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Publication date
2024

Document Version
Final published version

Published in
CEUR Workshop Proceedings

Citation (APA)

Santoro, C., Flores, C. C., Nikiforova, A., Zuiderwijk, A., & Cromptvoets, J. (2024). Exploring Governance Modes in Open Data Initiatives: Insights from France and Ireland. *CEUR Workshop Proceedings*, 3737.

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Exploring Governance Modes in Open Data Initiatives: Insights from France and Ireland

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Abstract

Despite an increasing interest in the strategies to promote open data use in recent years, there has been a substantial lack of empirical and theoretical analysis of the governance modes that favored different types of open data initiatives. To address this gap, this study asks: How do governance modes support open data sharing in open government data platforms? To answer this question, we assess the coherence of the open data governance contexts of France and Ireland when sharing data on open government data platforms during the Covid-19 crisis. The study uses a multi-method approach involving both interviews with experts, identified through purposive sampling, and secondary sources for triangulation purposes. Overall, the governance context supported open data sharing in France and Ireland. Both cases are characterized by a strong central coordination with a solid trust relationship and clear legal frameworks. France, more than Ireland, relied on a market governance mode, and Ireland scored higher in networked governance due to the creation of social capital. The results provide new insights on how to combine governance modes that support open government data initiatives through coordination, collaboration with the private sector, and involvement of different actors. Practitioners can use our insights as examples of governance strategies that are fit for events that need a timely open data response.

Keywords

Open Government Data, Open Data Governance, Open Data Platform, Coherence, Covid-19

1. Introduction

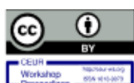
In recent years, governments have increasingly shared data through open data platforms [1]. Today, many actors, such as companies, citizens, researchers, journalists, developers, and non-governmental organizations (NGO), participate in various roles in the open data ecosystem [2]. The presence of multiple actors with different, sometimes competing, needs and objectives [3] results in a complex web of relationships.

Amid the complexity of open government data (OGD) initiatives, governance attempts to meet and reconcile the interests and needs of different actors to attain common goals [4]. The Covid-19 outbreak represents an example of OGD governance complexity. The health and social crisis enormously challenged governments, requiring them to adopt a multitude

Proceedings EGOV-CeDEM-ePart conference, September 1-5, 2024, Ghent University and KU Leuven, Ghent/Leuven, Belgium

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CEUR Workshop Proceedings (CEUR-WS.org)

of policies at a rapid pace [5]. Data, deemed essential for the response to the pandemic, were collected and shared by governments with open data governance strategies that demanded a set of infrastructure, policies, collaboration mechanisms, regulations and processes [6]. Under this context, some countries performed well and provided timely open datasets on their governmental open data platforms, but others did not [7]. Those that were successful are supposed to be characterized by a coherent governance context [8]. The governance context is considered coherent when it supports the achievement of the goals of a policy [9].

While from a governance perspective, open data initiatives and their coherence can be characterized as governance modes, e.g., networked-governance of open data ecosystems [1] or hierarchical governance with top-down decision-making [10]; there is a substantial lack of empirical and theoretical analysis of the governance of open data initiatives [4],[11]. More specifically, we lack a deeper understanding of the governance modes that support open data initiatives, as well as the factors that favor coherence for an effective delivery, use and creation of open data (platforms). To address the aforementioned gaps, we conduct a coherence assessment [12] of two frontrunner countries in the timeliness of open data response in the context of Covid-19 pandemic. We use these cases to answer the research question: How do governance modes support open data sharing in open government data platforms?

2. Materials and methods

2.1. Theoretical framework

Open data are defined as data that can be shared, used, and re-used freely for any purpose [13]. Open Government Data represent a subset of open data and are intended as “any attempt, by a government or otherwise, to open data produced by a governmental entity” [14, p. 399]. In light of the numerous potential benefits of open data [2], governments have adopted open government data portals over the years to increase the release of OGD [15]. Despite the efforts made to increase the number of published datasets, OGD are considered valuable when they are used rather than when simply shared [15]. Covid-19 represents an example in which OGD were used and thus facilitated value creation [16]. One factor that is credited to positively contribute to OGD release is data governance [6]. Data governance is considered a “prerequisite” for reaping the benefits of open government data and is defined by OECD as “the set of standards, rules and systems that enable secure and ethical access to and sharing of data” [17, p. 1]. Data governance is successful when it achieves both timeliness of data release and high data quality [18].

Open data initiatives are implemented using different governance instruments [4] that usually combine bottom-up, top-down, and hybrid approaches [10]. While many definitions of governance styles or modes exist, as explained by Meuleman [19, p. 12] the literature tends to cluster them into three archetypal governance modes, namely *hierarchy*, *network* and *market*. Hierarchical governance is characterized by elements of regulation and dominance and materializes through orders, rules, planning, and the carrying out of authority. Market governance is based on market dynamics of competition, negotiating, and trade. Network governance relies on the interdependence of different actors, trust

relationships, and cooperation. The three modes of governance should be understood as ideal types [20] that are often mixed [21]. In the case of open data governance, during the pandemic the involvement of the central state as top-down hierarchical force was acknowledged by the extensive analysis of open data on Covid-19 initiatives performed by the OECD in partnership with the GovLab [6]. Recent literature has investigated different modes of data governance to account for multiple actors, values, goals [22], and principles [23]. Yet, investigations on the topic have revealed that the question of which governance modes favor, among others, data availability and data use is unsolved by current models [24]. To this end, this study uses the Coherence Assessment Framework for Geospatial Data (CAFGD) [12] as a theoretical tool to identify and assess the governance factors that supported the timely delivery of Covid-19 open data and their governance structure. Although CAFGD was originally developed for assessing geospatial data policy implementation, it was chosen for two main reasons: (1) the lack of OGD-tailored governance frameworks that analyze the relevance of the three governance modes of OGD initiatives [11], and (2) the strong relationship between geospatial data (it was originally intended for) and OGD [25], allowing its use to be extended to OGD.

The CAFGD builds on the relevance of institutional arrangements [26], [27] and combines them with the evaluative criterion of coherence found in Governance Assessment Tool (GAT). GAT framework is based on Contextual Interaction Theory and considers governance as a context for decision-making and implementation [9]. The assessment of governance as a supporting or constraining factor is performed through systematic analysis of all the dimensions to derive a more nuanced understanding of the governance context. The governance dimensions are assessed through the analysis of coherence. A coherent governance context is characterized by elements that are “strengthening rather than weakening each other” [9, p. 54]. Coherence is a semi-normative quality, as “the normative content of the quality is both derived and dependent on the importance and urgency of implementing policies and projects under assessment” [12, p. 2]. Therefore, the policy implementation's relevance and timeliness define the content and the scope of coherence. Table 1 presents the governance dimensions of CAFGD with the description of dimensions adapted for this study referring to open data (instead of geospatial data).

Table 1. Governance Dimensions of the adapted CAFGD framework (adapted from [12], [27])

Governance mode	Dimension	Description of instrument
Hierarchy	Establishment of coordination function	The existence of coordination bodies with clearly allocated resources and responsibilities. These bodies must have the coordination of the open data strategy as the main function, as well as the monitoring and control of the specific goal.
	Reshuffling of competencies	The flexibility inside institutions that is part of the context of open data management. This involves the centralization and decentralization of open data sharing.

	Establishment of a legal framework	The development or adoption of a regulatory framework for open data information at the different governmental levels. Among the included legislation is that related to digital information, open data, freedom of information (FOI), intellectual property rights or the protection of personal data.
Market	Regulated markets	The creation of regulated markets where there are incentives for the creation and development of open data information. These markets are commonly created by the government and depend on users and providers.
Network	Systems for information exchange and sharing	The creation and maintenance of systems that allow information exchange, information flow, information accessibility and better organization. Geoportals are a good example.
	Entities for collective decision-making	The existence of strategic decision-making boards composed of senior officials from different organizations but within the policy domain of open data information management. This collective group is expected to set and control a collective open data management strategy.
	Partnerships	The creation and stimuli of public partnerships for open data management with other government actors, business sectors and non-governmental organizations.

2.2. Methodology

In this study, we use a holistic comparative exploratory case study approach [28]. The unit of analysis is the open data governance models within the Covid-19 pandemic of France and Ireland, for two reasons. First, these two countries have proved to be frontrunners in the timeliness of open data response, standing on the podium rank in an analysis of 60 countries Covid-19 open data response strategies [7]. Timeliness is a relevant criterion when looking at the success of open data initiatives, and it is directly associated with governance, as the absence of a readily available reliable source of information can disrupt users' trust in data [7]. Second, the two countries consistently rank as leaders in open data policies [10], [29] clustered by the Open Data Maturity Report [30] as trendsetters (at the time of writing).

The analysis was conducted through a multi-methods research strategy based on data gained from three semi-structured interviews with experts involved in the governance of the open data initiatives and secondary sources. The interviews¹ were conducted with

¹ The questions are available at [10.5281/zenodo.11624748](https://zenodo.org/record/11624748), along with the governance quality of coherence and its assessment in a range of high, moderate, or low.

experts selected through purposive sampling combined with snowballing approach to gain knowledge from key actors who actively worked in the coordination bodies in France (Interview 1, Etalab France – 1FR -, Interview 2, Etalab France – 2FR) and Ireland (Interview 3 - All-Island Research Observatory (AIRO) - 1IE). Secondary sources selected for triangulation purposes included academic articles [31], [32], open data assessments reports [10], [29], policy evaluations [33], legal documents [34], [35], [36], presentations [37], articles [38], and documents shared by the interviewees (DOC1).

3. Results

The following sections (3.1 and 3.2) present the results of the study for each dimension (see Table 1) of the three governance modes.

3.1. France

The establishment of a coordinating function. During the pandemic, Etalab, an agency of the Interministerial Digital Directorate (DINUM) created in 2011 - the same year the open data portal (data.gouv.fr) was launched - played a key role in working with administrations responsible for data. The administrations included notably the Public Health Agency (Santé Publique France) under the Ministry of Health and Solidarity (1FR, 2FR). More specifically, the Public Health Agency, created in 2016, at the beginning of the pandemic was the political actor responsible for collecting data on Covid-19 from different regions (Agences Régionales de Santé). The Public Health Agency encountered many challenges, such as different sources of information (e.g., hospitals and retirement homes) with different systems of data collection, as well as a lack of established practices for collecting and sharing open data due to the new establishment (2016) of the same agency. Amid the different challenges experienced by the Public Health Agency, the role of Etalab was key in providing support and streamlining the open data-sharing process by implementing an automated data provision protocol. The joint effort resulted in the publication of data on Covid-19 (i.e., confirmed cases, hospitalizations, returns home, intensive care etc.) on the French open data portal (data.gouv.fr) as early as March 2020, around one week after the first Covid-19 case was registered.

Reshuffling division of competencies. The relationship between Etalab and the Public Health Agency was characterized by trust and collaboration. Etalab, on the one hand, understood the challenge related to the lack of trained personnel (i.e., data scientists that could work on structuring data), while the Public Health Agency showed an open attitude to learn and become autonomous on open data release on the open data portal (1FR). Trust was also at the basis of the relationship between Etalab and the community of developers and citizens collaborating in online collectives active in supporting the data-sharing effort (1FR). Trust was facilitated by the presence of experts who were both working for Etalab and active in forums, such as GitHub, and, therefore, could navigate both ecosystems (the open data public administration ecosystem and the one of the self-organized community of contributors) (1FR).

Establishment of a legal framework. Since 1978 the French Public Administration has been legally obliged to share data upon request, a principle that dates to the Declaration of

Human Rights of 1789. Most importantly, since 2016, public administration data must be open by default (2FR)[35]. The same legislation underpinned the importance of sharing data of Health relevance (“importance sanitaire”) and appointed Etalab as the coordinating body for steering the open data strategy, with mission and tasks further clarified by the law in 2019 (2FR)[34]. Therefore, in the initial stage of the pandemic, there was no need to re-adapt the legislation that already supported open data sharing by public administration per se, provided for a coordination body (Etalab) and, additionally, framed health data as relevant and of high importance (2FR).

Regulated markets. In the context of the pandemic, Etalab and the Public Health Agency were actively involved in meeting and coaching teams of re-users composed of citizens and journalists who created dashboards for news outlets (2FR). France heavily relied on private actors after the outbreak's start regarding data on the stock of vaccines available and vaccine appointments, as these two categories of data are heavily dependent on collaboration with privates (i.e., vaccine producers, privately owned vaccines hub) (2FR, DOC1). More specifically, the Ministry of Solidarity and Health collaborated with the vaccine producers to provide data on the stock and the logistics of Covid-19 vaccines. Also, the Ministry of Health and Solidarity entered a partnership with Doctolib - a private company market leader in managing medical appointments, allowing the company to host, and collect, vaccination appointment data. In both cases, private actors shared data with the Ministry based on a prevailing societal interest as stipulated by law (2FR). The importance of private sector data was also recognized by a policy evaluation commission appointed by the Prime Minister to evaluate the openness of data in France [33].

Systems for information exchange and sharing. The main system for information exchange and sharing was provided by the comments section of the governmental open data platform which is, in general, followed up regularly by Etalab (1FR). In the context of the pandemic, citizens were particularly active in sharing comments and feedback. Etalab worked to “take into account the feedback of re-users and normal citizens that end up on the platform” since “especially in the beginning of the crisis, there was like a huge civil society movement towards publishing more data” (2FR). The exchange of information through the comments section generated a sort of self-organizing community with two or three people answering everyone else's questions.

Entities for collective decision-making. The coordination of the open data strategy and the decision-making activities rested within the Etalab or, as in the case of the partnership with civil society, with the Governmental Communication and Information Service (SIG) for creating the Covid-19 dashboard (1FR, 2FR). Even though there was no direct participation of different actors in decision-making activities, feedback from citizens on the OGD portal, and on the social platforms (e.g., Twitter) was considered by Etalab.

Partnerships. Etalab coordinated with a civil society initiative called “Open COVID19”, which built a dashboard aimed at Covid-19 data visualization (1FR, 2FR [38]). The Government's Communication and Information Service partnered with the project so that all citizens could access information through the dashboard on the French government's website in March 2020.

3.2. Ireland

The establishment of a coordinating function. The Department of Health commissioned the creation of a Covid-19 dashboard for informative purposes to a Covid-19 Response Coordination Group [31]. The Response Coordination Group, established on March 17, 2020, between Ordnance Survey Ireland (OSI) and the Central Statistics Office (CSO) coordinated all the aspects related to the production of a geospatial data hub and the creation of a dashboard providing information on the Covid-19 outbreak. The Response Coordination Group was part of IEMAG, the Epidemiological Modelling Action Group that reported to the National Public Health Emergency Team [37].

Following the mandate, CSO and OSI, in coordination with the Department of Housing, Planning & Local Government and All-Island Research Observatory (AIRO) at Maynooth University, with Esri Ireland as technical partners, developed the National Covid-19 Data Hub. Data were collected from different inputs and fed into the data hub that collected the already checked and cleaned data on the data.gov.ie platform (1IE). The underlying logic of the coordinated effort was “collect once, use many times” [31]. Key aspects of the initial work were creating a workflow and governance model for data sourcing and management that relied heavily on a clear legal framework pre-defined among the different actors.

Reshuffling division of competencies. The Covid-19 Data Hub and the Dashboard result from a specific legal framework through establishing a Response Coordination Group. Yet, trust was an essential factor contributing to the initiative's success. The collaboration was an “open book” from the start (1IE). The Department of Health entrusted the Response Coordination Group for three reasons. First, the actors of the Response Coordination Group developed a prototype and showed how data would have been used. Second, discussions towards a governance agreement started at an early stage. Third, the initiative relied on existing and established working relationships between key stakeholders coupled with known expertise for building geospatial dashboards. Governance and technical agreements were already in place between CSO and OSI for the recently developed UN Sustainable Development Goals Hub for Ireland, with “shared experience from this collaboration provided critical direction in the initial development of the Covid-19 dashboard and future iterations” [31, p. 897]. The preexisting relationships among the actors helped overcome tendencies toward data protectionism and streamlined the process of creation of both the data hub and the dashboard (1IE). Therefore, trust was a key factor in enabling a timely and effective open data response.

The legal framework. OSI and CSO established the Covid-19 Response Coordination Group, and the Department of Health agreed to commission a Covid-19 dashboard using the GeoHive platform. The legal framework resulted from a legislation mix [31], memorandum of understanding and arrangements based on five legal documents². Clarity regarding the

² The legal documents forming the basis of the legal framework are: (1) the Irish Statistical Act of 1993 (1IE); (2) a formal memorandum of understanding between the All-Island Research Observatory (National University of Ireland Maynooth), the CSO, and OSI; (3) a service-level agreement between OSI and the Department of Housing, Planning and Local Government. (4) a framework agreement between OSI and Esri Ireland (the

legal framework was considered a key contributing factor to the success of the open data strategy and considered as “the backbone for all the data sharing” (1IE).

Regulated markets. The private sector in Ireland performed mainly ancillary activities, with some specific support provided by consulting firms to the Department of Health. Big consulting firms provided additional capacity for data collection and data analysis on the account of the Department of Health (1IE).

Information exchange in Ireland was channeled mainly through the comment sections of the OGD portal and through an intensive work of adapting the FAQs of the Covid-19 open data hub (1IE). Feedback and suggestions were elaborated based on the e-mails received by OSI through the Covid-19 open data hub. Thousands of queries sent through the open data portal translated into a comprehensive set of answers that provided a clear guidance on relevant aspects of the data strategy. Through the feedback received, the FAQs were adapted and became as explanatory as possible, with detailed information on technical issues, dataset definition, the frequency of updates, etc.

Decision-making activities were internalized in the body responsible for coordinating the Covid-19 data strategy that was composed by different actors, such as the All-Island Research Observatory of the National University of Ireland Maynooth (1IE). Feedback was also collected from users through different channels (including the data hub and social networks), although the Covid-19 open data agenda was mainly the result of discussions among actors of the coordination committee.

The *partnership* among different actors (i.e., academia, the statistical agency, the mapping agency, and the government) created new data infrastructure, new data practices and data protocols [31]. The actors involved relied on their previous competencies to steer the Covid-19 open data strategy toward sustainable development goals (SDG) ecosystem through the collaboration of the statistical and geospatial communities. In particular, “the SDG ecosystem was quickly refocused on measuring and monitoring the Covid-19 outbreak” [37, p. 30]. The partnership among different actors in the emergency context created social capital, leading to a radical transformation of the health open data ecosystem [31].

4. Discussion and conclusion

In the previous subsections, we presented the analysis of the seven dimensions within the governance modes in France and Ireland to answer how the governance modes support open data sharing in the open government data platforms. Based on the collected data, we can assess to what extent (high, moderate, low) the governance context of the two cases constrains the development or use of OGD.

Concerning the first mode of governance – *hierarchy* – we can identify a highly supportive governance context in all three dimensions (i.e., establishment of coordinating functions or entities, reshuffling of competencies, establishment of a legal framework). On the one hand, France relied on ex-ante coordination by establishing an agency (Etalab) in

software company). (5) collaborative arrangements with the Department of Health, the Health Protection Surveillance Centre at the Health Service Executive, and the Office of the Government Chief Information Officer [31].

charge of open data coordination that could rely on a clear legal framework. Ireland, on the other hand, relied on ex-post coordination, with the establishment of a coordination body and an ad-hoc legal framework. The rapidness of the response was also the result of pre-existing relationships among actors in the research, statistical and geospatial communities.

Regarding the second mode of governance – *market* – France, more than Ireland, relied on the private sectors. France had an overall highly supportive governance system towards market instruments of open government data sharing, while Ireland had only a moderate involvement of the private sector that performed ancillary activities with no substantial open data sharing.

Different results were also achieved regarding *networked* governance dimensions, with Ireland benefitting from the creation of social capital through collaboration with different actors and the involvement of different actors in decision-making activities. Although France incorporated feedback from civil society and benefitted from civic initiatives (e.g., the dashboard), the participation of different actors did not substantially change data practices that heavily rely on central coordination. As such, Ireland appears to have applied networked governance instruments that highly support open data sharing, while France networked governance instruments only provided a moderate support.

From the analysis of the two cases, we see those various combinations of top-down and bottom-up approaches seem to deliver timely, open, data-driven crisis responses. Both cases relied on strong hierarchical governance by establishing coordinating task forces, entrusting competencies, and clear legal frameworks. The recipe for open government data response to the pandemic in Ireland leaned more towards networked governance, while France exploited market dynamics.

The results of the study partially confirm, for frontrunners, the findings of the OECD and the GovLab [6] on the governance of open data initiatives where the presence of private sector actors is limited, as in the case of Ireland. It should be noted that while open data governance in France was supportive towards market dynamics, we were not able to assess the weight of the participation of non-governmental actors in open data sharing and, as such, whether their participation was paramount to the success of the open data response to the Covid-19 crisis.

The results of our study also suggest that central coordination combined with experience in implementing governance strategies might lead to effective governance of open government data initiatives. In both cases, the interviewees recognized the importance of a supportive governance system to implement open data strategies. More specifically, the respondents highlighted how governance through legal agreements and established trust prevented bottlenecks and short-circuited common issues that could have led to data protectionism. These considerations corroborate the initial assumption of the study: open data are defined as a tool for achieving societal benefits, but open data establishment (data sharing) faces numerous challenges that can be solved through (coherent) governance instruments. These findings complement previous studies [24] by initially positing conditions that favor open data sharing that match users' demand.

The study's results regarding the optimal governance approach for open government data sharing should be interpreted cautiously. Our focus was on timely open data sharing and did not investigate other relevant dimensions such as data quality and the degree of

effectiveness of the data response to the pandemic. It is crucial to note that the timeliness of open data sharing might have come at the cost of compromising the representation of diverse social groups in the datasets. Our findings contribute to advancing the understanding of OGD governance in several ways. First, our study underscores the importance of central coordination and clear legal frameworks for the timely provision of open datasets. Second, our study builds upon previous research [6] by shedding light on the extent of the private sector involvement in these initiatives. Third, our study highlights the importance of recognizing potential governance challenges and opportunities regarding open data, as mentioned by interviewees multiple times.

Finally, our study has several limitations we must acknowledge. The main limitation is the small data sample from which the results and conclusions are derived. While the purposive sampling of interviewees and documents was done to reach saturation of relevant information, this remains a major limitation of the study. The second limitation of the study is related to the impact of the Covid-19 crisis on governance modes and timely provision of data through governmental platforms. This study did not address the causal relationship between governance coherence and timely and effective open data sharing. Moreover, it is unknown which factors contributed more than others to timely and effective open data provision, which can be studied in future research.

Acknowledgment

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955569.

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