The Open Data Directive: Potential and Pitfalls for the Social Sciences

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Abstract

The Open Data Directive (ODD) constitutes a key element of European digital policy, designed to promote the reuse of public sector data. It aims to enhance government transparency, public participation, and economic growth by regulating conditions for public data reuse. While the ODD does not establish a general right to data access, it strengthens the reuse of publicly available datasets and introduces High Value Datasets (HVDs), which must be made available free of charge and with minimal restrictions.

For the (social) sciences, the ODD creates a dual role: As users, (social) scientists benefit from access to public sector data, particularly HVDs encompassing geospatial, environmental, and statistical data. Simultaneously, the directive imposes obligations on (social) scientists conducting publicly funded research. Under the ODD, publicly funded research data must be reusable for commercial and non-commercial purposes when deposited in institutional or subject-based repositories. Notably, the directive distinguishes between research data and scientific publications, explicitly excluding the latter from its scope. By facilitating access to valuable datasets while promoting open science, the ODD presents an opportunity for the social sciences. It aligns with broader trends toward open data and transparent governance, making research results more accessible and reusable. However, implementation depends on national policies, and limitations – such as restrictions on access to public undertakings' data or dynamic datasets – persist. Despite these constraints, the directive marks a significant step toward greater openness in research and public sector information.

1. Introduction

For over two decades, Western societies have embraced "open government data" as a central credo of digital policy. Previously, the principle of official secrecy – long prevalent in continental Europe, and legally and culturally

ingrained in state bureaucracies – restricted access to government information (Ramge and Mayer-Schönberger, 2020, p. 169).

The groundwork for a shift towards *openness* was established over 50 years ago, as the 1970s brought a new understanding of the state–citizen relationship.[1] At the time, the perception emerged that government accountability requires transparency, which would enable citizens to participate more fully (Henninger, 2013, p. 81). This was the starting point of the open government debate in its transparent and participatory form (Lederer, 2015, p. 56). With the advancing digitalisation of the 1980s, the discourse expanded. Beyond the democratic and participatory goals, the commercial potential of information became evident as it became easier to exchange, analyse, and leverage machine-readable data (Aichholzer and Burkert, 2004, pp. 3–4; Stieglitz, Orszag and Orszag, 2000, 53 et seq.).

Finally, in 2009, US President Barack Obama gave a significant international boost to the principle of openness. His administration's "Memorandum on transparency and open government" (Obama, 2009b) and the "Open government directive" (Obama, 2009a) emphasised a commitment to transparent, participatory, and collaborative governance, promoting the proactive release of government data. This commitment had a global impact, raising awareness about transparent administration and the value of open government data.

Back in 2000 – when Obama had only just missed out on a seat in Congress – the European Union was already considering opening up government data, due primarily to the potential economic and societal benefits of re-using government information (European Commission, 2000, 26 et seq.). The first EU-wide standardisation occurred in 2003 with the Directive on Public Sector Information (PSI) (Directive 2003/98/EC). Following multiple revisions, the PSI Directive was updated and replaced in 2019 by the Open Data Directive (ODD) (Directive (EU) 2019/1024), marking a significant milestone in the EU's legal approach to openness. It is this milestone that is at the centre of this investigation, which we shall consider from a scientific perspective.

As government-funded science both relies on and generates data, it has consistently been part of the openness debate, now reinforced by the ODD. Science is expected not only to benefit from open data, but also to contribute to it, specifically through open science data. This expectation spans

1 For a comprehensive and well-founded examination of the genealogy of the term "open data", see Gray (2014).

all disciplines, including such traditional fields as medicine and natural sciences, and is increasingly extending to the social sciences. This study aims to assess how the social sciences can benefit from the ODD and the extent to which they are obligated to contribute within its framework.

Section 2 offers a comprehensive and coherent account of the concept of open government data. It begins by providing a concise overview of the rationale behind open government data (2.1) and then proceeds to examine it through the lens of the state of data (2.2). In order to gain further insights, we then analyse its components and their general implications (2.3), which lay the groundwork for examining the ODD as an extension of the broader concept of open government in Section 3. This section begins by exploring the historical foundations of the ODD (3.1) and then addresses the core question of the level of data openness it ensures, grounded in the concept of "openness" (3.2).

Section 4 focuses specifically on the role of the social sciences within the ODD, exploring the extent to which social scientists can benefit from the Directive when their research relies on government data (4.1), as well as to what extent they must also contribute data themselves when their research is government funded (4.2).

Methodologically, this chapter employs the full range of legal interpretative approaches for its jurisprudential sections. Using grammatical, systematic, historical, and teleological methods, it examines the varying degrees of openness mandated by the ODD and the associated rights and obligations for (social) sciences. The analysis also incorporates European methodology, acknowledging the unique linguistic considerations of European law due to the multilingual nature of legal texts and recitals.

2. Open (government) data – a spectral concept

2.1 Understanding open government data through its rationale

The rationale behind open government data cannot be distilled into a single line of reasoning, but has several legitimisation approaches. The objectives can be grouped into three main categories: first, enhancing transparency in government and administration, as aligned with the principle of freedom of information (Kitchin, 2014, p. 56; Mayernik, 2017, p. 2); second, strengthening participation and collaboration (Filippi and Maurel, 2015,

p. 2; Kitchin, 2014, p. 55); and third, fostering innovation and economic growth (Kitchin, 2014, p. 55; Richter, 2021, p. 43). While transparency and participation were the initial focus, attention has gradually shifted towards ensuring that open government data serves as a valuable resource for industry and academia, enabling the creation of new scientific knowledge and economic value (Borgesius, van Eechoud and Gray, 2015, p. 2083; Stieglitz, Orszag and Orszag, 2000, 53 et seq.). Consequently, the public sector is encouraged to make as much of its data as available as possible, ensuring that everyone – the scientific community included – can access and re-use them for new purposes at no cost (Geiger and von Lucke, 2012, 268 et seq.).[2]

2.2 Understanding open government data as a data state

Apart from its underlying rationale, open government data can also be viewed simply as a description of a data state (Open Data Institute, 2020). Data are considered "open" if they can be freely used, modified, and shared by anyone for any purpose (Open Definition, no date). Adding "government" specifies the source of such data. In this sense, "open data" contrasts with "closed data", which are accessible and usable only within an organisation, with third-party access restricted. These terms – open and closed – define opposite ends of a data accessibility spectrum. Between these poles lie "shared data", which are also available to third parties, but under certain restrictive conditions (Fia, 2021, p. 189).

2 In 2007, a working group in Sebastopol, California, established the "8 principles of open government data", which have since become the standard for assessing openness in government records. These principles outline open government data as public data that are complete, primary, timely, accessible, machine-processable, non-discriminatory, non-proprietary, and license-free, with compliance that is reviewable. For more details, see The Annotated 8 Principles of Open Government Data (no date).

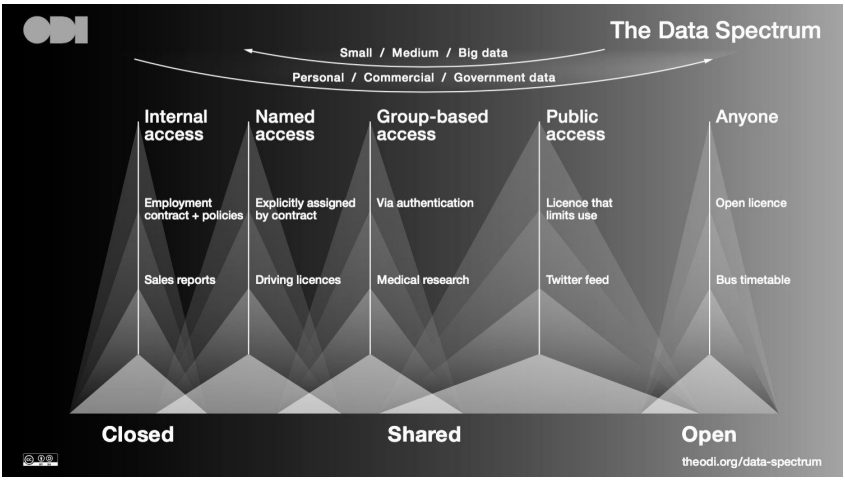

Figure 1: The data spectrum (Source: ODI, 2020)

Viewing open data as a state of data provides the advantage of defining it clearly and removing ideological undertones. However, this perspective should not mask the fact that distributing data as "open" is often driven by specific motives, which may not align with those stated publicly. For instance, a government may release mobility data to justify a new traffic management system, implying transparency. Yet, it may withhold other data that could have suggested alternative decisions.[3] For data users, these motives might be secondary if the data's source and quality are transparent, as their interest may not necessarily lie in scrutinising government actions.

2.3 Open – government – data: a fully-fledged definition?

A more detailed definition of open (government) data requires analysing each element of the term. However, these elements cannot be viewed in isolation, as their meanings become interdependent when combined into the concept of open data.

3 This problem is part of the wider issue that data are not neutral representations of the physical world, but that there is a certain distance between representation and object, as is repeatedly emphasised in science and technology studies. Supposedly neutral images are referred to as "view from nowhere" in order to emphasise the impossibility of a neutral perspective, which is inherent in every representation (Helmreich, 2011, p. 1229).

2.3.1 Openness

A closer examination of the criterion of "openness" reveals that earlier definitions encompass only the universally agreed-upon core elements among all stakeholders. Over time, additional criteria have been introduced to designate data as "open". The first widely recognised proclamation of open data stipulated, among other requirements, that data be machine-readable (Fia, 2021, p. 190).[4] Subsequent frameworks have not only heightened the technical standards for openness, but have also incorporated the underlying motivations for providing the data directly into the definition.[5]

The concept of "openness" is inherently gradual rather than binary, allowing for the addition of various requirements. This nuance is reflected in Tim Berners-Lee's "5-star open data model" (W3C, 2013).[6] Technical specifications for data openness are crucial for findability and reusability, and should not be underestimated. However, from a legal perspective, data are considered "open" if they are free from terms of use that impose restrictions beyond what the law requires. Additionally, it is important to recognise that, in light of citizens' fundamental rights, not all data should be publicly accessible. For example, making personal data (e.g., health information) openly available could expose individuals to significant risks.

2.3.2 Data

The term "data" serves as the object that the adjective "open" more precisely describes. Despite being central to the *datafication* movement since the 1990s,[7] its fundamental meaning remains unclear. Generations of scientists have attempted to define it. For the purposes of this chapter, it suffices to understand data as "information encoded in a way that can be processed

4 The ODD defines a machine-readable format as a "file format structured so that software applications can easily identify, recognize and extract specific data, including individual statements of fact, and their internal structure" (Art. 2(13)).

5 The Open Data Charter incorporated the potential of Open Data to foster transparency and citizen engagement, as well as to spur inclusive economic development (see ODC, no date).

6 Tim Berners-Lee is not only a strong voice in data policy, but also set out the basic structure of the World Wide Web as we know it with his paper "Information management: a proposal" (Berners-Lee 1989, 1990).

7 Datafication refers to the ongoing process of collecting, storing, and analysing digital data in all areas of society.

by machines" (Zech, 2015, p. 193). This rather axiomatic definition, which heavily emphasises the term's digital and semantic aspects, is justified by the fact that data are typically shared for their content and can only be truly open if at least shared in digital form.[8]

2.3.3 Government

Finally, at first glance, the term "government" seems clear. However, this is only true if "government" is equated with all state actors who are allowed to exercise sovereign powers to interfere with the rights of citizens.[9] Besides that, states are nowadays frequently active in service administration: they build infrastructure and support people in need with social systems. Moreover, states can even act commercially, setting up companies under private law that do not exercise any sovereign power. In light of the diversification of state activities, actors turned the demand for the state to open its data through the catchy slogan "public money, public data" (Kitchin, 2014, p. 48). As the history of the ODD shows, this demand has increasingly made its way into binding legislation through the various iterations of the directive. Still, to date, not all public sector organisations are obliged to make data openly available.

3. Openness in the Open Data Directive

Although access and re-use of data are two sides of the same coin (Augsberg, 2016, p. 46), the ODD primarily regulates the re-use of data that are already accessible, without creating an obligation to provide access.[10] This seemingly odd separation between access and re-use arises from the division of legislative powers between the EU and its Member States: access to government data has traditionally been recognised as an inherent legislative

8 This is because the transfer of analogue data would be accompanied by significantly higher marginal costs, which would prevent them from being given away free of charge. More time and effort are also required to use analogue data for new purposes, because transferring them requires manual work.

9 In a state governed by the rule of law, this authorisation is typically only granted to state actors.

10 In this respect, the new rules on high value data are the exception to that rule.

power of the Member States, as it touches upon the core of sovereignty.[11] In contrast, the re-use of data can be grounded in the EU's competence to ensure the functioning of the internal market (Article 114 of the Treaty on the Functioning of the European Union (TFEU); Recital 7 of the ODD).

3.1 A brief history of internal market regulation for open public sector data

For several decades, European initiatives have aimed to establish a unified information market. At around the turn of the millennium, the EU began discussing the general re-use of government information from the standpoint of economic value creation and societal benefits (European Commission, 2000, pp. 26 et seq.). Gradually, there has been a growing recognition that public sector information should be viewed not only as a means of promoting transparency, but also as an economic asset capable of adding value.[12] Technological advancements – particularly the rise of digitalisation – have fuelled political aspirations to open up state information resources (Richter, 2021, pp. 49 et seq.).

These efforts culminated in the 2003 PSI Directive, which pursued three primary objectives. First, it aimed to contribute to the creation of a single market for public sector information and to harmonise laws at a minimal level, thereby addressing the divergent provisions and procedures among Member States regarding the use of public sector information sources (Recital 6, PSI Directive). Second, it sought to prevent distortions of competition in the internal information market by ensuring fair, reasonable, and non-discriminatory conditions for re-use (Recitals 1, 8, 25, PSI Directive). Finally, it intended to promote economic growth by facilitating the cross-border use of public sector information. The European legislator recognised this information as an essential raw material for products and services with digital content (Recital 5, PSI Directive).

In 2013, the PSI Directive underwent its first amendment following an evaluation by the European Commission (EC) (Directive 2013/37/EU). The primary reasons for these changes were that, despite earlier progress,

11 Exceptions can only exist where normative requirements on the provision of data fall within a special legislative competence of the European legislator, such as in the environmental sector.

12 While there is a plethora of studies, which argue for economic benefits from opening up government data, there is a lack of hard data supporting these claims (see van Eechoud, 2016, p. 39; Richter, 2021, p. 44).

the internal information market remained both practically and legally fragmented (Wirtz, 2014, pp. 389 et seq.). Additionally, open data policies advocated for the active promotion of open data to enhance the availability and re-use of public sector information with minimal restrictions (Recital 3, PSI Directive 2013). The focus shifted towards an enhanced exploitation of the economic and social opportunities arising from the re-use of information (Recital 5, PSI Directive 2013). This amendment, which also addressed the technically outdated aspects of the PSI Directive, was intended to accelerate this transformation.

In the six years following the last amendment, technological advancements further widened the gap between law and reality. Consequently, the PSI Directive was thoroughly revised in 2019 and has since been referred to as the ODD. This technological progress is notably encapsulated in the term "data-based society" (Richter, 2023d, Recital 30).[13] Accordingly, the promotion of artificial intelligence (AI) was incorporated into the Directive's objectives during the legislative process. The main changes in the new iteration involve expanding the material scope to include public undertakings and research data. Prior to this revision, educational and research institutions were explicitly excluded from the Directive's scope. Since 2013, the EU has taken measures to promote open data, including policies for open access to EU-funded research data (Gobbato, 2020, p. 151; Richter, 2018, p. 53). In light of this, the ODD now also addresses research data.

Moreover, the legislator has revised the compensation rules by establishing the principle of free provision, tightening exclusivity regulations, and promoting real-time access to dynamic data (Recital 4 ODD). Additionally, the ODD now authorises the EC to define a list of High Value Datasets (HVDs) that public authorities and public undertakings in Member States are required to provide in accordance with open data principles, under conditions to be specified in implementing acts.

The ODD pursues three primary objectives. First, it seeks to harmonise laws to create a single market and prevent distortions of competition within it (Recitals 3, 12 ODD). Second, it aims to promote digital innovation by

13 Recitals 10, 11 ODD. Although the focus of the ODD has evolved over the years, its central regulatory object remains the same: it employs the outdated concept of "documents". This term is defined as "any content whatever its medium (paper or electronic form or as a sound, visual or audiovisual recording)" and "any part of such content" (Art. 2 para. 6). Due to the explicit emphasis on content and the medium's independence, data are addressed as a specific type of document.

considering public sector information as essential raw material for products and services that benefit both consumers and companies. The Directive emphasises fostering innovation, particularly regarding AI applications, which it views as transformative for all sectors of the economy (Recitals 3, 9, 13 ODD). Third, it now aims to ensure that the re-use of data contributes to social purposes, such as accountability and transparency, ultimately enabling the public sector to improve the fulfilment of its tasks (Recitals 13, 14 ODD). This addition introduces an original open data aspect to the already-established competition and industrial policy objectives in the new version, although it is more complementary than fundamentally transformative. As an EU directive, it addresses Member States, which then transpose its provisions into national legislation.

3.2 Categories of openness in the Open Data Directive

The ODD's inherent commitment to openness is reflected in its fundamental principle regarding the re-use of documents (Art. 3 para. 1). It mandates that Member States make all existing documents within the Directive's scope re-usable for commercial or non-commercial purposes. For instance, data collected by a municipal transport company could be repurposed to develop a mobility app offering real-time updates, dynamic route planning, and alternative connection suggestions. However, Art. 3, para. 1 of the ODD applies only if a document is accessible. This limitation weakens the Directive's effectiveness through not barring Member States from restricting or excluding access to documents under their national laws (Martini, Haußecker and Wagner, 2022, pp. 7 et seq.; Recital 23 ODD).

As with any guiding principle, the concept of unrestricted re-use is a goal to be pursued to the greatest possible extent. It should thus be regarded as an optimisation requirement that can be satisfied to varying degrees depending on specific parameters. These parameters are manifested in various categories of openness, notably: the absence of access barriers, non-discriminatory access, the level of usage costs, the design of terms of use, machine interpretability, data completeness, and the use of open formats and standards, among others (Beyer-Katzenberger, 2014, pp. 144 et seqq.). The ODD stipulates a range of different specifications concerning these aspects.

3.2.1 Standard licences (Art. 8 ODD)

The first limitation to the general principle of re-use is that data providers may attach conditions to re-use through licenses (Art. 8 ODD).[14] However, these conditions must remain within the Directive's normative framework; they must be "objective, proportionate, non-discriminatory, and justified on grounds of a public interest objective" (Art. 8 para. 1 ODD). Furthermore, they should "not unnecessarily restrict possibilities for re-use and shall not be used to restrict competition" (Art. 8 para. 1 ODD). The legislator imposes substantive legal requirements that any restrictions on re-use must meet. If these are not satisfied, the conditions are unlawful.[15]

The European legislator recommends that Member States use open standard licenses (Art. 8 para. 2 ODD).[16] Currently, a variety of licensing practices exist at the Member State level. In addition to the Creative Commons (CC) and Open Data Commons (ODC) licenses, there are also country-specific licensing models, such as "Data License Germany 2.0" in Germany, "Licence Ouverte" in France, and the "Licentie modellicentie" in Belgium.[17] Furthermore, the use of data is often subject to such conditions as attribution requirements (Recital 44 ODD), protections against alteration, liability limitations, and considerations regarding the use of personal data.[18]

3.2.2 Available formats (Art. 5 ODD)

Another crucial factor that determines the degree of data openness is the format in which the data are available. Data formats are pivotal for the

14 Licensing presents significant challenges for open data as a whole. Essentially, if a user wishes to create a derivative work using two or more datasets, they must assess the license compatibility of all the datasets involved. Conceptually, this assessment yields only two outcomes: either the licenses are compatible or they are not. Therefore, considerations of license compatibility can become a substantial barrier to the re-use of multiple datasets made available under different licenses. In this sense, the need for compatibility assessments hinders the achievement of the EU's open data policy objectives (Graux, 2023, p. 5).

15 Failure to comply with these requirements has no tangible consequences for the licensor.

16 The Commission provides guidance on standard licensing (European Commission, 2014, 2 et seq.).

17 Graux (2023, 7 et seq.) gives a short empirical assessment of the state of play.

18 For individual licenses, see Richter (2023b, Recital 197 et seqq.).

usability *of* the data and shape the economic potential that can be derived *from* them (Richter, 2021, p. 159).

Since the data economy cannot process analogue information, it focuses on digitally structured, semantically meaningful data. Only such data can be processed en masse by machines. For example, environmental information in paper form is far less useful for the market entry of digital weather services than the provision of structured datasets. Indeed, the ODD grants users the right to receive information in any pre-existing format precisely because of the high innovation potential of machine-readable information (Art. 5 para. 1 ODD). Furthermore, it requires the conversion of data into an open, machine-readable, accessible, findable, and re-usable format, insofar as this is "possible and appropriate".

Dynamic data – that is, data updated frequently or in real time, such as sensor-generated weather data (Art. 2 para. 8 ODD) – are subject to specific rules. The ODD establishes that public sector bodies should make dynamic data available for re-use immediately upon collection, providing access through suitable application programming interfaces (APIs) and, where relevant, as bulk downloads (Art. 5 para. 5 ODD).[19]

To prevent undue financial strain on the public sector, the legislator limits both the obligation for public sector bodies to create or modify documents and the requirements for dynamic data (Art. 5 para. 3, Art. 6 ODD).

3.2.3 Charging (Art. 6 ODD)

Open data thrives on free data. Fees can prevent both transparency and data's role as a competitive asset. Thus, the ODD emphasises what Richter (2021, p. 160) has termed a "core competitive parameter", namely the price.

The challenge with fees is that their regulation impacts both data distribution and the potential for data generation (Drexl, 2014, pp. 1 et seq.; Podszun, 2016, pp. 335 et seq.). In the ODD, the legislator has determined that the re-use of documents should generally be free of charge (Art. 6

19 See the European Commission's (2018a, p. 23) findings that "with the growing importance of dynamic data, the insufficient use of APIs is regularly recognized as one of the main barriers for data re-use".

para. 1 ODD).[20] This aligns with the fact that the public sector must, in any case, create large volumes of data so as to fulfil its public duties.

As with any principle, that of cost-free access has exceptions. These are limited to the recovery of marginal costs incurred (Art. 6 para. 1 ODD). The marginal cost approach covers the costs associated with "the reproduction, provision, and dissemination of documents". Accordingly, public sector bodies can charge fees that cover only the marginal costs involved in re-use activities, such as anonymising personal data and protecting commercially confidential information. However, data providers cannot pass on data-generation costs to users and are not permitted to charge a profit (European Commission, 2014, p. 6). In cases where no measures are needed to protect personal or commercial rights, marginal costs are typically close to zero.[21]

3.2.4 Non-discrimination (Art. 11 ODD)

The ODD establishes the general principle of non-discrimination (Art. 11 ODD). Under this principle, any applicable conditions for the re-use of documents must be non-discriminatory for comparable categories of re-use, including cross-border. Any discrimination in re-use conditions therefore requires justification, which can be based on the comparability of the re-use categories (Lundqvist et al., 2015, pp. 100 et seq.). For instance, it is inadmissible to link different re-use conditions to the re-user's personal characteristics. However, differentiating conditions based on the type of use – such as commercial versus non-commercial – is allowed.[22]

20 The principle of free-of-charge access is, to a large extent, the cornerstone of developing open data for public sector information. This journey began in 2003 with the cost recovery principle, which was replaced in 2013 by the binding marginal cost principle. This shift towards reduced costs has consistently been accompanied by concerns about whether a marginal cost regime can ensure high-quality data if public bodies must bear the investment costs themselves.

21 In this case, the Commission recommends that no charges be levied (European Commission, 2014, p. 7). In practice, the marginal cost or free-of-charge policy has led to higher levels of demand satisfaction. However, reliable empirical conclusions on the effectiveness of the charging rules remain elusive, and implementation varies significantly across Member States (European Commission, 2018a, p. 37). Consequently, the effectiveness of the PSI Directive is not readily measurable (Deloitte and European Commission, 2018, pp. 174 et seqq., 250).

22 For more details, see Richter (2023c, Recital 8) and, for a contrary view, Wiebe and Ahnefeld (2015, p. 207).

3.2.5 Exclusivity arrangements (Art. 12 ODD)

A specific application of the principle of non-discrimination is the prohibition of exclusive agreements. This principle mandates that the re-use of documents must be accessible to all potential market participants, even if one or more actors already exploit value-added products based on those documents (Art. 12 para. 1 ODD).[23]

The Regulation seeks to minimise exclusivity agreements by public bodies, ensuring public sector information is available to all market participants under equal terms. This aims to dismantle existing information monopolies and prevent the formation of new ones, thereby opening the market and reducing competition distortions.

Under Art. 12 para. 1 ODD, exclusive rights may be exceptionally justified if necessary for providing a service in the public interest (para. 2), with the standard modelled on Art. 106 para. 2 TFEU. Assessing necessity requires an economic analysis (Richter, 2021, p. 168). Without justification, exclusivity agreements are deemed null and void, and, due to shifting market dynamics, such exclusive rights require periodic review.

The updated ODD also acknowledges de facto exclusivity, where exclusivity occurs without formal agreements or legal privileges. While para. 4 does not prohibit such exclusivity, it requires that any legal or practical arrangements restricting further re-use by third parties be published online two months prior to implementation and reviewed regularly. This inclusion reflects the growth of the digital economy and emerging business models that impact market dynamics, such as cases where a company provides data analysis to a public body in exchange for data access. Additionally, it addresses circumvention strategies where data access may not be exclusive to one company, but limited to a select group of particularly cooperative firms.

23 The inadmissibility of agreements between public bodies and third parties that grant exclusive rights is, in a sense, a natural extension of the prohibition of discrimination. Such agreements would require public bodies, at minimum upon request, to allow the same re-use conditions for all parties rather than excluding others entirely (Richter, 2021, p. 167). However, a legally binding exclusivity agreement de jure prevents the public body from adhering to the principle of equal treatment. The core regulatory content of Art. 12 lies in its significant legal impact: it declares exclusivity agreements invalid or requires them to expire (Art. 12 para. 5). Notably, the timeline for the expiry of these agreements now extends from 19 to 25 years into the future.

4. Social sciences: beneficiary and recipient of the Open Data Directive

The social sciences occupy a dual position within the framework of the ODD. On one hand, they benefit significantly from the EU's new data policy, as data gathered by public sector bodies and enterprises offer immense research potential. These data are critical for addressing research questions, testing hypotheses, and often ensure completeness and high data quality. On the other hand, the ODD represents a double-edged sword for the social sciences, in that they are typically state-funded and therefore fall under the open data regulations applicable to the public sector. Consequently, the social sciences can act both as beneficiaries and as obligated parties under the Directive.

4.1 Social sciences as a beneficiary

When social scientists seek to use data under the ODD, they tend to encounter varying degrees of data openness. The Directive does not always fully achieve its open data mandate; rather, it categorises data types and assigns each a different level of openness. Generally, the degree of openness correlates with the conditions under which the data are generated. Public bodies, which typically do not participate in market competition, are held to stricter openness requirements than public undertakings. However, the legislator mandates a particularly high level of openness for data with significant socio-economic potential.

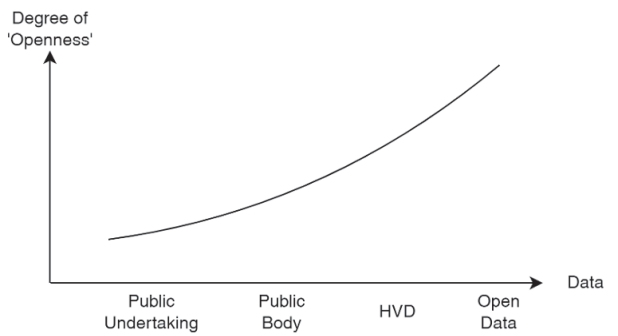

Figure 2: Degrees of "openness" in the ODD (Source: Authors)

4.1.1 High value datasets

The EU legislator has recognised that certain datasets hold greater socio-economic potential than others. These HVDs are governed by a more progressive utilisation framework than other data, with the aim of fostering innovation and enabling a level playing field for developing AI systems that address societal challenges (Bruns et al, 2020, pp. 9 et seq.). HVDs are made available for re-use with minimal legal and technical restrictions, and are free of charge.

According to the legislator, an HVD is a collection of "documents the re-use of which is associated with important benefits for society, the environment and the economy, in particular because of their suitability for the creation of value-added services, applications and new, high-quality and decent jobs, and of the number of potential beneficiaries of the value-added services and applications based on those datasets" (Art. 2(10) ODD). The core thematic categories in which these data are intended to create socio-economic added value are currently geospatial, Earth observation and environment, meteorological, statistics, companies/company ownership and mobility (Deloitte and European Commission, 2020, p. 7 et seq.). Nevertheless, the ODD also empowers the EC to introduce new thematic categories of HVDs in order to reflect technological and market developments (Art. 13 para. 2 ODD). In addition, the legislator delegates to the EC the authority to manage the use of HVDs through delegated acts (Art. 13 para. 2 and Art. 14 para. 1 ODD).

The Commission exercised this authority in 2022 through Implementing Regulation (EU) 2023/138, which entered into effect on June 9 2024. This regulation specifies HVDs and includes an annex listing the datasets held by public authorities, along with guidelines for their publication and use (e.g., data and metadata format requirements). Unlike regular datasets, HVDs must be made available for further use by public authorities in a documented, EU-wide, or internationally recognised, open, machine-readable format via the latest APIs[24] and as bulk downloads, accompanied by comprehensive metadata. These datasets are made available under the Creative Commons BY 4.0 license or an equivalent or less restrictive open license. However, HVDs owned by public undertakings are excluded from the Regulation's scope (Recital 7 S. 2 Implementing Regulation (EU)

24 An API refers to a set of functions, procedures, definitions, and protocols for machine-to-machine communication and the seamless exchange of data (Art. 2(6) Implementing Regulation (EU) 2023/138).

2023/138). Unlike the ODD, which required transposition into national law in each EU Member State, the Implementing Regulation applies directly across all EU Member States.

However, even for HVDs, one of the core parameters of openness – the cost of a dataset – faces certain restrictions. While HVDs are generally required to be available free of charge, the ODD specifies exceptions (Art. 14 paras. 3, 4, 5 ODD). Libraries (including university libraries), museums, and archives are exempt from this requirement (Art. 14 para. 4 ODD). Additionally, public sector bodies that need to generate revenue to cover a substantial portion of their costs in fulfilling their public service mission – and for whom free provision would significantly impact their budget – may also be exempted. Member States are allowed to waive the requirement for these bodies to provide HVDs free of charge for up to two years after the relevant implementing act takes effect (Art. 14 para. 5 ODD). Nonetheless, only a small number of public bodies are expected to meet these conditions, as most are funded by tax revenues rather than their own income.

4.1.2 Public sector bodies' data

The degree of openness decreases rapidly in the case of data from public sector bodies that do not qualify as HVDs. This is evident from the fact that certain data falls outside the ODD's scope: if data provision does not align with a public sector body's legally defined tasks, it is excluded from the Directive's application (Art. 2 para. 2 lit. a ODD). This provision reflects the EU legislator's intent to avoid imposing regulatory restrictions on data produced by public sector bodies under market conditions. Thus, if public bodies create data competitively and with the aim of profit – responding solely to demand and third-party purchasing power – the ODD does not apply.

Dynamic data also face openness limitations, as they must be made available as bulk downloads after collection only to the extent that doing so does not exceed the financial and technical capacities of the public body, thereby avoiding disproportionate effort (Art. 5 para. 6 ODD).

The principle of open data is further limited regarding fees. Although the ODD generally mandates that re-use of documents be free of charge (Art. 6 para. 1 ODD), it allows exceptions if a public sector body must generate revenue to cover substantial costs incurred in fulfilling its public mission (Art. 6 para. 2 lit. a ODD). However, in light of the general mandate for free re-use, this exemption is intended to be interpreted narrowly.

Although not primarily aimed at ensuring a high degree of openness, the ODD includes a ban on cross-subsidisation to protect fair competition.[25] If public sector bodies use data as source material for business activities outside their public mandate, the same fees, charges, and other conditions must apply to the provision of documents for these activities as for other users (Art. 11 para. 2 ODD). This provision aims to prevent public bodies, as providers of data products or services, from directly or indirectly pushing private companies out of the market. Such a risk would arise if public bodies could re-use their raw data (originally created to fulfil public tasks) free of charge or at preferential rates compared to third parties. Thus, while the cross-subsidisation ban primarily addresses competition concerns, it also ensures that public bodies do not monopolise their data, thereby making more data available for re-use.

4.1.3 Public undertakings' data

The data of public undertakings diverges even further from the open data ideal. The ODD does not apply to data from public undertakings that is not generated as part of providing services of general interest (Art. 1 para. 2 lit. b lit. i ODD) or that relates to activities directly exposed to competition (Art. 1 para. 2 lit. b lit. ii ODD). This provision effectively excludes companies that operate entirely within free market mechanisms from the Directive's scope.

If the data of public undertakings falls within the ODD's scope, the principle of unrestricted data use does not apply unconditionally (Art. 3 para. 2 ODD). Instead, it depends on the degree to which Member States permit this in their implementing legislation. For example, in Germany, public undertakings can independently decide whether to authorise data re-use. However, if they do permit re-use, the ODD's provisions apply. It is generally reasonable to interpret the publication of data as a re-use authorisation, provided that the data are not accompanied by a license restricting further use. Public undertakings, nonetheless, may charge fees for their data (Art. 6 para. 2 lit. c ODD), with total costs calculated based on

25 The term "cross-subsidisation" refers to "the full or partial transfer of costs incurred in one geographic or product market to another geographic or product market within a company or between parent companies and subsidiaries", as defined by the EC (1998) in its Notice on the application of competition rules to the postal sector and on the assessment of certain State measures relating to postal services.

objective, transparent, and verifiable criteria set by Member States (Art. 6 para. 4 ODD). Additionally, public undertakings are exempt from the prohibition on cross-subsidisation, considering their position in the market.

4.2 Social sciences as a recipient

While the social sciences greatly benefit from the ODD, it is important to remember that their data is often publicly funded. The EU legislator addresses this through a specific regime for research data, of which social scientists should take note. Since 2019, the ODD has included publicly funded research data in its scope through Art. 10 ODD, setting conditions for its re-use – though it does not regulate access to the data itself. The goal is to make the rapidly expanding volume of research data accessible across sectors and disciplines, enabling it to be pooled, re-used, and applied to efficiently and holistically address societal challenges (Recital 27 ODD).

4.2.1 Dividing lines within Art. 10 ODD

The central regulation on research data comprises two distinct regulatory mechanisms. First, Art. 10 ODD introduces a general, non-enforceable political obligation for Member States. They shall support the availability of research data by adopting national policies and relevant actions aimed at making publicly funded research data openly available (i.e., open access policies). These policies should adhere to the principle of "open by default" and align with the FAIR principles (Art. 10 para. 1 ODD).[26]

In contrast, Art. 10 para. 2 ODD establishes specific, substantive conditions for the re-use of publicly funded research data, which Member States are required to implement (Klünker and Richter, 2022, p. 10). According to this provision, research data "shall be re-usable for commercial or non-commercial purposes […], insofar as they are publicly funded and

26 FAIR is an acronym representing principles for research data, which should be *findable*, *accessible*, *interoperable*, and *re-usable*. These principles were proposed in 2016 by a group of stakeholders from academia, scientific publishers, funding organisations, and industry (Wilkinson et al, 2016, pp. 1 et seqq.). Additionally, the principle of "as open as possible, as closed as necessary" applies, where data "closeness" addresses considerations related to intellectual property rights, personal data protection, confidentiality, security, and legitimate business interests. This creates a tension with open data principles, which advocate unrestricted openness.

researchers, research performing organisations or research funding organisations have already made them publicly available through an institutional or subject-based repository".

4.2.2 Research data

The ODD specifically addresses research data rather than scientific publications, defining the former as "documents in a digital form, other than scientific publications, which are collected or produced in the course of scientific research activities and are used as evidence in the research process, or are commonly accepted in the research community as necessary to validate research findings and results" (Art. 2(9) ODD). Examples include statistics, test results, measurements, field observations, survey data, interview records, and images, as well as metadata, specifications, and other digital objects (Recital 27 ODD).

4.2.3 Covered data

It is worth re-emphasising that the ODD only governs the re-use of accessible data – access and proactive allocation are primarily determined by the practices of research institutions and research funders.[27] For re-use to apply, the data must already be publicly available in an institutional or subject-based repository (Art. 10 para. 2 ODD).[28] Repositories are document servers on which files can be archived and generally made accessible free of charge. Researchers' choice of repository for publishing datasets often depends on discipline-specific publishing norms and the publication requirements of leading journals (Zimmermann, 2021, p. 87).[29] One of the best known in social sciences is the SSRN (Social Science Research Network).

27 As long as the EU is not involved in funding research, it cannot give Member States any binding guidelines for their policies. The EU's most important document is therefore only a non-binding recommendation: Commission Recommendation (EU) 2018/790; Richter, 2023a, Recital 169).

28 The basis on which this is done, whether voluntary, contractual, or statutory, is irrelevant. Public access for a fee or access after registration is also covered.

29 The ODD also allows Member States to extend the scope of application to research data that have been made publicly accessible in other ways (Recital 28) (see Gobbato, 2020, p. 152).

The data – not the researcher or institution – must be publicly funded for the ODD to apply (Art. 10 para. 2 ODD). As long as the research data are publicly funded, it is irrelevant who produces them. Consequently, Art. 10 ODD also applies, by exception, to entities that are not public bodies or public undertakings, including private companies. The policy aim behind this is to return the economic potential of publicly funded research data to the public (Zimmermann, 2021, pp. 87-88).[30]

Given the broad definition of research data, a wide array of social science data may fall under the ODD's provisions. This includes both quantitative data (e.g., survey results, comparative studies, or longitudinal surveys) and qualitative data (e.g., interview transcripts, observation notes, or field diaries), provided that they are in digital form. However, the Directive's primary focus is likely on quantitative data, as it is typically organised and highly structured within a data matrix.[31]

In the social sciences, which focus on empirical and theoretical research into social behaviour – examining the conditions, processes, and consequences of human interactions – data often include personal information. If not anonymised, such data falls outside the ODD's scope (Art. 1 para. 2 lit. h, Art. 1 para. 4 ODD).

The scientific context in which data are generated is also critical. Scientific research is typically conducted in both applied and basic research settings, including universities, non-university research institutions, academies of science, departmental research within Member States, and companies (Zimmermann, 2021, p. 87).

Moreover, the data must serve an evidentiary role within the research process and assist in validating the research findings and results. The research community is responsible for defining the criteria here, enabling the ODD to create a flexible, transdisciplinary framework. The evidentiary function arises from the research design and chosen methodology in relation to the research subject, as the data directly contribute to the research process. The validation function focuses not on successful validation, but

30 While the directive defines "research data", it does not attempt to clarify the term "research" itself. Similarly, there is no standardised concept of research or science in other EU law. Although the freedom of science is protected under Art. 13 of the EU Charter of Fundamental Rights, the European Court of Justice has yet to provide any interpretation or guidance on this term.

31 It should also be noted that the term "document" does not extend to computer programs. However, Member States may extend the scope of this Directive to such programs (Recital 30 ODD).

rather on the established practices of the relevant research community. The key is whether, objectively speaking, the data are generally seen as necessary to validate the research findings. In essence, the data must generally serve a validation purpose.

4.2.4 Exclusion: scientific publications

The key distinction between research data under the ODD and other data lies in whether they constitute a scientific publication. The Directive explicitly excludes scientific publications from its definition of research data, distinguishing research data from "scientific articles reporting and commenting on findings resulting from their scientific research" (Recital 27 ODD). Research data has a preparatory and supporting role, meaning that scientific full-text articles, especially those in academic journals, are outside the Directive's scope (Gobbato, 2020, p. 152).

This exclusion primarily serves to ensure flexibility and preserve "individual research measures" (European Commission, 2018b, p. 38 et seq.; Klünker and Richter, 2022, p. 12). It allows researchers to retain flexibility over their publications, reflecting the fundamental right of academic freedom (Richter, 2018, p. 56). Scientific publications are also excluded due to copyright; such publications are works where third parties, such as publishers, may hold copyrights (Klünker and Richter, 2022, p. 12).[32] However, this exclusion does not address researchers' own intellectual property rights.[33]

5. Overall assessment of the Open Data Directive

The history of the ODD reflects a steady trend in European legislation towards greater openness of government data. The latest iteration has addressed key gaps in government data openness by updating normative requirements to align with technological advancements and expanding its scope to cover public undertakings and research data. Yet, the Directive's primary structural limitation persists: data re-use is only possible when access has already been granted.

To date, the European legislator has only managed to close this gap with regard to HVDs, for which it not only stipulates a particularly user-friend-

32 "Third party" refers to any natural or legal person other than a public sector body or a public undertaking that holds the data (Art. 2(17) ODD).

33 Argumentum e contrario Art. 1 para. 2 lit. c ODD.

ly regime for its re-use, but these datasets must also be made available independently of any national access restrictions. However, to ensure that high-value data genuinely contribute to greater openness, additional implementing acts by the Commission are essential.

From the perspective of social science, the new Directive proves to be more of an opportunity than a burden. Like any data-based science, social science benefits from the wider availability of high-quality data in order to establish a vital scientific system. The Directive aligns with the spirit of Open Science, a growing movement advocating for the broad sharing of research evidence and results without financial barriers. This vision rests on the principles proposed by Robert Merton, who championed this concept of "scientific communism" in the mid-20th century (1985, p. 86).

The hope remains that this spirit will also find its way into the offices and management floors of public companies. Progress in government data openness would be far swifter if driven by intrinsic commitment rather than regulatory obligation.

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