standards;
- the disclosure of information beyond DCAT-AP requirements;
- the accessibility of referenced data;
- the machine readability of data formats;
- the use of licences.

As a pilot project in the ODM assessment, four specific indicators from the MQA were analysed. Summary statistics were calculated across national catalogues that were findable on the European Data Portal. Certain countries, including **Albania**, **Bosnia and Herzegovina**, **Malta** and **North Macedonia**, were not assessed as their primary open data catalogues were not findable on the European Data Portal. Geoportals are not included in the analysis. The metrics were extracted from the MQA on 28 November 2025. The findings did not contribute to the countries' maturity scores.

The **machine readability** indicator evaluates if a distribution is in a machine-readable format based on the European Data Portal's GitLab repository vocabulary.

- 33 % of the distributions assessed are machine readable.

The **DCAT-AP compliance** indicator evaluates metadata conformity with the DCAT-AP standard using the SHACL validation from the European Data Portal. SHACL is a recommendation from the World Wide Web Consortium and is used for validating RDF graphs against a set of shapes. A limitation of the MQA methodology is that this DCAT-AP check can only be performed in catalogues that are delivered natively as RDF.

- 26 % of the distributions assessed are DCAT-AP compliant, with **Italy** scoring 100 % on this indicator.

The **licence information** indicator evaluates if distributions specify licence details, facilitating reuse.

- 54 % of the distributions assessed provide licence information, with **Cyprus**, **Czechia**, **Germany**, **Iceland**, **Italy**, **Luxembourg**, the **Netherlands**, **Spain** and **Switzerland** achieving 100 % on this indicator.

The **licence vocabulary** indicator evaluates the accuracy of licence specifications (e.g. correctly versioned CC licences). The specifications are derived from the FAIR principles. The MQA recommends and credits the usage of controlled vocabularies. The European Data Portal publishes its controlled vocabularies on GitLab. The vocabularies are derived from the EU vocabularies.

- 15 % of the distributions assessed include licence information that matches controlled vocabularies, with **Cyprus** scoring 100 % on this indicator.

6.7. Recommendations

Countries can use the following general advice to improve the quality dimension of the ODM methodology. The recommendations are tailored to four nominal levels of maturity, ranging from trendsetters to beginners.

Trendsetters

- Lead by example in improving data and metadata quality by applying domain-specific standards to harmonise datasets and ensuring that HVDs fully comply with both metadata and data requirements. Apply the same approach to other datasets of significant value to maximise interoperability, discoverability and reusability.
- Continue to improve the quality of data and its metadata by boosting the use of tools on your portal (e.g. for metadata validation). Explore the use of tools powered by artificial intelligence to improve metadata quality. Enable automated notifications to publishers to alert them to issues.
- Provide tools to convert data into alternative formats, possibly replacing non-machine-readable, proprietary formats.

Fast-trackers

- Enforce minimum standards on the quality of data by using analytics tools to monitor data publication – for both metadata (compliance with DCAT-AP) and data (publication formats).
- Develop validation processes for your national portal and report back to data providers. Act on the findings and provide tailored assistance to publishers to increase the quality of publication of both metadata and data.
- Explore the use of tools powered by artificial intelligence to improve metadata quality and automate the detection of issues.

Followers

- Provide training and online materials focusing on metadata and data quality. Promote the DCAT-AP standard and the use of its controlled vocabularies and existing guidelines to foster compliance.
- Create an understanding of the importance of publishing data in machine-readable, non-proprietary formats and of the licensing of data.
- Develop knowledge around existing open-source tools for cleaning up data, specifically the use of validators for metadata compliance.

Beginners

- Start by applying established standards and reusing existing guidelines and approaches from the European level.
- Promote the use of DCAT-AP for metadata and standard licences such as CC BY for data.
- Learn from European best practices, for example those collected in the ODM assessment, and reach out to colleagues in other countries, especially when setting out to create such guidelines.

Chapter 7: Open data impact

The Open Data Directive (Directive (EU) 2019/1024) and the Implementing Regulation on High-value Datasets (HVDs) (Regulation (EU) 2023/138) encourage EU Member States to promote the reuse of public sector information, aiming to generate economic, environmental and societal benefits. Indeed, impact can be realised when open data is repurposed to create benefits in various fields.

The **impact** dimension of the open data maturity (ODM) assessment is designed to encourage countries to implement mechanisms for monitoring open data reuse and to better understand and address the needs of data users. Hence, the impact dimension evaluates how well countries define and measure data reuse, the steps taken to assess reuse and user needs, and the presence of reuse examples in the domains of government, society, the environment and the economy. Table 51 outlines the key components of this dimension.

Table 51: Indicators of the impact dimension

Indicator	Key elements
Strategic awareness	This indicator assesses whether a national definition of open data reuse exists and how reuse is monitored and encouraged. It looks at processes for tracking reuse at the national, regional, and local levels, including for high-value datasets. It also considers whether a methodology is in place to measure the impact of open data reuse.
Measuring reuse	This indicator explores how reuse is understood and documented. It looks at tools and activities for identifying which datasets are reused and how, along with efforts to understand reusers' needs. It also considers whether reuse cases are gathered and classified systematically.
Created impact • **governmental** • **social** • **environmental** • **economic**	This indicator evaluates whether the impact of open data reuse has been studied and documented across key domains. It looks at evidence and examples of impact in the following domains. • **Governmental.** Efficiency, transparency, policymaking and decision-making. • **Social.** Inclusion, health, housing, education and data literacy. • **Environmental.** Biodiversity, sustainable cities, climate change mitigation and renewable adoption. • **Economic.** Gross domestic product, employment, productivity, innovation, entrepreneurship and business creation.

This chapter will first present the overall performance on the impact dimension and then provide a summary of the results and best practices for each indicator.

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7.1. Overall performance on the impact dimension

In 2025, the impact dimension is the least mature dimension of the ODM assessment, with the EU-27 scoring 82 % on average (Figure 16). Nonetheless, maturity in this dimension has grown by 2 percentage points (pp) since the 2024 assessment. This increase at the dimension level has been driven by improvements in all three underlying indicators. Specifically, the 'strategic awareness' and 'created impact' indicators both increased by 2 pp and the 'measuring reuse' indicator increased by 1 pp. While 'strategic awareness' (89 %) and 'measuring reuse' (88 %), which primarily relate to the activities of the national open data teams, show strong maturity at close to 90 %, 'created impact' remains behind at 77 %, demonstrating the challenge of converting data supply into active uptake by data users. Still, taken from a historical perspective, maturity on the 'created impact' indicator has increased by more than 10 pp since this indicator was introduced to the methodology in 2022.

As in the previous year, 11 countries achieve full maturity (100 %) on this dimension (Figure 17). **Denmark** and **Ireland** (as in 2024) and now in 2025 also **Norway** and **Slovenia** achieve a nearly full maturity score of 97 %.

However, the distribution of scores reveals a two-speed reality. While half of the assessed countries score more than 90 % on this dimension, nearly a quarter of countries remain below 50 % maturity. This suggests that the leading countries are consolidating their advanced practices, but many others are still establishing their foundations on the concepts of reuse and impact.

Countries that experienced decreases on their impact dimension scores are **Croatia** and **Sweden**. Croatia's 8 pp drop in overall score stems from a 14 pp decrease in the 'created impact' indicator. This is largely due to the country indicating that it does not currently have up-to-date information on the social impact of open data. Sweden's overall score declined by 7 pp, largely due to a significant 33-point drop in the measuring reuse indicator. This decline can be attributed to the discontinuation of activities aimed at tracking how open datasets are reused, along with efforts to understand the needs of data reusers.

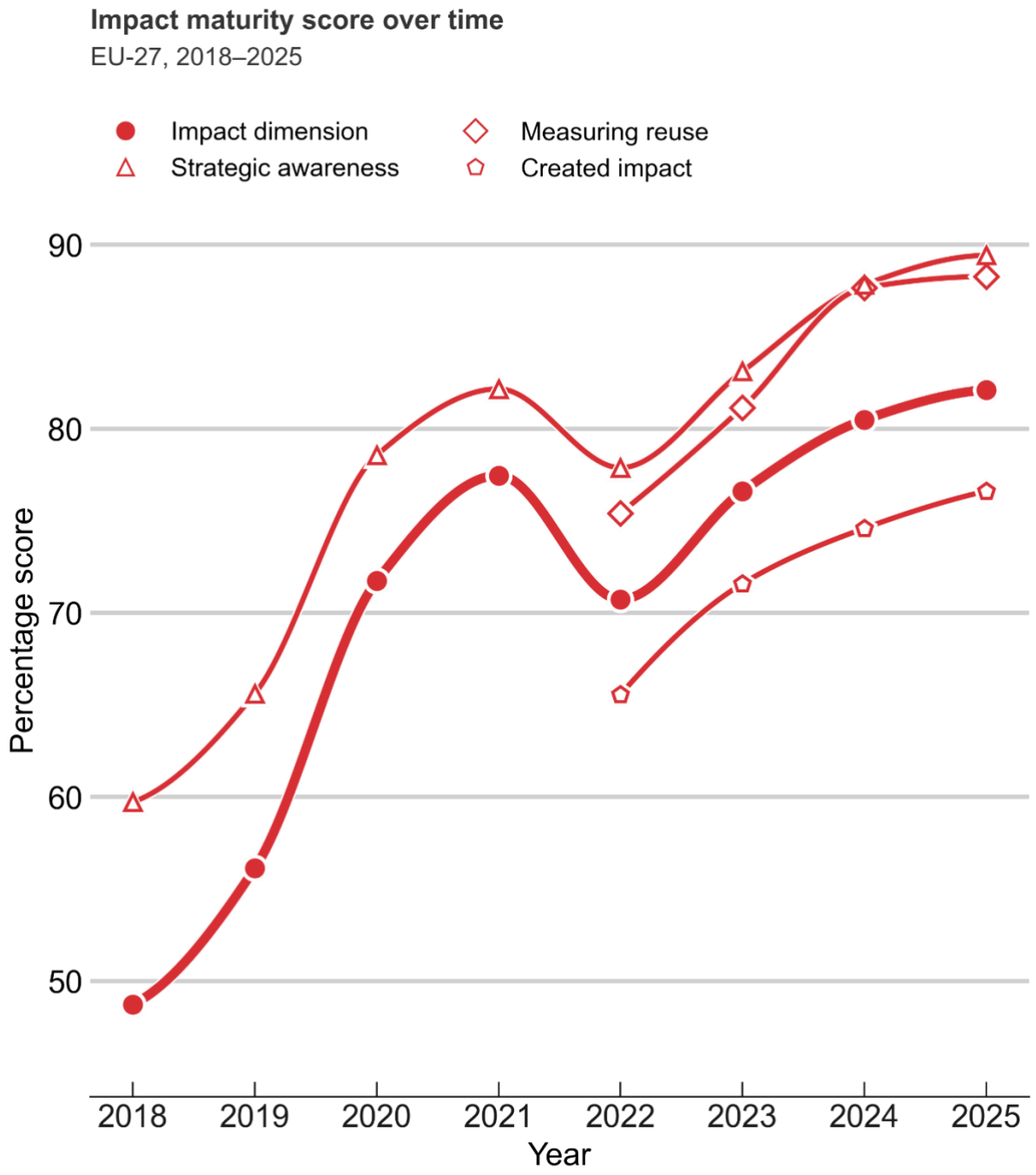

Figure 16: The EU-27 average score on the impact dimension has risen steadily during 2022–2025.

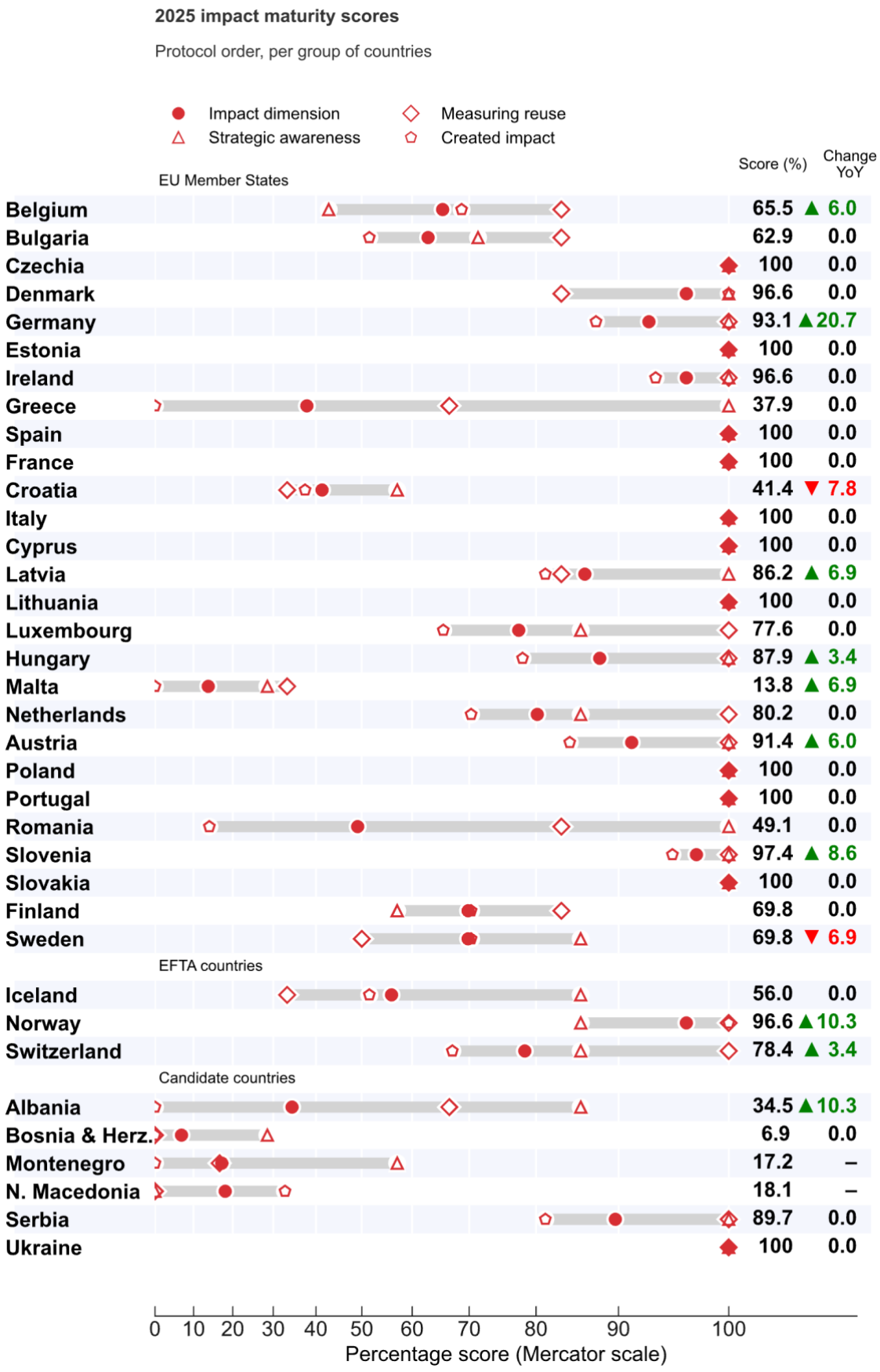

Figure 17: Ten participating countries improved their score on the impact dimension in 2025.
NB: EFTA: European Free Trade Association; YoY: year-on-year.

Highlight from Lithuania – Formal methodologies for measuring impact

One of the key practices highlighted in this year's report is the adoption of formal frameworks and structured methodologies that provide a systematic way to assess the impact of open data. **Lithuania** stands out with a comprehensive approach.

- **Official monitoring methodology.** The 'Methodology for the monitoring of open datasets' sets out specific indicators and procedures for tracking the publication and reuse of datasets. It defines how institutions should report on open data activities, ensuring consistency, accountability and compliance across the public sector. The methodology is formally endorsed by the Director of the Information Society Development Committee, giving it regulatory weight.
- **Predictive economic impact analysis.** The Ministry of Economy and Innovation conducted calculations to estimate the economic impact of open data. This analysis provides quantifiable evidence of open data's contribution to innovation, productivity and job creation, reinforcing its strategic importance.

These methodologies also help policymakers communicate the economic benefits of open data for the national economy in an accessible manner for all stakeholders. For example, this article illustrates the findings from the Ministry of Economy and Innovation's predictive economic impact analysis, showing that open data in Lithuania creates a market value of approximately EUR 566 million – around 1.2 % of gross domestic product – and supports about 8 000 value-added jobs.

Read more about this trend in Section 7.2.

Germany (+ 21 pp), **Norway** (+ 10 pp) and **Albania** (+ 10 pp) showed the most significant year-on-year improvements in the impact dimension.

Germany's improved maturity relates primarily to a notable increase in the 'strategic awareness' indicator (+ 29 pp). This can be credited to their recent development of implementing processes for monitoring and measuring the level of reuse of high-value datasets, along with new collaborations between their government institutions and other actors (e.g. civil society and academia). Germany also considerably improved its 'created impact' indicator, and more specifically 'social impact', by reporting evidence and reuse cases across key domains such as inequality, housing and health.

Highlight from Germany – mFund initiative

One of the key practices highlighted in this year's report is the focus on systematic funding that sustains long-term capacity and fosters collaboration between government and civil society.

As an example, **Germany's** mFund initiative provides structured financial support for mobility-related data projects, encouraging partnerships beyond government. In total, 15 mFUND projects involve civil society organisations that use and/or create open data, demonstrating how systematic funding can amplify open data impact.

A notable project that was created through this funding programme is the miki project (*mobil im Kiez*), which develops navigation and orientation solutions for people with limited mobility through active civil society engagement. The project team created a nationwide prototype with visualisations for cities such as Cologne, Kassel, Munich, Potsdam and Saarbrücken, showing building barriers and path surfaces. People with disabilities were involved from the start of the project. These visualisations will be integrated into Wheelmap.org, helping individuals with mobility impairments save money, plan better and advocate for accessible environments. The project also enabled the OpenStreetMap community to identify missing data quickly.

Read more about this trend in Section 7.2.

Norway's improved maturity is driven by the 'created impact' indicator (+ 19 pp), and mostly in the domain of 'economic impact' (+ 56 pp). Namely, it now reports documented reuse cases driving improvements in employment, innovation and productivity.

Albania's improvement can mostly be credited to a 33 pp increase on the 'measuring reuse' indicator. Albania reported introducing new activities in 2025 to track dataset reuse, including surveys and workshops with reusers. In addition, it has launched a social media campaign as a way to better understand reusers' needs and to further stimulate the reuse of open data.

Highlight from Norway – Entur initiative
In the domain of economic impact, **Norway** stands out with the **Entur initiative**. This is a state-owned company that created a national platform for travel planning and mobility services. By aggregating and standardising real-time data from public transport operators, Entur provides unified access to mobility information. The platform uses open standards such as NeTEx and SIRI and is built on OpenTripPlanner 2.0, enabling advanced routing and integration with micro-mobility services such as scooters. Through APIs and open datasets published on data.norge.no, developers can access timetables, stop locations and real-time updates to build apps and services that support seamless mobility. Entur also collaborates on open-source development and integrates providers like Voi and TIER, fostering an ecosystem of innovative mobility solutions. This case highlights how open data can serve as a foundational enabler for innovation ecosystems and accelerate technology adoption. By providing standardised, real-time transport data through open APIs and datasets, Entur removes interoperability barriers and creates a shared infrastructure that developers and service providers can build upon. **Read more about trends in the economic impact of open data in Section 7.4.**

7.2. Strategic awareness

This indicator assesses how well countries define the reuse and impact of open data and their readiness to measure impact using monitoring systems and research methods, particularly for HVDs. It examines the actions taken to generate open data impact. In essence, strategic awareness involves establishing the essential foundations needed to evaluate the effectiveness of open data initiatives.

Definition of open data reuse

Having an agreed definition of open data reuse is a helpful starting point for setting up efforts to measure it. Typically, open data reuse refers to using public sector information for purposes other than those for which it was originally created. Table 52 presents an overview of how countries responded to the questions on this topic.

Table 52: Country responses to questions on the definition of open data reuse

	Do you have a definition of open data reuse in your country?
EU-27 **EFTA**	Like in 2024, 26 Member States (96 %), **all except Finland**, report having a definition of open data reuse. **Iceland** and **Norway** report having a definition of open data reuse. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report having a definition of open data reuse.

(Question I1)

Across the countries that provide a definition of reuse, definitions of open data reuse are most commonly grounded in a binding legal instrument (law/act) that defines or regulates reuse. This legal basis ensures enforceability and consistency across public sector bodies, making reuse rights clear and legally protected. Namely, **Albania**, **Denmark**, **Hungary**, **Italy**, **Luxembourg**, **Netherlands**, **Portugal**, **Romania** and **Spain** note that they explicitly refer to an open data or reuse law. This approach signals a strong policy commitment to open data principles and often includes detailed provisions on formats, licensing and conditions for reuse.

Several others (e.g. **Bulgaria**, **Croatia**, **Czechia**, **Estonia**, **Latvia**, **Montenegro** and **Ukraine**) derive their definition from freedom of information / access to information laws with specific reuse provisions. For these countries, the legal foundation of reuse is often framed within transparency and accountability objectives rather than innovation or economic reuse goals. In addition, **Germany**, **Greece** and **Serbia** include reuse provisions within broader digital governance or e-government frameworks. For example, Germany refers to the E-Government Act, and Serbia cites its Law on eGovernment, both of which regulate reuse as part of digital transformation measures.

Beyond legal anchors, several countries describe open data reuse primarily through policy documents (such as strategies, guidelines or official reports) rather than a single statutory clause. For example, **Austria** points to the Austrian open government framework / white paper, **Cyprus** cites its open data strategy, **Ireland** quotes its open data strategy 2023–2027 and **Norway** references a government policy page and an official report for its working definition. In addition, while **Slovakia** reports that there is no single legal definition of reuse, national strategy documents are referred to, framing reuse as value-creating activities (apps, analyses, services) that enhance transparency and innovation.

Monitoring open data reuse

Monitoring how open data is reused and encouraging public bodies to track the reuse of their own datasets can help inform strategies to enhance the reuse of open data. Table 53 presents an overview of how countries responded to the questions on this topic.

Table 53: Country responses to questions on monitoring open data reuse

	Are there any processes in place to monitor the level of reuse of your country's open data?	*Are there any activities in place to encourage public bodies to monitor the reuse of their own published data?*
EU-27	25 Member States (93 %), **all except Croatia** and **Finland**, report having processes in place to monitor the level of reuse. This has remained stable since 2024.	23 Member States (85 %), all **except Belgium**, **Croatia**, **Malta** and the **Netherlands**, report a strong focus on encouraging public bodies to monitor data reuse. This has remained stable since 2024.
EFTA	All three countries report having processes in place to monitor the level of reuse. This has remained stable since 2024.	**Iceland** and **Switzerland** report encouraging public bodies to measure the reuse of their own open datasets. This has remained stable since 2024.

	Are there any processes in place to monitor the level of reuse of your country's open data?	*Are there any activities in place to encourage public bodies to monitor the reuse of their own published data?*
Candidate	**Montenegro**, **Serbia** and **Ukraine** report having processes in place to monitor the level of reuse.	**Serbia**, **Ukraine** and **Albania** (the most recent addition) report encouraging public bodies to measure the impact of open data.

(Questions I2, I3)

Across countries, the most common way to monitor open data reuse is to maintain public directories or pages of reuse cases on or connected to the national portal. However, countries report a variety of best practices in implementing such a structured reuse directory. Specifically, some directories, such as those in **Czechia**, **France**, **Luxembourg**, **Netherlands**, **Romania**, **Serbia**, **Slovakia**, **Spain**, and **Sweden**, are open for user submissions, allowing reusers to directly add or declare their reuse cases.

Spain, **France, Romania** and **Slovakia** note that their directories incorporate built-in moderation features, which review or validate submissions before publishing them to ensure accuracy and relevance. In addition, **Portugal**, **Spain** and **Switzerland** enhance their directories with thematic tagging and categorisation, allowing reuse cases to be grouped by topic for easier navigation. Other countries integrate reuse cases more deeply into the data ecosystem: **Norway** automatically links reuse examples to the datasets they use and embeds them in the catalogue, and **Montenegro** provides use case sections per dataset.

Another common way to monitor open data reuse is through analytics tools and dashboards embedded in national portals. Many countries rely on standard web analytics tools such as Google Analytics and Matomo for systematic monitoring of dataset use such as visits and downloads. Others combine analytics with custom dashboards: for example, **Spain** integrates Google Analytics with Looker Studio to produce interactive reports, and **Bulgaria** pairs Google Analytics with Tableau to publish portal usage and dataset popularity openly. Several countries emphasise the public transparency of metrics, such as **Spain**, which shares engagement statistics through its *Métricas e Impacto* reporting. In some cases, analytics are complemented by additional indicators: for example, **Switzerland** includes portal usage statistics as part of its open government data masterplan, alongside thematic showcases and impact key performance indicators. These variations illustrate how analytics-based monitoring ranges from basic traffic tracking to integrated dashboards that combine quantitative metrics with qualitative impact indicators.

In terms of activities in place to encourage public bodies to monitor the re-use of their own published data, the dominant approach is to train and build capacity among civil servants for monitoring re-use. Specifically, **Bulgaria**, **Cyprus**, **Hungary**, **Ireland**, **Romania**, **Sweden** and **Switzerland** run institutional or recurring training that goes beyond general open data awareness and includes practical elements such as impact measurement, analytics and engagement with re-users. **Spain** and **Portugal** primarily rely on regional or event-based training and support (e.g. webinars, workshops and pilots) that also encourage monitoring practices.

Another recurring approach is the use of legal mandates that require public bodies to monitor and report on the re-use of their data. **Ukraine** imposes a clear statutory obligation with centralised reporting to the Cabinet of Ministers. **Slovakia** requires re-use data for a national impact report through a government resolution. **Romania** is introducing secondary rules and templates for annual

reporting that include re-use metrics. **Albania** sets open data obligations in law but relies mainly on awareness and compliance sessions rather than explicit monitoring requirements.

Interestingly, some countries use awards and recognition programmes to incentivise public bodies to monitor and promote the re-use of their data, although this is not widespread. These initiatives create positive visibility for organisations that demonstrate strong practices, turning monitoring into a reputational benefit rather than a compliance burden. For example, **Greece** organises the Digital Awards, which celebrate innovative and effective open data practices, including strong monitoring and re-use initiatives. This recognition raises the profile of public servants who lead by example and inspires others to adopt similar approaches. Similarly, **Austria** uses its Data Governance Conference to honour institutions that excel in implementing governance and monitoring mechanisms, reinforcing the importance of structured oversight. In **Estonia**, an annual competition highlights the best data publishers, re-use cases and visualisations. Winners are publicly recognised on the national portal and invited to share their expertise in working groups, creating a cycle of recognition and knowledge-sharing that strengthens the open data ecosystem.

High-value datasets

Having robust processes in place to monitor and measure the reuse of HVDs can support measures that apply the Implementing Regulation on HVDs. Table 54 presents an overview of how countries responded to the questions on this topic.

Table 54: Country responses to the question on HVDs

	Does your country have processes in place to monitor and measure the level of reuse of HVDs?
EU-27	20 Member States (74 %) report having processes in place to monitor the reuse of HVDs. **Germany** is the newest country to report doing this.

(Question I4)

NB: Non-EU countries were not surveyed on this question, since the High-Value Dataset (HVD) Implementing Regulation applies only to EU Member States.

Countries are adopting a mix of strategies to monitor and measure the reuse of high-value datasets (HVDs). A trend among **Germany**, **Cyprus**, **Latvia**, **Lithuania** and **Slovakia** is to rely on quantitative indicators such as downloads, API calls and page views, typically via national open data portals. While the **Netherlands** does not yet operate a national monitoring process, usage is tracked by some providers (e.g. Public Service on the Map) through API statistics. Portal-integrated metrics generally provide a straightforward and scalable basis for monitoring but, as **Germany** notes, page views alone can be misleading without provider-side download/API logs.

In parallel, **Estonia**, **Spain**, **Portugal** and **Romania** report focusing on qualitative insights by collecting and analysing real-world HVD use cases. This method helps governments understand not just how often HVDs are accessed, but also how they are used, by whom and for what purpose. This is especially valuable for assessing societal and economic impact.

Highlight from Lithuania – insights from high-value datasets access statistics
Lithuania has made significant strides in promoting the reuse of high-value datasets. More than 400 such datasets are published on its national open data portal, data.gov.lt. To monitor their reuse, the portal is equipped with a built-in functionality that tracks download statistics for each dataset. These statistics show which datasets are most used and provide clear indicators of user engagement. For instance, address data from the Address Register has been downloaded more than 1.2 million times, while data from the Real Estate Register has seen over 150 000 downloads. Additionally, datasets relating to water use and waste management have recorded thousands of downloads. These figures serve as proxies for reuse, based on the assumption that high download volumes reflect active utilisation in applications, research or public services. Lithuania applies the same statistical monitoring methods to HVDs as it does to general open data, ensuring consistency and comparability across its data ecosystem.

Defining and measuring the impact of open data

Specifying what the impact of open data means in the national context can enable better measurement of the effectiveness of policies and other implementation measures in achieving the envisaged impact. Table 55 presents an overview of how countries responded to the questions on this topic.

Table 55: Country responses to questions on defining and measuring the impact of open data

	Has your government specified what 'impact of open data' means?	*Do you have a methodology in place to measure the impact of open data in your country?*
EU-27	25 Member States (93 %) report having a definition of open data impact. This has remained stable since 2024.	24 Member States (89 %) report having a methodology in place to measure the impact of open data, with **Romania** being the latest to report having such a methodology.
EFTA	All three countries report having a definition of open data impact. This has remained stable since 2024.	**Norway** and **Switzerland** report having a methodology in place to measure the impact of open data. This has remained stable since 2024.
Candidate	**Albania**, **Montenegro**, **Serbia** and **Ukraine** report having a definition of open data impact, with **Serbia** being the latest addition.	**Albania**, **Serbia** and **Ukraine** report having a methodology in place to measure the impact of open data. This has remained stable since 2024.

(Questions I5 and I6)

Many countries define the impact of open data as a multi-domain concept, recognising its potential across governance, economic, environmental, innovation and social spheres. However, the emphasis varies by country. For instance, **Denmark**, **Norway** and **Switzerland** prioritise economic benefits such as growth, competitiveness and job creation. In contrast, **Albania**, **Serbia** and **Ukraine** focus on governance improvements, highlighting transparency, accountability and anti-corruption. **Bulgaria** and **Portugal** underscore social value, emphasising citizen empowerment and inclusion. Innovation and research are central to definitions in **Sweden**, which links open data to AI-driven services and scientific advancement. Additionally, countries like **Denmark** and **Finland** incorporate environmental

sustainability into their frameworks, connecting open data to climate action and resource management. These nuanced approaches reflect diverse national priorities while collectively affirming the transformative potential of open data across sectors.

The most common approach to measuring the impact of open data is the development of formal frameworks and structured methodologies. These frameworks provide a systematic way to assess impact. **Spain, Italy**, **Lithuania**, **Portugal**, **Romania** and **Slovakia** have codified methodologies with defined indicators and dimensions, often embedded in national strategies or aligned with international standards. For example, **Portugal's** project *Dados Abertos – Definição de modelo de avaliação de impacto* benchmarks international best practices, defines metrics and applies case studies across governmental, economic, social and environmental domains. It uses surveys of data providers and reusers and has already been applied to real cases. Romania's OECD-supported framework combines recurrent evaluations with the development of reuse impact indicators.

Other countries follow different structured trends. **Croatia, Hungary** and **Serbia** use multi-dimensional impact indices or *ex ante* / *ex post* assessment models to capture economic, social, political and environmental effects. **Finland**, **Norway** and **Switzerland** rely on model-based approaches such as STEEP analysis or Social Return on Investment, while **Czechia** and **Ukraine** employ qualitative frameworks inspired by international best practices, focusing on interviews, case studies and thematic analysis. Finally, **Cyprus** represents a hybrid trend, combining structured elements with periodic impact studies and reuse case analysis.

Collaboration to create open data impact

One way to create impact with open data is for the public sector to work together with other stakeholders. Table 56 presents an overview of how countries responded to the questions on this topic.

Table 56: Country responses to questions on collaboration to create open data impact

	Is there collaboration between government and civil society or academia to create open data impact in your country?
EU-27	26 Member States (96 %), with **Germany** as the most recent addition, report that they ensure collaboration between government and civil society or academia to create open data impact. **Malta** did not report doing this.
EFTA	All three countries ensure collaboration between different parties to create open data impact. This has remained stable since 2024.
Candidate	**Albania**, **Bosnia and Herzegovina**, **Serbia** and **Ukraine** report ensuring collaboration between different parties to create open data impact.

(Question I7)

Some countries emphasise partnerships that focus on engaging with different stakeholders and using open data to co-create new applications and services. Namely, **Croatia**, **Estonia**, **Iceland**, **Spain**, **Switzerland** and **Ukraine** report co-creating applied solutions through hackathons and datathons with various stakeholders.

A key trend reported by countries is the use of funding as a lever to drive open data impact, but this takes two distinct forms. For example, **Estonia**, **Ireland** and **Ukraine** emphasise engagement-oriented

funding, where grants, awards and prize funds are tied to participatory initiatives such as hackathons, accelerators and community projects. **Ireland's** annual Engagement Fund finances collaborative projects and hackathons, while **Estonia** incentivises innovation through awards for the best academic theses on open data reuse. In contrast, **Denmark**, **Germany**, **Spain, Italy** and **Lithuania** focus on systematic or institutional funding, which sustains long-term capacity rather than one-off competitions. For example, **Germany's** mFUND programme supports multiple open data projects, and **Denmark** allocates public funding to Open Data DK to assist municipalities in publishing data.

Many countries also report including academic institutions in projects as a way of creating open data impact. These partnerships often go beyond research and measurement to co-develop platforms, tools, and services that enable reuse and innovation. For example, Spain, Italy and Portugal all mention establishing academic chairs, observatories or research hubs which focus on leveraging open data (among other types of data) in order to inform public administration and policy research. These hubs sustain long-term impact beyond one-off projects.

7.3. Measuring reuse

This indicator assesses the actions taken to map reuse, the methodologies for collecting and classifying reuse cases, and the activities performed to understand the requirements of reusers.

The reuse of datasets and reusers' needs

Conducting activities to document which open datasets are reused and how, and what the needs of reusers are, can help public bodies devise approaches to further stimulate the reuse of open data. Table 57 presents an overview of how countries responded to the questions on this topic.

Table 57: Country responses to questions on reuse of datasets and reusers' needs

	Have any public bodies in your country launched or performed any activities in the past year to understand which (open) datasets are reused and how?	*Have any public bodies in your country launched or performed any activities in the past year to better understand reusers' needs in order to further stimulate the reuse of open data?*
EU-27	26 Member States (96 %), **all except Malta**, report performing activities to understand which datasets are being reused and how. This has remained stable since 2024.	24 Member States (89 %) report that public bodies perform activities to better understand reusers' needs. This has remained stable since 2024.
EFTA	All three countries report performing activities to understand which datasets are being reused and how. This has remained stable since 2024.	**Norway** and **Switzerland** report that public bodies perform activities to better understand reusers' needs. This has remained stable since 2024.
Candidate	**Albania**, **Serbia** and **Ukraine** report performing activities to understand which datasets are being reused and how.	**Serbia, Ukraine** and, most recently, **Albania**, report performing activities to better understand reusers' needs.

(Questions I8 and I9)

In 2025, the most common activity performed to understand how datasets are reused remains running interviews or workshops with reusers (28 countries). The three other activities (i.e. running surveys, implementing automated feedback mechanisms that track users' access to datasets, and using other approaches) measured are equally common, as all are cited by 20 countries. Compared to 2024, the category 'Other' has the largest increase in reported use (+ 5 countries).

Among the countries that selected 'Other', the most frequent approach for understanding which open datasets are reused and how involves hackathons, datathons, competitions and workshops (e.g in **Croatia**, **Czechia**, **Norway**, **Spain** and **Ukraine**). These events provide a practical setting to observe real-world reuse, identify popular datasets and gather feedback directly from participants through Q&A sessions and collaborative challenges. Equally significant is the trend of maintaining feedback and dialogue channels (e.g. in **Albania**, **Austria**, **Denmark**, **Estonia**, **Germany** and **Sweden**). These include national forums, GitHub issue trackers, reuse pages on portals, developer dialogues and structured consultations, all designed to capture insights on how datasets are being applied.

Gathering and classifying reuse cases

Public bodies can develop systematic ways of gathering and classifying reuse cases to understand how datasets are reused and what impact they can potentially create. Table 58 presents an overview of how countries responded to the questions on this topic.

Table 58: Country responses to questions on gathering and classifying reuse cases

	Have any public bodies in your country developed any systematic way of gathering reuse cases?	*Are there any public bodies in your country that have developed a systematic way of classifying the gathered reuse cases?*
EU-27	24 Member States (89 %) report that public bodies have developed systematic ways of gathering reuse cases. This has remained stable since 2024.	19 Member States (70 %), with the recent addition of **Belgium**, report that public bodies have developed systematic ways of classifying reuse cases.
EFTA	**Norway** and **Switzerland** report that public bodies have developed systematic ways of gathering reuse cases. This has remained stable since 2024.	**Norway** and **Switzerland** report that public bodies have developed systematic ways of classifying reuse cases. This has remained stable since 2024.
Candidate	**Montenegro, Serbia** and **Ukraine** report that public bodies have developed systematic ways of gathering reuse cases.	**Serbia** and **Ukraine** report that public bodies have developed systematic ways of classifying reuse cases. This has remained stable since 2024.

(Questions I10 and I11)

The most common method of gathering open data reuse cases by European public bodies is through their national or regional open data portals. Most countries enable reusers to self-report their reuse cases via a submission mechanism on their open data portals. Some countries such as **Ireland** and **Austria** take a more hybrid approach, enabling reuse case submission via the national portal and simultaneously approaching others (e.g. agencies, companies, developers) to request or solicit reuse cases.

While national portals are the most common platforms offering this function, **Denmark**, **Germany**, **Spain**, **Italy** and **Switzerland** note a decentralised approach where regional, sectoral, or municipal portals gather their own reuse cases. For example, **Germany** and **Italy** rely on state or regional portals, while in **Denmark** reuse cases are collected through sector-specific portals such as the environmental portal.

Surveys are another common method of gathering reuse cases, as noted by, for example, **Czechia**, **Spain**, **Lithuania**, **Slovakia** and **Sweden**. These are specifically regular, usually annual questionnaires directed at data providers/publishers to collect reuse cases. For example, in **Czechia** there is an annual survey among open-data providers feeding the *Annual Report on the State of Open Data* and the reuse catalogue.

Lastly, some countries such as **Denmark**, **Estonia**, **Greece** and **Spain** also mention that they actively involve their open data user communities through events and networks, creating opportunities to showcase reuse cases and stimulate new ones. For example, **Estonia's** Ministry of Justice and Digital Affairs runs meetings with the public sector, non-governmental organisations, academia and private companies, in order to foster structured discussions to capture reuse cases, while **Greece** leverages datathons and hackathons as a way of gathering solutions built on open data.

Highlight from Denmark – Multichannel approach to gathering reuse cases

Denmark has adopted a multi-channel approach to collecting reuse cases, blending engagement and flexibility:

- **active engagement**: authorities conduct interviews with selected reusers, ensuring input from different user groups and varying levels of maturity;
- **community events**: targeted seminars, such as those organised for the environmental portal, create opportunities to surface sector-specific reuse cases;
- **diverse presentation formats**:
  - some cases are published as in-depth articles on platforms like dataforsyningen.dk,
  - others appear as short catalogue entries, for example, Environmental Portal solutions,
  - certain cases remain internal-only, guiding authorities' own improvement efforts.

This layered strategy ensures that reuse stories are not only collected but also curated in ways that maximise their value for different audiences.

7.4. Created impact

The 'created impact' indicator assesses the presence of data that provides evidence on the impact that open data is creating in a country (e.g. in the form of research studies, statistics or impact assessments) and the presence of reuse case examples (e.g. data applications, digital services or analysis used for decision-making). The 'created impact' indicator is evaluated in four impact domains: government, society, the environment and the economy.

Governmental impact

The 'governmental impact' subindicator evaluates the presence of research data on open data impact and reuse cases that pertain to (1) the efficiency and effectiveness of the government in delivering public services, (2) the transparency and accountability of public administrations, (3) the policymaking process and (4) decision-making processes in public administrations. Table 59 presents an overview of how countries responded to the questions on this topic.

Table 59: Country responses to questions on governmental impact

	*Is there **data on the impact** created by open data on governmental challenges?*	*Is there a reuse case example related to the **efficiency and effectiveness** of government operations?*	*Is there a reuse case example related to the **transparency and accountability** of public administrations?*	*Is there a reuse case example related to the **policymaking** process?*	*Is there a reuse case example related to **decision-making** processes in public administrations?*
EU-27	17 Member States (63 %) report having such data available. This has remained stable since 2024.	23 Member States (85 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	24 Member States (89 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	22 Member States (81 %) gave an example of a reuse case on this topic. **Germany** is the most recent addition to this group.	22 Member States (81 %) gave an example of a reuse case on this topic. **Latvia** is the most recent addition to this group.
EFTA	**Norway**, and most recently **Switzerland,** report having such data available.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.
Candidate	**North Macedonia** and **Ukraine** report having such data available.	**North Macedonia**, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic.	**North Macedonia**, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.	**North Macedonia**, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.

(Questions I12, I13, I14, I15 and I16)

The following are some interesting reuse cases reported on this topic.

Reuse case example from Czechia – Accreditation of perinatological centres

Subdomain

Transparency and accountability.

Function and purpose

Perinatological centres in Czechia are specialised units within public hospitals that provide high-risk pregnancy care, childbirth services and neonatal intensive care under the oversight of the Ministry of Health. Starting in 2025, the ministry introduced a new accreditation process for perinatological centres that uses quality indicators derived from national health registries, which are also published as open data on the Czech national open data portal. This approach ensures that accreditation decisions are based on objective, verifiable evidence rather than internal reporting. The performance of each centre is assessed using real-world open data on maternal and neonatal outcomes and the frequency of specific obstetric interventions. For example, open datasets include indicators such as the number and type of deliveries and selected care parameters, broken down by provider.

Target group

Public perinatological centres seeking accreditation for the 2025–2029 period, as well as health authorities responsible for quality assurance.

Datasets used

The performance of each centre is assessed using indicators from the dataset Vybrané ukazatele zdravotní péče v porodnicích ČR (selected indicators of maternity care in Czech hospitals), published as open data on the Czech National Open Data Portal. This dataset provides facility-level aggregated information on the number and type of deliveries, caesarean section rates, neonatal outcomes and selected care parameters, enabling transparent and comparable evaluation across providers.

Impact

This accreditation process can have several tangible impacts. First, it enables objective benchmarking of perinatological centres by providing standardised indicators that can be compared across facilities and tracked over time. Second, the open publication of these data enhances transparency and accountability, allowing not only the Ministry of Health but also researchers, journalists, and the public to monitor performance and identify trends. Finally, by aligning with the national open data methodology, the dataset supports data-driven governance and fosters trust in the healthcare system, as stakeholders can independently verify the quality of care provided in public hospitals.

Reuse case example from Spain – Santiago del Teide's urban planning

Subdomain

Local government decision-making

Functioning and purpose

The Municipality of Santiago del Teide reused open data to support the development of its urban planning strategy. While the main goal was to define land use and guide spatial development, open datasets played a key enabling role. These included geospatial data, land classification and heritage inventories sourced from regional open data portals. The data was used to categorise land (e.g. rustic, urban, developable) and to compile a municipal catalogue of protected assets, such as monuments and ecologically significant sites, ensuring compliance with the Canary Islands' heritage regulations. This reuse of open data improved the accuracy, transparency and legal alignment of the planning process, demonstrating how open data can enhance local governance and sustainable development.

Target group

The target groups for this reuse case of open data for urban development include municipal planners and decision-makers, architects and urban developers, local communities, along with researchers and environmental analysts.

Datasets

The primary datasets reused in the urban planning strategy of Santiago del Teide can be found in the Urban Planning Dataset published by SITCAN. This dataset includes zoning classifications, land use documentation and regulatory materials that were essential for defining the municipality's spatial development model and compiling its catalogue of protected assets.

Impact

The reuse of open data in Santiago del Teide's urban planning has contributed to greater transparency, accessibility and regulatory alignment. By publishing zoning and land classification data, the municipality has made its planning documents openly available to individuals, developers and researchers. This supports public participation, allowing stakeholders to understand and engage with land use decisions. Additionally, the integration of heritage inventories and geospatial data ensures that planning complies with regional regulations, particularly those relating to the protection of cultural and ecological assets. While no formal impact assessment is published, the availability and reuse of these datasets reflect a shift toward data-driven governance and open administration, consistent with broader goals promoted by national initiatives like Urbanismo en Red and Red.es.

Social impact

The 'social impact' subindicator evaluates the presence of research data on open data impact and reuse cases that pertain to (1) marginalised groups and inequality, (2) urban housing, (3) health and well-being and (4) education and skills. Table 60 presents an overview of how countries responded to the questions on this topic.

Table 60: Country responses to questions on social impact

	*Is there **data on the impact** created by open data on social challenges?*	*Is there a reuse case example related to **marginalised groups and inequality**?*	*Is there a reuse case example related to **urban housing**?*	*Is there a reuse case example related to **health and well-being**?*	*Is there a reuse case example related to **education and skills**?*
EU-27	16 Member States (59 %) report having such data available. **Germany** and **Latvia** are the latest additions.	21 Member States (78 %) gave an example of a reuse case on this topic. **Germany** and **Latvia** are the latest additions.	22 Member States (81 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	23 Member States (85 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	21 Member States (78 %) gave an example of a reuse case on this topic. This has remained stable since 2024.
EFTA	Like in 2024, **Norway** reports having such data available.	Like in 2024, **Norway** gave an example of a reuse case on this topic.	Like in 2024, **Norway** and **Switzerland** gave an example of a reuse case on this topic.	Like in 2024, **Norway** and **Switzerland** gave an example of a reuse case on this topic.	All three countries gave an example of a reuse case on this topic, with **Norway** being the latest addition.
Candidate	**North Macedonia**, **Serbia** and **Ukraine** report having such data available.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.

(Questions I17, I18, I19, I20 and I21)

The following are some interesting reuse cases reported on this topic.

Reuse case example from Ireland – Social Pattern Decoded

Subdomain

Social demographics and marginalised groups.

Functioning and purpose

The project 'Social Pattern Decoded' transforms Irish open data into a digital art exhibition that visualises socioeconomic characteristics of Dublin neighbourhoods. Its purpose is twofold: to make complex census data more accessible and engaging for the public, and to demonstrate how open data can inspire creative, non-traditional applications. By using a visual language of colours and shapes, the exhibition tells stories about education and age distribution across the city, turning raw statistics into aesthetically appealing and meaningful art pieces.

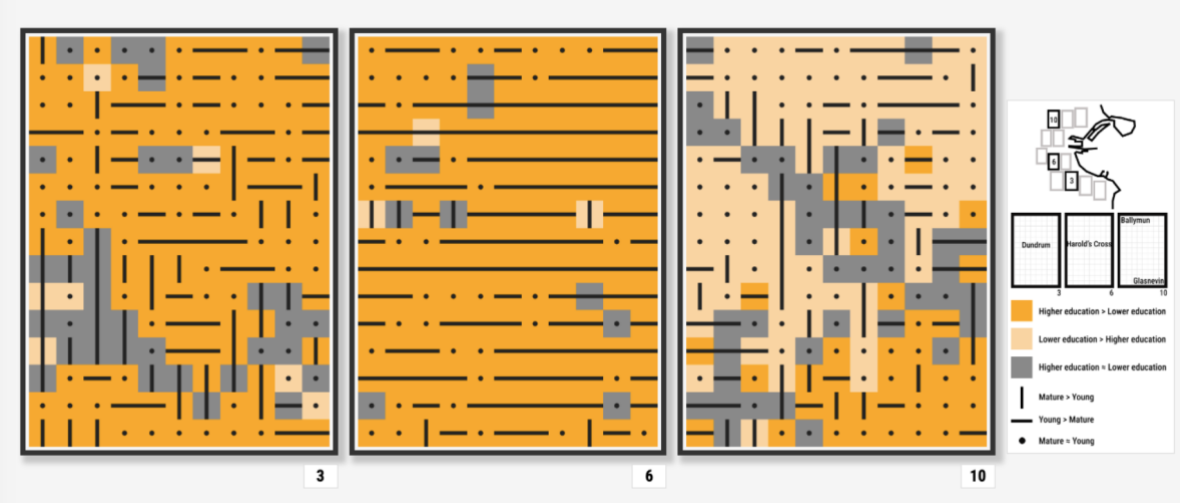

Figure 18: Three squares representing different neighbourhoods of Dublin based on education level and age distribution.

Target group

The primary audience includes the general public, educators, data enthusiasts and policy stakeholders interested in understanding social patterns in Dublin. The project also appeals to the arts and design community, showcasing how data can be a medium for creative expression, and to open data advocates, as an example of innovative reuse.

Datasets

The visuals are based on two main datasets from the **2022 Census of Population**:

- small area boundaries (spatial data): CSO Small Areas – National Statistical Boundaries 2022;
- age data: F1012 – Age Group of the Population;
- education data: Education Characteristics (Census 2022).

These datasets were merged and transformed using the **Kuhn-Munkres algorithm** to create a grid layout that preserves spatial relationships while avoiding distortion caused by irregular area sizes.

Impact

The project demonstrates the power of open data to foster engagement and creativity. It makes demographic insights more approachable, encouraging individuals to explore social diversity in their city. By presenting data as art, it bridges the gap between technical information and public

understanding, promoting transparency and cultural appreciation of data. Additionally, it serves as a model for cross-disciplinary innovation, inspiring similar initiatives in education, urban planning, and community engagement.

Reuse case example from Denmark – SkoleGPT

Subdomain

Education and skills

Functioning and purpose

SkoleGPT is a generative AI chatbot developed by the Centre for Teaching Materials to support teachers in integrating AI into classroom activities. Its primary purpose is to provide a safe, General Data Protection Regulation (GDPR)-compliant environment for AI-based learning, ensuring that no student data is shared with third parties. By leveraging open-source technology and hosting the solution in Denmark, SkoleGPT guarantees data sovereignty and compliance with European data protection standards. The tool enables teachers to create engaging lessons where students can interact with AI, such as chatting with historical figures, thereby enhancing digital literacy and critical thinking.

Target group

The primary users are teachers and students in Danish schools. Teachers gain a secure, easy-to-use tool for introducing AI concepts without legal or ethical concerns. Students benefit from interactive learning experiences that improve their understanding of technology, data and its societal implications.

Datasets

SkoleGPT reuses open data sources to train language models for educational purposes, including:

- SkoleGPT instruct dataset: a Danish instruction dataset created for fine-tuning large language models for classroom use. It is based on a quality-filtered subset of the OpenOrca dataset, translated and adapted for Danish educational contexts.
- Historical and cultural open data: from Open Data DK and the Danish National Data Portal, this is used to create interactive scenarios such as 'chatting with historical figures.'
- Statistics Denmark data: Statistics Denmark provides official datasets that support educational and demographic context, often used in related projects and student collaborations.

Impact

SkoleGPT demonstrates how open data can directly contribute to raising a society's level of education and digital skills. By enabling students to interact with AI in a safe environment, the project promotes data literacy, critical thinking and responsible technology use – all key competencies for the future workforce. It also empowers teachers to confidently integrate AI into their teaching, reducing barriers to innovation in education. Beyond the classroom, SkoleGPT serves as a model for how open data and open-source technologies can be combined to create impactful, privacy-conscious solutions that strengthen digital inclusion and prepare individuals for a data-driven society.

Reuse case example from Slovakia – 'I don't have a car, I don't have a bus' analysis

Subdomain

Social inequality and the environment

Functioning and purpose

The 'Nemám auto, nemám autobus' ('I don't have a car, I don't have a bus') analysis serves as a strategic tool developed by the Institute for Environmental Policy within the Slovak Ministry of Environment. Its core purpose is to support the implementation of Slovakia's Social-Climate Plan by identifying regions and populations affected by transport poverty – a condition where individuals lack access to both private vehicles and reliable public transport. By introducing a Transport Poverty Index, the study provides a framework for evaluating mobility-related inequalities and guiding investments in sustainable transport solutions. It bridges environmental policy with social equity, ensuring that climate action does not leave behind those most vulnerable to systemic mobility barriers.

Target group

The analysis focuses on socially and geographically disadvantaged populations, particularly in underdeveloped regions. These areas are characterised by limited transport infrastructure, high unemployment and low household incomes.

Datasets

Key datasets from the Slovakian open data portal integrated into a composite index that quantifies transport poverty risk across Slovak municipalities include:

- household transport expenditure data (Výdavky domácností);
- census and demographic data (SODB2021);
- public transport accessibility metrics (verejná doprava) (e.g. number of public transport connections, travel time to key destinations, distance to nearest public transport stops);
- vehicle ownership and emissions data (Vozidlá);
- mobility behaviour and trip purpose data (Mobilita);
- unemployment and income data (Nezamestnanosť).

Impact

The analysis has had a tangible impact on both policy development and public awareness. It was cited in national media, helping to elevate the issue of transport poverty in the national conversation. More importantly, it has informed the strategic direction of Slovakia's use of the EUR 1.53 billion EU Social Climate Fund, ensuring that climate investments are aligned with the needs of vulnerable communities. The study's recommendations are now shaping a more inclusive and sustainable transport policy, one that recognises mobility as a fundamental enabler of social and economic participation.

Environmental impact

The 'environmental impact' subindicator evaluates the presence of research data on open data impact and reuse cases that pertain to (1) biodiversity, (2) environmentally friendly cities, (3) climate change and connected disasters and (4) energy consumption and the switch to renewables. Table 61 presents an overview of how countries responded to the questions on this topic.

Table 61: Country responses to questions on environmental impact

	*Is there **data on the impact** created by open data on environmental challenges?*	*Is there a reuse case example related to **biodiversity**?*	*Is there a reuse case example related to **environmentally friendly cities**?*	*Is there a reuse case example related to **climate change and connected disasters**?*	*Is there a reuse case example related to **energy consumption and the switch to renewables**?*
EU-27	16 Member States (59 %) report having such data available. **Austria** newly reports this.	23 Member States (85 %) gave an example of a reuse case on this topic.	24 Member States (89 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	23 Member States (85 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	24 Member States (89 %) gave an example of a reuse case on this topic. This has remained stable since 2024.
EFTA	Like in 2024, **Norway** reports having such data.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.	Like in 2024, all three countries gave an example of a reuse case on this topic.
Candidate	**North Macedonia** and **Ukraine** reports having such data.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.	**Serbia** and **Ukraine** gave an example of a reuse case on this topic. This has remained stable since 2024.

(Questions I22, I23, I24, I25 and I26)

The following are some interesting reuse cases reported on this topic.

Reuse case example from Sweden – Vultus

Subdomain

Agriculture and sustainability

Functioning and purpose

Vultus is a precision agriculture platform that provides farmers with field-specific fertiliser recommendations based on satellite imagery, weather forecasts and historical field data. Its primary purpose is to reduce nitrogen overuse, which contributes to greenhouse gas emissions and water pollution, while improving crop yield and input efficiency. The platform uses vegetation indices derived from Sentinel-2 satellite data (via the Copernicus Data Space Ecosystem) and localised weather data from the Swedish Meteorological and Hydrological Institute (SMHI) to assess crop health and predict nutrient needs. This enables farmers to apply the right amount of fertiliser at the right time, minimising environmental impact and maximising productivity.

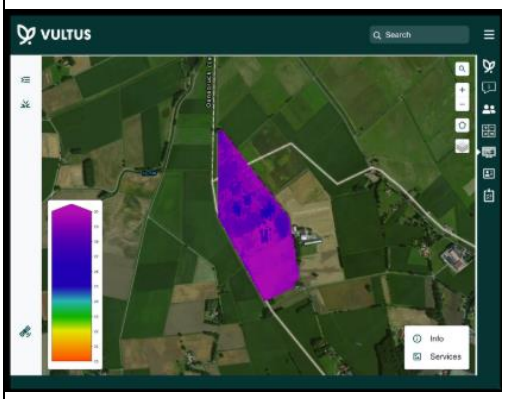

Figure 19: Overview of the Vultus platform dashboard displaying agriculture data on satellite imagery.

Target group

The primary users of Vultus are farmers, agronomists and agricultural cooperatives seeking to adopt data-driven, climate-smart farming practices.

Datasets used

Vultus's analytics are powered by a combination of open-access and proprietary datasets:

- Copernicus satellite data (Copernicus Data Space Ecosystem): used to generate vegetation indices (e.g. Normalised Difference Vegetation Index, Normalised Difference Red Edge Index) for monitoring crop health, biomass and water stress;
- weather and climate data (SMHI Open Data Portal): provides real-time and historical weather data for modelling crop growth and nutrient uptake.

Impact

Vultus has demonstrated measurable impact in reducing fertiliser use and improving sustainability in agriculture. In field trials with Swedish starch producer Lyckeby, Vultus's recommendations led to reduced input costs and lower environmental risks without compromising yield. The platform supports farmers in aligning with EU climate targets by reducing nitrous oxide emissions, a major contributor to agricultural greenhouse gases. By reusing publicly funded data from Copernicus and SMHI, Vultus exemplifies how open data ecosystems can drive innovation in climate-smart agriculture. Its model is scalable across geographies and crop types, making it a valuable tool for both individual farmers and national sustainability programmes.

Reuse case example from Portugal – Predictive models for liquid and atmospheric pollutants in Lisbon.

Subdomain

Environmental pollution

Functioning and purpose

The Urban Co-Creation Data Lab in Lisbon developed a set of predictive modelling tools that simulate the propagation of liquid and atmospheric pollutants in urban environments. These tools are designed to support emergency planning and public health protection by forecasting how pollutants might spread in various hazard scenarios. The models use municipal open data to simulate real-time and hypothetical events, such as industrial spills or gas leaks, allowing authorities to pre-emptively design containment strategies and minimise health risks. The initiative reflects a proactive approach to urban resilience, integrating data science into civil protection workflows.

Target group

The primary beneficiaries of this initiative are municipal emergency planners, civil protection services and environmental health authorities.

Datasets used

The predictive models are built using a combination of municipal and national open datasets, including:

- urban infrastructure and terrain data from Lisbon's municipal repositories;
- meteorological data from the Portuguese Institute for Sea and Atmosphere.

These datasets are integrated into simulation engines developed in partnership with the Barcelona Supercomputing Centre, enabling high-resolution modelling of pollutant dispersion across Lisbon's urban landscape.

Impact

The project has demonstrated potential value through two detailed simulations:

- a **natural gas leak** in the Alcântara district was modelled to understand how gas would spread in a busy area containing homes, hospitals and tourist spots;
- a **chemical spill** at Roma-Areeiro train station was simulated to assess risks to nearby residents and infrastructure.

These use cases illustrate how open data can be reused to anticipate environmental hazards, inform emergency planning and support public health protection. By making the models and visualisations publicly available, UrbanDataLab promotes transparency and encourages other cities to explore similar approaches.

Economic impact

The 'economic impact' subindicator evaluates the presence of research data on open data impact and reuse cases that pertain to (1) employment, (2) innovation and adoption of new technologies, (3) entrepreneurship and business creation and (4) productivity. Table 62 presents an overview of how countries responded to the questions on this topic.

Table 62: Country responses to questions on economic impact

	*Is there **data on the impact** created by open data on economic challenges?*	*Is there a reuse case example related to **employment**?*	*Is there a reuse case example related to **innovation and new technologies**?*	*Is there a reuse case example related to **entrepreneurship and business creation**?*	*Is there a reuse case example related to **productivity**?*
EU-27	18 Member States (67 %) report having such data available. This is an increase of two countries, **Latvia** and **Hungary**, from 2024.	20 Member States (74 %) gave an example of a reuse case on this topic.	21 Member States (78 %) gave an example of a reuse case on this topic. This has remained stable since 2024.	20 Member States (74 %), with the recent addition of **Slovenia**, gave an example of a reuse case on this topic.	19 Member States (70 %) gave an example of a reuse case on this topic. This is an increase of two countries, **Austria** and **Slovenia**, from 2024.
EFTA	Like in 2024, **Norway** reports having such data available.	In 2025, **Norway** newly reported an example of a reuse case on this topic.	All three countries gave an example of a reuse case on this topic, with **Norway** as the latest addition.	All three countries gave an example of a reuse case on this topic. This has remained stable since 2024.	In 2025, **Norway** newly reported an example of a reuse case on this topic.
Candidate	Like in 2024, **Ukraine** reports having such data available.	Like in 2024, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.	Like in 2024, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.	Like in 2024, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.	Like in 2024, **Serbia** and **Ukraine** gave an example of a reuse case on this topic.

(Questions I27, I28, I29, I30 and I31)

The following are some interesting reuse cases reported on this topic.

Reuse case example from Latvia – Riga TechGirls

Subdomain

Entrepreneurship and education

Functioning and purpose

Riga TechGirls is an initiative in Latvia dedicated to inspiring and educating women and girls about technology. Its mission is to close the gender gap in tech and foster digital inclusion by integrating open data into practical training programmes. Through initiatives like Work in Tech, the programme equips participants with skills in data analysis, visualisation and IT fundamentals, preparing them for careers in the digital economy.

Target group

The programme targets women and underrepresented groups seeking to enter or transition into technology careers. It also supports aspiring entrepreneurs who want to leverage open data for innovation, while indirectly benefiting employers and the broader tech ecosystem by supplying a digitally skilled workforce.

Datasets used

Participants work with **open datasets**, including:

- **public transport flow data** from the Riga City Council GeoRiga Open Data Portal;
- **demographic and population statistics** from the Central Statistical Bureau of Latvia;
- **budget expenditure and environmental indicators** (e.g. air quality, pollution) from the Latvian open data portal;
- international datasets from the European Data Portal and World Bank Open Data.

Impact

The programme has introduced tens of thousands of women to IT since 2020, with over 45 000 participants in training, hackathons and mentoring programmes, improving digital literacy and employability in Latvia. It fosters entrepreneurship and innovation through hackathons and accelerator-style programmes and promotes inclusion by targeting women and minorities. The use of teaching tools such as Python, SQL, Tableau, and Google Looker Studio, Riga TechGirls enhances data-driven decision-making and tech adoption, indirectly boosting productivity across sectors.

Reuse case example from Lithuania – Rekvizitai company comparison platform

Subdomain

Employment

Functioning and purpose

Rekvizitai is a Lithuanian company comparison platform that aggregates and publishes open data on businesses to enhance transparency and informed decision-making. The platform allows users to compare companies based on size, financial health, number of employees and average salaries. Its primary purpose is to help job seekers evaluate potential employers and assist businesses in benchmarking against competitors.

Target group

The platform serves job seekers, who use it to assess salary levels and company stability, and businesses, which leverage the data for competitive analysis and risk assessment. It also benefits researchers and analysts interested in market trends and labour dynamics.

Datasets used

Rekvizitai.lt combines multiple official open data sources, including:

- **company registry data** from the Lithuanian Register of Legal Entities;
- **employment and salary data** from the State Social Insurance Fund Board (Sodra) (Sodra Open Data);
- **financial indicators** such as turnover and tax compliance from public registers (Lithuanian open data portal).

Impact

Rekvizitai.lt improves **labour market transparency** by publishing average salaries per company and tracking changes over time, enabling job seekers to make informed career decisions. For example, users can view gross salary averages for specific companies and compare them across sectors (salary data example). Businesses benefit from benchmarking tools and application programming interface (API) integration for human resources and customer relationship management (CRM) systems, supporting data-driven decision-making. This contributes to greater market efficiency, reduced information asymmetry, and better matching between employers and employees.

Reuse case example from Norway – Economic impact assessment of open petroleum data

Subdomain

Economic impact assessment

Functioning and purpose

The Norwegian Offshore Directorate (formerly the Norwegian Petroleum Directorate) commissioned an impact assessment to evaluate the economic value of its data management and sharing practices. The directorate manages one of the world's largest petroleum data repositories, and the study aimed to determine how open access to this data contributes to value creation on the Norwegian Continental Shelf.

Target group

The assessment focused on licensees and operators in the petroleum industry, as well as service companies and research institutions that depend on high-quality geological and operational data for exploration, production and innovation.

Datasets used

The analysis covered the directorate's core open datasets (accessible via the Norwegian open data portal), including:

- **FactPages and FactMaps**: detailed data on wells, fields and licenses;
- **geophysical and seismic data**: including historical and new surveys;
- **CO_2 Storage Atlas**: mapping safe storage sites for carbon capture (CO_2 Atlas);
- **seabed mineral survey data**: for future resource development.

Impact

According to the Menon Economics report, the directorate's open data generates annual gains of approximately NOK 1.5 billion for licensees and operators. These benefits arise from time and resource savings, improved data quality and faster decision-making processes. The study emphasises that these gains would not be possible without open data sharing. Beyond immediate cost savings, the report highlights the strategic importance of these datasets for future industries, including carbon capture and storage and seabed mineral extraction, positioning Norway as a leader in sustainable energy transition.

7.5. Recommendations

Countries can use the following general advice to improve on the impact dimension of the ODM methodology. The recommendations are tailored to four nominal levels of maturity, ranging from beginners to trendsetters.

Trendsetters

- Collaborate with the European Data Portal and other national data teams to implement an impact assessment framework for open data. The European Data Portal is currently developing, in collaboration with countries, an impact assessment framework and accompanying toolkit that countries can implement and adapt to their national context.
- In addition, start developing country-specific metrics to measure impact in domains that align with national priorities. Operationalise monitoring metrics and evaluating impact. Rely on a mix of methods (e.g. *ex ante* and *ex post* analyses, structured/semi-structured interviews, use cases, log analyses from the national portal) to gain a variety of insights. Improve your methods iteratively over time.
- Prioritise the understanding of HVD reuse cases and their potential positive impact on society. As part of these efforts, publish and promote successful reuse cases on the portal and regularly interact with data providers and users to better understand their needs and explore potential applications of these datasets. Leverage the momentum created by showcasing the results to rally stronger political support.

Fast-trackers

- Promote and follow up on the performance of products and services built on open data. Consider highlighting the developers of these reuse cases.
- Focus resources on a relevant field or sector to demonstrate impact and use the specifications on HVDs for prioritisation. Set up thematic work groups in these areas. Increase your knowledge on the publication and reuse of data in the domain you have chosen to focus on and start thinking about a definition of impact in this field that can be operationalised through metrics.
- Create a framework for knowledge exchange and enable the development of a community of practice made up of providers and reusers.

Followers

- Start collecting examples of how open data is being reused, even informally, to build internal awareness and momentum.
- Use basic analytics tools: leverage portal statistics (e.g. downloads, views) to begin tracking usage patterns and identify high-interest datasets.
- Conduct short interviews or surveys with known data users to understand their needs and the value they derive from open data.

Beginners

- Organise short sessions or presentations to explain why measuring reuse and impact matters, using simple examples from other countries.
- Begin collecting simple usage data from the national portal (e.g. number of datasets published, views) to establish a baseline.
- Reach out to universities or civic tech groups to identify potential collaborators who can help uncover early reuse cases or provide guidance.

Chapter 8: Conclusions

Countries in Europe have, on average, improved on their open data maturity (ODM) since last year. This resumes a trend of incremental annual improvements following a year of stable maturity in 2024 when the assessment methodology underwent a period update. This means that countries are starting to adjust their practices to meet the higher requirements set for several questions in the ODM assessment and introduce new practices to address the latest policy and technological developments.

In the EU, the **policy** dimension remains the most advanced. The underlying 'policy framework' indicator increased in maturity the most, reflecting the fact that EU Member States continue to update and refine their data strategies with measures in the open data field such as to enhance the availability of dynamic and citizen-generated data and to support reuse by the private sector. Furthermore, Member States continue their efforts to implement the requirements for high-value datasets (HVDs) (Commission Implementing Regulation (EU) 2023/138). While the same categories of data – statistical and geospatial – remain the most mature, meteorological datasets are now reported as the least advanced category, a regression from previous years. Company and company ownership datasets remain one of the less mature categories, but this category has improved year-on-year. Progress is reported on several technical requirements, although these are still less mature than the legal and organisations requirements. The legal and organisations requirements have similar maturity levels as last year.

The **portal** dimension remains the second most mature in the EU. While maturity on this dimension decreased between 2023 and 2024 – partially influenced by changes in the methodology – the maturity level has recovered in 2025, exhibiting the largest year-on-year increase among the four dimension (tied with the year-on-year increase in the quality dimension). In particular, the 'portal features' indicator experienced the greatest improvement, an about-face from 2024. More countries are providing users with APIs and SPARQL end points, offering preview functions for tabular and geospatial data, enhancing user feedback mechanisms, and promoting HVDs on their portals. New data was collected on portal performance through automated tests (a pilot indicator introduced in last year's assessment), which highlights various areas in which open data teams can focus to improve their portals.

Maturity on the **quality** dimension improved the most year-on-year in the EU (tied with the year-on-year increase in the portal dimension). This improvement was primarily driven by improvements in the 'metadata currency and completeness' indicator. More countries are configuring their systems to rapidly synchronise the metadata they harvest when changes are made at the source, making efforts to ensure that time series data are complete and are implementing HVD tags. The countries that improved the most year-on-year typically achieved this by increasing compliance with DCAT-AP. These efforts were often related to new developments of their national portal that focuses more on DCAT-AP standards. Computed metrics on metadata quality (a pilot indicator introduced in last year's assessment) are reported for additional insights on the quality of metadata harvested by the European Data Portal (data.europa.eu) (as a caveat, this tool is undergoing a redevelopment). DCAT-AP compliance, defined strictly using SHACL validation, is generally low. The pilot indicator highlights various areas in which metadata quality can still be improved.

The **impact** dimension again experienced a year-on-year improvement, although to a lesser extent than previous years. Most countries report collaborating between government and civil society or academia to create open data impact in their country and have a definition of open data impact in place. However, as in previous years, examples of reuse cases are still more readily available than are systematically collected data on the impact created by open data. Furthermore, only a limited number of new reuse cases were reported in this year's assessment.

In the year ahead, Member States are expected to continue making their identified HVDs available on their national portals and annotating them with metadata according to the DCAT-AP HVD specification, including references to the European Legislation Identifier (ELI) of the Commission Implementing Regulation and HVD categories. Efforts to make HVDs available in line with the requirements set out in the Regulation may also require further technical upgrades to portals such as implementing APIs at the data level, which should be described in the metadata as available data services.

Following Article 18 of the open data directive, the Commission led a support study for the evaluation of the Directive in 2025. Moreover, a public consultation was held on the European Data Union Strategy in order to understand stakeholder preferences and interlinkages between different data policies. Feeding into its Digital Omnibus initiative, the Commission has proposed on 19 November 2025 to simplify and consolidate existing EU data rules through the data act, combining the open data directive, data governance act, free flow of non-personal data regulation and data act into one piece of legislation for enhanced legal clarity. 2026 will be marked by negotiations of co-legislators on the digital omnibus legislative proposals submitted to the European Parliament and the Council for adoption. Furthermore, the evaluation and revision of the INSPIRE Directive may also change the policy landscape, especially regarding datasets that fall under both the INSPIRE Directive and the Regulation on high-value datasets.

In this changing landscape, open data portals will likely retain their central role as platforms for sharing data from the public sector but continue to evolve into more comprehensive data sharing platforms. Open data teams will therefore continue to navigate the evolving data-sharing landscape and help implement, or coordinate with their peer civil servants, new and complementary government initiatives on data sharing.

Appendix: Methodology

This appendix describes the methodology of the 11th (2025) edition of the annual open data maturity (ODM) assessment.

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Objectives of the open data maturity assessment

Since its launch in 2015, the European Data Portal (data.europa.eu) has been the main point of access at the EU level to public sector information published across Europe. The portal aims to improve access to open data, as well as to foster both high-quality open data publication and the reuse of open data to create impact.

Within this remit, the European Data Portal conducts an annual landscaping exercise of European countries on their ODM. Participation is voluntary, and the scope of the assessment includes the EU Member States, European Free Trade Association (EFTA) countries and candidate countries for EU membership.

The purpose of the ODM assessment is to evaluate the development of countries in making public sector information available and stimulating its reuse. The landscaping exercise offers a benchmarking and learning tool for use at both the national and European levels. The results of the assessment support countries in better understanding their relative level of maturity compared with other countries. The results also capture year-on-year developments in countries' ODM and help in identifying areas for improvement. Furthermore, the exercise also results in evidence-based recommendations on the activities that European countries could adopt to increase their ODM.

The ODM assessment is informed by the EU's open data policies, primarily the open data directive (Directive (EU) 2019/1024) and the implementing regulation on high-value datasets (Commission Implementing Regulation (EU) 2023/138). The ODM assessment also includes questions about data that cannot be made open, such as data covered by the Data Governance Act (Regulation (EU) 2022/868), since having an overview of such data is helpful when making publication plans, and open data portals can be used to assist potential reusers in finding information on what protected data can be reused under specific conditions.

History of the open data maturity assessment

The first three editions of the ODM assessment (2015–2017) used two dimensions to assess ODM: (1) open data readiness and (2) portal maturity, which evaluated policy developments at the national level and the degree of sophistication of national open data portals, respectively. In 2018, a major update to the landscaping methodology was carried out to better reflect open data developments across Europe. This revision of the methodology made the assessment more comprehensive and placed a stronger emphasis on the quality of metadata and the reuse of and impact derived from open data. The scope of the evaluation was broadened to cover four dimensions: (1) policy, (2) portal, (3) quality and (4) impact.

In 2019, additional layers of granularity were added to the four dimensions. The updates to the assessment aimed to provide further stimulus for national open data teams to redirect their focus onto new strategic areas – such as greater prioritisation of high-quality open data publication, active fostering of mechanisms to monitor open data reuse, and the development of advanced portal features such as multifaceted search and user feedback functionalities – and to raise awareness of the need for more inclusive and participative governance structures.

In 2022, the methodology underwent another structured revision. To this end, all four dimensions and related questions were reviewed. Across the four dimensions, questions were streamlined to better include initiatives at the regional and local levels and specific types of open data, such as real-time data and high-value datasets. In addition, the revision introduced a focus on countries' level of preparedness for the European Commission's upcoming implementing regulation on high-value datasets. A major change in the 2022 methodological update was the restructuring of the impact dimension. This was done to better acknowledge the challenge that countries face in assessing the impact of open data and to better distinguish between measuring the reuse of open data and measuring the impact created through that reuse. This involved adding a new indicator, on measuring impact, to the impact dimension.

In 2024, the method underwent another planned revision. The dimensions and indicators remained unchanged from the previous version of the methodology. In the policy dimension, more detailed explanations were requested regarding the national governance structure, and a question was added about the processes in place to update policies/strategies. In the portal dimension, some mature portal functionalities, such as search and download, were removed from the questionnaire. More detailed explanations were requested regarding how data about portal usage and user feedback are used to improve the portal. In the quality dimension, more detailed explanations were requested regarding the workflows and activities of the portal team to ensure that several aspects of high-quality metadata are achieved. Some questions about the type of support offered to data providers were merged due to overlapping responses from survey respondents. No major changes were made to the impact dimension, except that survey respondents needed to provide only one example of a reuse case for each category (instead of a maximum of three) and explain that case in more detail. Questions about high-value datasets were added across all dimensions, since the related implementing regulation was applicable from June 2024. EFTA and candidate countries could choose 'not applicable' when answering questions regarding specific EU legislative provisions and still be awarded full points under the scoring system.

Work approach

The data for the ODM assessment is collected through a voluntary self-assessment questionnaire sent to national open data representatives. This is done in collaboration with the European Commission and the Expert Group on Public Sector Information. Most questions have a predefined list of response options (e.g. 'Yes' or 'No') from which the respondents select. In addition, most questions request additional supporting information, such as a URL linking to relevant material or a description of related activities. Where data is available, responses to questions were prefilled in the country's questionnaire, enabling survey respondents to confirm if last year's response was still valid or provide a new response. This feature was introduced in 2024 to support year-on-year consistency in responses.

Once the completed questionnaires are submitted, the research team validates the responses. First, the team performs a high-level check of each questionnaire for completeness. Following this, countries are given the opportunity to provide input on any missing answers. Then, an in-depth review of the completed questionnaires is conducted. The reviewers assess whether the explanations accompanying the answers are complete, relate to the question and sufficiently justify the response selected. The reviewers mark questions that are insufficiently answered and therefore require further input from the countries. Since the questionnaires were prefilled, allowing the survey respondents to confirm or change their responses, only answers that survey respondents changed from the previous year and answers for new questions were reviewed in detail.

Finally, a consultation round was held in which the survey respondents were invited to provide additional inputs and revise their responses to and supporting explanations for flagged questions. A preliminary scoresheet was shared with the survey respondents to validate the results. The research team finalised the scores based on the responses to the flagged questions.

Indicators and metrics

The indicators within each dimension are assessed through several questions that pertain to specific concepts. The tables below summarise the key concepts assessed for each indicator.

Dimension 1: Open data policy	
1.1. Policy framework	
1.1.1.	▪ Open data policies and strategies are in place at the national, regional and/or local levels. ▪ The open data policies/strategies include action plans with concrete measures.
1.1.2.	▪ The (national) open data strategy incentivises the public and private sectors to reuse open data. ▪ The (national) open data policies/strategies incentivise access to real-time and dynamic data, citizen-generated data and geospatial data. ▪ The (national) open data policies/strategies incentivise the development of data inventories in national, regional and local public bodies.
1.1.3.	▪ Measures are in place to implement the regulation on high-value datasets. ▪ Progress has been made in ensuring that public bodies holding high-value datasets are prepared to denote those datasets as such in their metadata.

Dimension 1: Open data policy	
1.2. Governance of open data	
1.2.1.	▪ An open data governance structure that ensures open data publication at all government levels is in place. ▪ The governance structure enables the development of open data initiatives at the local and regional levels.
1.2.2.	▪ Details of the person or team responsible for open data activities in the country are publicly available. ▪ A document describing the responsibilities and working approach of the national open data team (and possibly those of regional and/or local teams) is publicly available. ▪ Regular exchanges between the national open data team and the team maintaining the national and/or local portal(s) are ensured.
1.2.3.	▪ Open data officers have been appointed at each public body level. ▪ Regular exchanges between the national open data team and open data officers are ensured. ▪ Regular exchanges between open data officers, data providers and data reusers are ensured.
1.3. Open data implementation	
1.3.1.	▪ Data publication plans exist at the public body level, and progress against these plans is monitored at the national level. ▪ The number of public bodies still charging above the marginal costs for datasets is monitored.
1.3.2.	▪ Measures are in place to address the challenges faced in implementing the aforementioned open data policies/strategies. ▪ There are activities to assist data holders in making their data publicly available. ▪ There are processes in place to update the policies/strategies.
1.3.3.	▪ Training activities for civil servants working with (open) data are in place. ▪ Training activities result in certification and/or are formally recognised as professional development for civil servants. ▪ Society-wide open data literacy initiatives are in place.

Dimension 2: Open data portal	
2.1. Portal features	
2.1.1.	▪ Portal features ensure the discoverability of and access to datasets (including through APIs) and relevant content. ▪ Portal users can find documentation about using APIs and other tools that enable working with metadata, such as through search functionalities.
2.1.2.	▪ Advanced features enable users to provide content for the portal, give feedback on existing content and rate featured datasets.
2.1.3.	▪ The portal enables users to find information and news on relevant open data topics in the country.
2.1.4.	▪ The portal enables interaction and exchange between reusers and publishers.
2.1.5.	▪ Use cases are promoted through a designated section on the portal and mapped to the open data on which they are based. ▪ Reusers can submit use cases to the portal.
2.1.6	▪ Preview functions for both tabular and geospatial data are available.
2.1.7.	▪ The portal has features to promote the visibility and reuse of high-value datasets.
2.2. Portal usage	
2.2.1.	▪ Traffic to the portal (e.g. number of unique visitors, visitor profiles, percentage of outgoing portal traffic generated through APIs, number of downloads) is monitored by the portal team.
2.2.2.	▪ Analytics tools are used to derive insights into users' behaviour and needs. ▪ These insights are embedded in the portal update cycles.
2.2.3.	▪ The most and least consulted categories and datasets are known. ▪ The most used search keywords are known, and updates are performed to ensure greater discoverability of available content.
2.2.4.	▪ API usage is monitored and the results are used to gain insights into user profiles.
2.3. Data provision	
2.3.1.	▪ Most data providers can submit data to the national portal. ▪ Data providers that do not contribute to the national portal have been identified, and actions have been taken to enable data publication from these sources.
2.3.2.	▪ Local or regional data sources are discoverable through the national portal. ▪ Metadata from local or regional data sources is harvested automatically.

Dimension 2: Open data portal	
2.3.3.	▪ Access to real-time data is provided through the national portal. ▪ The percentage of real-time data in all data featured on the portal is known.
2.3.4.	▪ A separate section exists on the portal where community-sourced/citizen-generated data can be uploaded.
2.4. Portal sustainability	
2.4.1.	▪ Measures are in place to ensure that the portal reaches its target audience. ▪ The national portal has accounts and an active presence on social media platforms. ▪ The portal team helps to enhance the visibility of the portal and the featured datasets by organising/attending information sessions and/or events to promote the national portal.

Dimension 3: Open data quality	
3.1. Metadata currency and completeness	
3.1.1.	▪ A predefined approach is in place to ensure that metadata is up to date.
3.1.2.	▪ Mechanisms are in place to ensure that changes at the source are reflected with minimal delay on the national portal.
3.1.3.	▪ The portal provides access to a vast range of historical and current data.
3.1.4.	▪ Mechanisms are in place to ensure the interoperability of high-value datasets with those of other countries.
3.2. Monitoring and measures	
3.2.1.	▪ Mechanisms are in place to monitor the quality of metadata. ▪ Information on metadata quality is available to the broader public.
3.2.2.	▪ Guidelines and/or tools are available to assist data providers in choosing the correct licence for their data. ▪ The compliance level in terms of correct licensing information is monitored.
3.2.3.	▪ Support (e.g. documentation, tools, a helpline) is in place to assist data providers in improving data quality.
3.3. DCAT-AP compliance	
3.3.1.	▪ The national portal follows the DCAT-AP framework or is interoperable with it.
3.3.2.	▪ Compliance with the DCAT-AP standard regarding mandatory, recommended and optional classes is monitored.

Dimension 3: Open data quality	
3.3.3.	▪ Monitoring activities on the percentage of accessible distributions (i.e. the availability of 'accessURL' and 'downloadURL' properties) are in place.
3.4. Deployment quality and linked data	
3.4.1.	▪ A model (e.g. the 5-star open data model or similar) is used to assess the quality of data deployment. ▪ Activities are in place to familiarise data providers with ways to ensure the provision of high-quality data.
3.4.2.	▪ The percentage of published open data that complies with the chosen quality model is known.

Dimension 4: Open data impact	
4.1. Strategic awareness	
4.1.1.	▪ Reuse of open data is monitored at the national, regional or local level, for example through the national portal. This includes monitoring the reuse of high-value datasets.
4.1.2.	▪ Activities are in place at the public body level to boost and monitor the reuse of bodies' own published data.
4.1.3.	▪ A definition of reuse is in place. ▪ A methodology to measure the impact of open data is in place.
4.2. Measuring reuse	
4.2.1.	▪ Activities are in place to understand which datasets are reused and how, for example: ○ automated feedback mechanisms are in place to track users' access to datasets; ○ interviews/workshops are conducted with reusers to gather feedback; ○ surveys / other extensive research tools are used to measure the reuse of open data.
4.2.2.	▪ Activities are in place to better understand reusers' needs, for example: ○ feedback sessions with portal users are conducted regularly; ○ social media sentiment analysis is used.
4.2.3.	▪ A process is in place to systematically gather reuse cases. ▪ Reuse cases are classified according to categories (e.g. environmental, social, economic)
4.3. Created impact	
4.3.1.	▪ Data on the impact created by open data on governmental challenges is

Dimension 4: Open data impact	
	available in the country. ▪ Various reuse examples exist that showcase the impact of open data on: o increasing government efficiency and effectiveness in delivering public services; o increasing the transparency and accountability of public administrations; o enabling better policy- and decision-making.
4.3.2.	▪ Data on the impact created by open data on societal challenges is available in the country. ▪ Various reuse examples exist that showcase the impact of open data on: o better including marginalised groups and reducing inequality; o raising awareness of urban housing issues; o raising awareness of health- and well-being-related issues; o raising awareness of educational issues.
4.3.3.	▪ Data on the impact created by open data on environmental challenges is available in the country. ▪ Various reuse examples exist that showcase the impact of open data on: o raising awareness of biodiversity-related topics (e.g. air and water quality); o enabling more environmentally friendly cities; o raising awareness of climate change and related disasters; o encouraging lower energy consumption by reducing fuel use and switching to renewables.
4.3.4.	▪ Data on the impact created by open data on the economy is available in the country. ▪ Various reuse examples exist that showcase the impact of open data on the following indicators of economic growth: o employment, o technology and innovation, o entrepreneurship and business creation, o productivity.

Scoring

Countries are scored on a list of questions relating to each indicator. Each question-and-answer selection is worth a different number of points. Where relevant, choosing 'not applicable' as an answer is worth full points, for example when EU legislation does not apply to a country. The scores for the individual questions sum together to provide a total score for the indicator. In turn, the indicator scores are added together to give scores for the dimensions. The maximum scores for the indicators and dimensions are shown in Table 63. The overall maturity score is calculated as the weighted percentage of all the dimensions, meaning that each dimension contributes 25 % towards the overall maturity score.

Table 63: Scoring scheme of the ODM assessment

Dimension	Indicator	Number of scored questions	Maximum score per indicator	Maximum score per dimension
Policy	Policy framework	13	320	640
	Governance of open data	8	180	
	Open data implementation	7	140	
Portal	Portal features	21	230	670
	Portal usage	9	180	
	Data provision	8	150	
	Portal sustainability	5	110	
Quality	Metadata currency and completeness	6	140	630
	Monitoring and measures	8	160	
	DCAT-AP compliance	7	165	
	Deployment quality and linked data	7	165	
Impact	Strategic awareness	7	140	580
	Measuring reuse	4	120	
	Created impact	20	320	

Pilot indicator: automated metrics of metadata quality

Metrics were extracted from the metadata quality assessment (MQA) to quantitatively evaluate metadata quality. The MQA evaluates the quality of metadata of each catalogue harvested by data.europa.eu.

Five metrics were reported in the MQA as a pilot indicator of ODM quality. The level of compliance with these five metrics was taken for one catalogue per participating country. These metrics are evaluated largely based on the use of specific data catalogue vocabulary application profile (DCAT-AP) properties and the content of these properties in relation to specific controlled vocabularies across distributions in the catalogue. A summary of the metrics and their definitions is provided in Table 64.

Table 64: Selected metrics from the metadata quality assessment

Metric	What is being measured?	How is it measured?
DCAT-AP compliance	DCAT-AP compliance is calculated across all sources and datasets available in a catalogue. This check is only performed if the metadata is originally harvested as a DCAT-AP or as a valid derivate. DCAT-AP is a specification for describing linked public data in Europe.	The metadata is validated against a set of SHACL shapes. The metadata is not compliant if the SHACL validation reports at least one issue. The MQA uses data.europa.eu's DCAT-AP SHACL validation service.
Machine-readable	Checks if the format of the distribution is machine-readable.	The distribution is considered machine-readable if the specified format is contained in the corresponding data.europa.eu GitLab repository vocabulary. Distribution: **dct:format**
DownloadURL	The downloadURL is a direct link to the referenced data.	It is checked whether the property is set or not. Distribution: **dcat:downloadURL**
Licence information	A licence is valuable information for the reuse of data.	Whether the property is set or not is checked. Distribution: **dct:license**
Licence vocabulary	We would like to limit the provision of incorrect licence information. For example, we encounter many Creative Commons licences that lack versioning.	This metric describes all dimensions that the MQA examines to determine the quality. The dimensions are derived based on the principles of findability, accessibility, interoperability and reusability. The MQA recommends and credits the use of controlled vocabularies. The data.europa.eu portal publishes its controlled vocabularies in GitLab. The vocabularies are derived from the EU vocabularies. Distribution: **dct:license**

Pilot indicator: automated metrics of portal performance

In addition to gathering qualitative information on portals, there are technical/quantitative ways to evaluate portals. These tests extend the scope of ODM through standardised tools. Automated tools are online tests through which website URLs are entered and assessed on several criteria. As a pilot, four indicators (mobile friendliness, page speed, security and web accessibility) were measured using standardised online tests. The home page of the main open data portal reported in the ODM survey for each participating country was evaluated.

Mobile-friendliness

The mobile-friendliness indicator assesses how well a website is adapted for access on mobile devices, ensuring a seamless user experience for visitors on smartphones and tablets. This indicator is measured through the Experte mobile-friendly test, which runs checks on the following key factors.

- **Viewport and zoom control configuration.** The viewport meta tag needs to be set correctly in order for mobile-friendly pages to work well on devices of different sizes and orientations. In general, this means that the viewport is set with the content width equal to the device width. While it is possible for pages with an alternate viewport configuration to be mobile friendly on certain devices, they may not work equally well on all devices. The zoom control check verifies if the configuration of the viewport hampers the user's ability to pinch and zoom the page. In general, not using the scale-related viewport settings should result in your page being zoomable on most mobile browsers. However, the improper use of these settings (user scalable, maximum scale, minimum scale) could result in hampering access to some content on the page. Some mobile-friendly pages prevent user zoom by design, and the Bing test takes that into account before flagging an error.
- **Width of page content.** In general, the content width should not exceed the screen width. The Bing test has some tolerance built in, but any page that requires excessive horizontal panning will be flagged for the error 'Page content does not fit device width'.
- **Readability of text on the page.** It is important to understand that readability is a function not just of font size, but also of viewport scaling. It is useful to think of readability as the average area occupied by text when the page is fully zoomed out to fit the device's width.
- **Spacing of links and other elements on the page.** This indicator is related to touch friendliness. The Bing test looks at all input elements and hyperlinks on the page to see if they occupy an area considered 'tap-friendly' at maximum zoom-out. If that is not the case, the page will be flagged with 'Links and tap targets are too small'.
- **Use of incompatible plug-ins.** Another warning that Bing detects is when the page is incompatible with plug-ins (e.g. Flash) or the page is otherwise not intended for use on mobile devices. The Bing tool detects any error messages that are produced by the page on a typical mobile device and currently captures those as warnings in the mobile friendliness test.

Additionally, the tool checks for and reports on resources that are needed to analyse the page fully but that the Bing tool was not able to assess due to robots.txt constraints. This way, rendering issues can be fixed by webmasters by updating robots.txt in such a way that Bing can accurately determine the mobile friendliness of the sites. To analyse a website, the Bing mobile crawler fetches and renders the page, extracting important features that are used by the tool to determine how the page performs

against each of the above factors. The outcomes are then aggregated to provide a consolidated mobile friendliness verdict for the page.

The scoring is as follows:

- if a website passes all the tests, a score of 100 % is attributed;
- if a website fails any of the tests, a score of 0 % is attributed.

Speed and performance

The speed and performance of a website are important parts of its usability. This indicator measures a selection of speed and performance standards from Google's page speed insights.

The following indicators are included:

- **Time to interactive** is the amount of time it takes for the page to become fully interactive. This is an important user-centric metric because it measures how quickly visitors are able to fully interact with the page. It measures a page's load responsiveness and helps identify situations in which a page looks interactive but, in fact, it is not.
- **First contentful paint** measures the time from the start of loading to when elements of the content of the page appear on the user's screen (including images, text, scalable vector graphics and non-white elements). It measures the time from when the page is completely blank until the first element appears on the screen
- **Largest contentful paint** measures the time a website takes to show the user the largest piece of content on the screen, complete and ready for interaction.
- **Cumulative layout shift** measures the largest burst of layout shift scores for every unexpected layout shift that occurs during the entire lifespan of a page. A layout shift occurs whenever a visible element changes its position from one rendered frame to the next.

Each website either passes or fails based on the thresholds set by the tool (Table 65).

Table 65: Google page speed insights thresholds

Test	Pass threshold
Time to interactive	Less than 3.8 seconds
First contentful paint	Less than 1.8 seconds
Largest contentful paint	Less than 2.5 seconds
Cumulative layout shift	Less than 0.1 milliseconds

Security

All URLs were run through the publicly available security testing tool internet.nl, which was developed by the Dutch national government. This tool tests several complementary items, which are considered to contribute to basic cybersecurity hygiene. Each test results in either a pass or fail based on whether or not the URL meets the requirements set.

- **IPv6: reachable through a modern internet address?** Overall, this test checks if the website is reachable for visitors using a modern address (IPv6), making it fully part of the modern internet. The test includes the following subtests.
  - **IPv6 addresses for name servers.** This test checks if your domain name has at least two name servers with an IPv6 address.

- **IPv6 reachability of name servers.** This test checks if all name servers that have an AAAA record with an IPv6 address are reachable through IPv6.
- **IPv6 addresses for web servers.** This test checks if there is at least one AAAA record with an IPv6 address for a web server.
- **IPv6 reachability of web servers.** This test checks if it is possible to connect to a web server through IPv6 on any available ports (80 and/or 443). Additionally, all IPv6 addresses that are received from the name servers are tested. A partial score is given if not all IPv6 addresses are reachable. If an IPv6 address is (syntactically) invalid, it is considered unreachable.
- **Same website on IPv6 and IPv4.** This test compares the response and content received from a web server over IPv6 with that received over IPv4.

- **Domain name system security extensions (DNSSEC): domain name signed?** This test checks if the domain is signed with a valid signature (DNSSEC). If so, visitors with domain signature validation enabled are protected against manipulated translation from the domain into rogue internet addresses.
  - **DNSSEC existence** checks if the domain, more specifically its start of authority record, is DNSSEC signed. If a domain redirects to another domain through a canonical name (CNAME), then it also checks if the CNAME domain is signed (which is conformant with the DNSSEC standard). If the CNAME domain is not signed, the result of this subtest will be negative.
  - **DNSSEC validity** checks if the domain, more specifically its start of authority record, is signed with a valid signature, making it 'secure'.
- **Hypertext transfer protocol secure (HTTPS): secure connection?** Overall, this test checks if information in transit between the website and its visitors is protected against eavesdropping and tampering. This includes the following subtests.
  - **HTTPS available** checks if the website is reachable on HTTPS. If so, it also checks in the below subtests whether HTTPS is configured sufficiently securely in conformance with the *IT Security Guidelines for Transport Layer Security (TLS)* from National Cyber Security Centre in the Netherlands. HTTPS guarantees the confidentiality and integrity of the information exchanged. Because how (privacy) sensitive and valuable information is depends on the situation, a secure HTTPS configuration is important for every website. Note that, for performance reasons, the tests in the HTTPS test section are only run for the first available IPv6 and IPv4 addresses.
  - **HTTPS redirect** checks if a web server automatically redirects visitors from HTTP to HTTPS on the same domain (through a 3xx redirect status code like 301 or 302) or if it offers support for only HTTPS and not HTTP. If the server does redirect visitors, a domain should first upgrade itself by redirecting to its HTTPS version before it redirects to another domain. This also ensures that the HTTP strict transport security (HSTS) policy will be accepted by the web browser. Note that this subtest is only conducted if the given domain correctly redirects from HTTP to HTTPS. An eventual further redirect to a different domain (including a subdomain of the tested domain) is not tested.
  - **HTTP compression** makes a secure connection with a web server vulnerable to a browser Reconnaissance and exfiltration via adaptive compression of hypertext attack. However, HTTP compression is commonly used to make more efficient use of the available bandwidth. This subtest checks if a web server supports HTTP compression at the root

directory level. However, it does not check additional website sources like images and scripts.

- **HSTS** checks if your web server supports HSTS. Browsers remember HSTS per (sub)domain. Not adding a HSTS header to every (sub)domain (in a redirect chain) may leave users vulnerable to man-in-the-middle attacks. Therefore, this subtest checks for HSTS on first contact (i.e. before any redirection).
- **Transport layer security (TLS) version** checks if a web server supports only secure TLS versions. A web server may support more than one TLS version.
- **Cyphers (algorithm selections)** checks if a web server only supports secure (i.e. 'good' and/or 'sufficient' cyphers (also known as algorithm selections)). An algorithm selection consists of cyphers for four cryptographic functions: (a) key exchange, (b) certificate verification, (c) bulk encryption and (d) hashing. A web server may support more than one algorithm selection.
- **Cypher order** checks if a web server enforces its own cypher preference ('I') and offers cyphers in accordance with the prescribed ordering ('II').
- **Key exchange parameters** checks if the public parameters used in Diffie–Hellman key exchange by a web server are secure.
- **Hash function for key exchange** checks if a web server supports secure hash functions to create the digital signature during key exchange.
- **TLS compression** checks if a web server supports TLS compression. The use of compression can give an attacker information about the secret parts of encrypted communication. An attacker that can determine or control parts of the data sent can reconstruct the original data by performing a large number of requests. TLS compression is used so rarely that disabling it is generally not a problem.
- **Secure renegotiation** checks if a web server supports secure renegotiation.
- **Client-initiated renegotiation** checks if a client (usually a web browser) can initiate a renegotiation with a web server. Allowing clients to initiate renegotiation is generally not necessary and leaves a web server open to denial-of-service attacks inside a TLS connection. An attacker can perform similar denial-of-service attacks without client-initiated renegotiation by opening many parallel TLS connections, but these are easier to detect and defend against using standard mitigation procedures.
- **Zero round trip time resumption** checks if a web server supports zero round trip time resumption.
- **Online Certificate Status Protocol stapling** checks if a web server supports the TLS certificate status extension, also known as Online Certificate Status Protocol stapling.
- **Trust chain of certificate** checks if it is possible to build a valid chain of trust for a website certificate. To have a valid chain of trust, the certificate must be published by a publicly trusted certificate authority, and the web server must present all necessary intermediate certificates.
- **Public key of certificate** checks if an elliptic curve digital signature algorithm or a Rivest–Shamir–Adleman algorithm digital signature of a website certificate uses secure parameters.
- **Signature of certificate** checks if the signed fingerprint of a website certificate was created with a secure hashing algorithm.

- **Domain name on certificate** checks if the domain name of a website matches the domain name on the certificate.
- **Domain-name-system-based authentication of named entities (DANE) existence** checks if the name servers of a website domain contain a correctly signed TLS authentication record for DANE. As DNSSEC are a precondition for DANE, this test will fail if DNSSEC are missing on the website domain or if there are DANE-related DNSSEC issues (e.g. no proof of 'denial of existence').
- **DANE validity** checks if the DANE fingerprint presented by a domain is valid for the web certificate.

Accessibility foundations

This indicator evaluates the accessibility status of websites, assessing how usable websites are for a large variety of users (regardless of, for instance, their visual abilities). The open-source Axe-core tool (browser extension) is used to measure this indicator. This indicator can also be defined as the extent to which websites comply with the foundational parts of the EN 301 549 standard (web content accessibility guidelines (WCAGs) level AA).

The tool takes into account the most recent WCAGs and covers 20 of the 50 success criteria, with tests across all of the four main principles (perceivability, operability, understandability and robustness). For this pilot indictor, the following seven success criteria were measured.

- **Alternative text (WCAG 1.1.1)** evaluates whether a website offers text alternatives for non-text content, enabling it to be transformed into formats like large print, braille, speech, symbols or simplified language to meet diverse user needs.
- **Colour contrast (WCAG 1.4.3)** evaluates if the visual presentation of text and images of text on a website has a contrast ratio of at least 4.5:1.Exceptions include cases of large text, text or images part of an inactive user interface component and text that is part of a logo or brand name.
- **Page/document title (WCAG 2.4.2)** evaluates if a website has titles that describe the topic or purpose.
- **Link name (WCAG 2.4.4)** evaluates the clarity and accessibility of links on a website.
- Language attribute (WCAG 3.1.1) evaluates if the primary language of each web page is specified in a way that can be identified by software, such as screen readers and search engines.
- **Valid language code (WCAG 3.1.2)** evaluates if the language of each passage or phrase in a website's content can be identified and defined by software, allowing assistive technologies (e.g. screen readers) to accurately convey content in the appropriate language.
- **Name, role and value (WCAG: 4.1.2)** evaluates the accessibility and compatibility of user interface components of a website with assistive technologies.

If no violations are found, the website is at least potentially accessible. If violations are found, the website is at least not fully accessible. The tool reports on the number and types of violations found.

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