This policy paper investigates the state of open government data in the Philippines by comparing access to health information during the COVID-19 pandemic with available data prior to it. It takes the lessons from the creation of the health data hub related to the pandemic and models it as a way forward for more systematic data sharing for the whole of government in the future. It concludes that while the pandemic still illustrates the fragmented information systems in the whole of government, it also shows that it is the need for data that can bring it together. The paper also underscores that the government remains the logical institution for aggregating official data and information and protecting data of its citizens.
Introduction

Accessing relevant timely government data becomes paramount whenever emergencies and disasters arise. The Philippines is one of the most disaster prone countries in the world—from Yolanda and Ondoy and as recent as Taal—and yet it continues to struggle with regard to accessing and using the available data. The current COVID-19 pandemic only highlights the urgency of making the Philippines’ disparate information systems interoperable and accessible.

This policy paper highlights where the country stands as regards data governance and what needs to be institutionalized from its experience with the current pandemic (and its implications on disaster management).

In the current COVID-19 pandemic, the government’s ability to monitor accurate data in a timely manner has been crucial in determining the spread of the disease. Health data helps national and local government officials and other stakeholders to make decisions on quarantine/lockdown policies and allocation of resources (both manpower and critical supplies). Down the road, other data would be important in equally crucial decisions, such as optimizing the supply-chain of other goods, like food supply and other essential products.

The crisis also underscores both the challenges and benefits of access to data to inform decisionmakers. Coherence in decisionmaking requires good data governance of both data supply and demand. Under normal and non-crisis situation, the Philippines has long recognized the importance of data access. What the crisis has highlighted are the limitations of the current state of data access and sharing, and the need to improve the country’s outdated open data system.

This paper provides a brief literature review of open data, an overview of the policies on data governance and the state of their implementation. The study also makes use of the available health data as baseline. It then presents a brief account of health data availability and use during the pandemic. Lessons from the current pandemic in terms of health information sharing and co-creation are then harnessed to help inform the crafting of a policy for institutionalizing better data governance, especially with respect to open data.

Related Literature

Open data, in particular open government data, is associated with the renewed interest to exploit public sector information by making data available to citizens and other government agencies (different from its initial creator) through the Internet in order to be re-used for the generation of both social and economic value (Alexopoulos, Zuiderwijk, Charapabidis, Loukis, & Janssen, 2014, p. 231).

While the information age is marked by global information capitalism, digital inequalities also exist even among access holders to make meaningful use of that access to data (Reilly & Smith, 2013, pp. 21-23). The realization of development (or digital dividends) would be dependent on people’s ability to “craft and take advantage of the new, more open networked social forms made possible by ICTs” (Reilly & Smith, 2013, p. 23; World Bank, 2016). A better understanding of interactions happening in these open models, spaces and platforms is needed to see how they can be transformative.

One need not look far to find evidence on how opening data can help in sustainable
development. On the local front, the University of the Philippines opened map data of Taal Volcano to speed up disaster rehabilitation in areas affected by the volcano’s eruption in early 2020 (Nazario, 2020 Jan 28). In the on-going COVID-19 pandemic, the sharing and publishing of the full genome helped in the rapid development of assays and diagnostics (Nogrady, 2020 Mar 8) and in projecting epidemiological models of its spread.

Open Government, Open Data Commitments

The Philippines was among the eight founding members of the Open Government Partnership (OGP) when it was established in 2011. Government leaders and civil society advocates came together in the OGP to promote accountable, responsive and inclusive governance. The intent was to contribute to improving public service delivery by mainstreaming initiatives on (1) access to information, (2) civic participation, (3) public accountability and (4) leveraging technology to strengthen governance (Philippine Open Government Partnership [PH-OGP], 2017).

Under the OGP process, governments work with civil society to co-create two-year action plans with concrete commitments across a broad range of issues. Since country’s membership to the OGP, the Philippine government has improved with regard to providing more access to information as evidenced by the country’s higher ranking in the E-Government Development Index (EGDI) with respect to online presence and improved government data availability (EGMP 2022). Since 2014, the Open Data Philippines Portal (ODPH, www.data.gov.ph) has hosted more than 3,300 government data files and information on public expenditure, agriculture, transportation, education, among others. Furthermore, the Philippine Statistics Authority (PSA) launched in 2017 the OpenStat (http://openstat.psa.gov.ph), an online platform that made publicly available different statistical data collected and compiled by the government. Also, because of several digital governance initiatives in budget transparency, the Philippines scored 64/100 in the 2015 Open Budget Index (OBI), a global comparative budget transparency, participation, and accountability measure among 115 countries. In 2017, the country improved by three points, rating 67/100, landing the country at 19th spot (EGMP 2022). In the United Nations’ (UN) e-Participation Index (EPI), the Philippines advanced 48 positions in terms of EPI ranking from 67th in 2016 to 19th in 2018. Improvement in this is related to work done in fulfilling the OGP commitments.

The fifth and latest PH-OGP National Action Plan (NAP 2019-2021) proposed ten commitments to help address the four OGP values mentioned previously. One of these commitments pertains to “Increase(ing) government data utilization through publication of high quality datasets on the Open Data Philippines (ODPH) Portal.” (PH-OGP, 2017, p.32).

The commitment holder, or the agency responsible, for the ODPH is the Department of Information and Communication Technology (DICT). One can argue that the ODPH is a platform for open data sharing. The term “platform” originates from early computer programming, where software developers conceptualized their offerings as more than just programs, but rather flexible platforms for codes to be developed and deployed. It has then been carried over to organizations and companies that facilitate user-generated content, but do not create it (Gorwa, 2019, p. 856). In e-government, platforms can be viewed as a kind of regulated environment that

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1 EPI considers the level of engagement the government has with their constituents by means of ICTs. It examines the availability of online information, online public consultations, and citizen involvement in the decision-making process (UN, e-Government survey, 2018, p.112).
enable developers, users and others to interact with each other, share data, services and applications, enable governments to more easily monitor what is happening and facilitate the development of innovative solutions. Platforms, however, are not isolated islands. Integrating them with other platforms and systems and ensuring their interoperability can be difficult since everything on the web is connected with everything (Janssen & Estevez, 2013, S2). Hence, among the challenges in e-government today are orchestrating platform-enabled networks and connecting open government stakeholders such as open data users like content providers, government agencies, service providers and think tanks and data scientists.

Considering that the ODPH has been in place since 2014, what can we learn from its implementation? The rationale and assumptions behind this current commitment is described in the OGP’s National Action Plan, where it acknowledges that:

The Philippine Government generates, collects, and owns data from almost all of its mandate executions. Despite the number of data available in different means and formats, the usage, particularly by the general public, is sub-optimal. There exists a number of barriers that inhibit government data from attaining not only its economic value, but also its true and intrinsic potential as building blocks for good governance. The challenges include but are not limited to the following:

- Low utilization of data due to scattered government sources across various locations and domains;
- Lack of standardized government online content and data that lead to impeded interoperability; and
- Absence of policies within the government system that encourage the publication of data in open formats (PH-OGP, 2017, p. 61).

In other words, there is already an awareness in government that frames the problem as a problem of policy, demand (low utilization), and supply (lack of content; poor interoperability). These findings echo similar sentiments in the World Development Report 2016 (WDR 2016) that argues that digital dividends were not being felt as much, not because of the absence of the technology, but rather, because of analog issues that need to be addressed (World Bank, 2016).

The NAP, however, does not provide the evidence or data behind these assumptions. Furthermore, its commitments (or goals) do not necessarily measure variables that indicate open data utilization in transformative ways nor the factors that may impede it. In particular, the commitments are the following: (1) signed policies, (2) awareness raising, (3) dialogues to determine data needed, (4) doubling (100% increase) in the number of agencies contributing data (e.g., from 98 agencies contributing to 196), and (5) systems enhancement of the portal.

They do not inform whether the data government makes available is useful and actually used. Neither do we know what data people need and find useful. Neither do these NAP targets interface with other commitments from other agencies (e.g., Department of Education [DepEd]; Department of Tourism [DOT]), which also have data related commitments as well (e.g., DepEd commits to online publication of basic education input data for school year 2019-2020 and 2020-2021; or the DOT mentioning in its commitment the importance of tourism related data such as tourism value added, employment generated by tourism, inbound arrival, and inbound revenue data; among others).

This policy paper provides an assessment of the current ODPH and process for curating, requesting and posting of data. It also looks at recent cases on data use amid the COVID-19 pandemic to highlight the analog issues pertaining to supply (where data is coming from), demand for useful information by decision makers and how it is used in policy decisions with regard to addressing the COVID-19 pandemic. It concludes...
by proposing policies in data governance that must be institutionalized in the DICT, while also leveraging the capabilities of citizens outside the institution to achieve transformative co-creation.

**Methodology**

To measure open government data, the government’s existing policy initiatives and projects the serve as a baseline. There are four datasets that were used for this:

1. data inventory data set from the DICT (available in the ODPH portal)²

2. consolidated freedom of information (FOI) inventory data set, and status of FOI request per agency from the Presidential Communications Operations Office (PCOO) (available in the Open Data portal)³

3. manual inventory of open data sets currently posted on the ODPH portal.

These datasets provide an indication of the supply of data the government has and how updated and open they are. Reilly and Smith (2013, pp. 30-31) suggest that openness could be further analyzed across three dimensions: content, people, and process. The openness of content subscribes to the accepted definition of data being free to access, and free to manipulate (e.g., reuse, revise, remix, and redistribute), which means dataset files are usually in .csv format. Openness to people refers to who can actively participate and/or collaborate.⁴ Openness of the process pertains to whether the processes involved is transparent and whether the process is open to inputs from participants.⁵

While the data provided in the ODPH can be evaluated in terms of content and process, it is limited in terms of people. This is because there is no available information on who uses that data.⁶ The case example of how the COVID-19 data portal of DOH will then be presented. The COVID-19 data portal was analyzed in terms of the three dimensions.

**Findings**

**Open Data Availability and eFOI Requests**

There are three datasets in the ODPH that were analyzed to map the open data eco-system. Two were from the PCOO: (1) a consolidated information inventories of agencies and (2) a status of FOI request. The other was from DICT (data inventory of data sets). A fourth data set was from the manually-tabulated inventory of the data posted in ODPH. A quick mapping of the open data sources based on the open data portal and relevant datasets contained therein is summarized in Table 1.

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² [https://data.gov.ph/?q=dataset/data-inventory-datasets](https://data.gov.ph/?q=dataset/data-inventory-datasets)


⁴ It is open if people can use it, and is more open if more people are able to use it (social openness). It also considers the capacities of individual actors in the model, the legal structures, the implicit/explicit norms, and the rules and roles of the structure of the open model.

⁵ Example of openness as transparency is the disclosure of politically sensitive documents and opening to external scrutiny the internal workings of a process as a means of providing accountability. Openness as contingency involves temporal openness with respect to future possibilities—the idea that the process will emerge from the inputs of the participants (e.g., putting data sets online opens up a variety of future and un-anticipated possibilities for uses of that data). In other words, the process and its application can evolve.

⁶ The government should track the users of the open data. The current processes to track them were asked through email correspondences with relevant government officials assigned for maintaining the portal and/or responsible for the NAP commitment (e.g., PCOO/DICT).
Table 1: Indicative Data on the ODPH

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>FOI requests (2 files)</th>
<th>Datasets inventory</th>
<th>Open Data Portal content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply or Demand</td>
<td>Demand and Supply</td>
<td>Supply</td>
<td>Supply</td>
</tr>
<tr>
<td>Datasets</td>
<td>Mix/not limited to datasets</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Openness</td>
<td>Mix</td>
<td>Mix</td>
<td>.csv formatted</td>
</tr>
<tr>
<td>Accessibility online</td>
<td>Partial</td>
<td>Not indicated</td>
<td>Accessible</td>
</tr>
<tr>
<td>Count</td>
<td>Demand + 2646 requests Supply - 914 publicly disclosed</td>
<td>1410</td>
<td>1668*</td>
</tr>
</tbody>
</table>

*This is from a manual count. On the portal https://data.gov.ph itself, the website’s analytics says it has 1409 documents, from 273 datasets from 98 organizations (accessed on 19 March 2020).

Open Data Supply

The FOI dataset provides an indication of what can be supplied, by providing some information on where the data is found/hosted or posted. Not all the data requested, however, are raw data or data that are machine readable, or in dataset form. In other words, not all are open data.

On the other hand, the data set inventory of the DICT provides a tabulation of available dataset titles and data file names, as well as the format of the files, but does not provide links to where the files are located. It can only be assumed that the host agency has such a file, or probably such a file has been provided and archived by the DICT. It does not indicate if any of these files are on the portal itself, considering moreover that a large majority of the data files indicated are in .csv format.

Table 2: No. of Files and Datasets Uploaded

<table>
<thead>
<tr>
<th>Sector</th>
<th>No. of Datasets</th>
<th>No. of Files</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government</td>
<td>9</td>
<td>240</td>
</tr>
<tr>
<td>Banking and Finance</td>
<td>34</td>
<td>239</td>
</tr>
<tr>
<td>Transportation</td>
<td>34</td>
<td>202</td>
</tr>
<tr>
<td>National Government</td>
<td>57</td>
<td>198</td>
</tr>
<tr>
<td>Science and Technology</td>
<td>9</td>
<td>121</td>
</tr>
<tr>
<td>Labor and Employment</td>
<td>21</td>
<td>105</td>
</tr>
<tr>
<td>Special Concerns</td>
<td>17</td>
<td>93</td>
</tr>
<tr>
<td>Education and Training</td>
<td>36</td>
<td>61</td>
</tr>
<tr>
<td>Public Infrastructure</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>Health</td>
<td>13</td>
<td>40</td>
</tr>
<tr>
<td>Foreign Affairs</td>
<td>6</td>
<td>39</td>
</tr>
<tr>
<td>Law Enforcement and Justice</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Environment and Natural Resources</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Agriculture and Food Security</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Arts, Culture, and Heritage</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Travel and Tourism</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Defense and National Security</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
On the other hand, there are 1410 listed in DICT inventory of datasets (as of January 2018). Almost all (96%) are in .csv format, and hence technically open. Of the 1410 datasets in the DICT, 240 (17%) were from the DILG. This is only second to Bangko Sentral ng Pilipinas (BSP). All the datasets from DILG were in .csv format.

### Supply of Health Information

As for health information, there were 19 data sets from DOH in the ODPH portal, all in .csv format. However, most were just about regional HIV testing hospitals, and two were old information from the Field Health Service Information System (FHSIS) from 2007-2011 on health service coverage and health status indicators. The DOH website actually has more updated information of the FHSIS annual reports and health statistics. The reports and statistics in the DOH website, however, are in .pdf format and the raw data are not provided. Hence, health data in the DOH website is not open.

Based on the FOI dataset on consolidated information inventories (as of 18 January 2018) which are different from requests, there were 26 items from DOH of which 25 were published online. Of the 25, 24 were in .pdf, only one .csv and another in .xls format. Most of the data were maintained by the Epidemiology Bureau (EB) and updated on a weekly basis.

### Open Data Demand

One limitation of data on open data use is the absence of monitoring and tracking of its use. It does not have metrics on the number of downloads per file and does not indicate who has downloaded and for what purpose. One proxy for demand that could be used is the FOI requests. This suggests some types of data/information the public consider important.

A consolidated list of the numbers of request received by agencies through the eFOI portal is presented in Table 3. The top agencies that received requests were the Philippine Statistics Authority (PSA), the Department of Health (DOH), Department of Transportation (DOTr), and the Department of Budget (DBM).

#### Table 3. eFOI Requests (December 2017)

<table>
<thead>
<tr>
<th>Agency</th>
<th>No. Of Request</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippine Statistics Authority</td>
<td>433</td>
<td>16%</td>
</tr>
<tr>
<td>Department of Health</td>
<td>229</td>
<td>9%</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>177</td>
<td>7%</td>
</tr>
<tr>
<td>Department of Budget and Management</td>
<td>149</td>
<td>6%</td>
</tr>
<tr>
<td>Presidential Communications Operations Office</td>
<td>103</td>
<td>4%</td>
</tr>
<tr>
<td>Department of the Interior and Local Government</td>
<td>95</td>
<td>4%</td>
</tr>
<tr>
<td>Department of Finance</td>
<td>66</td>
<td>3%</td>
</tr>
<tr>
<td>National Economic and Development Authority</td>
<td>64</td>
<td>2%</td>
</tr>
<tr>
<td>Department of Information and Communications Technology</td>
<td>58</td>
<td>2%</td>
</tr>
<tr>
<td>Office of the Vice President</td>
<td>57</td>
<td>2%</td>
</tr>
</tbody>
</table>
The corresponding status of an FOI request is classified either as ‘pending,’ ‘successful,’ ‘processing,’ ‘denied,’ or ‘closed.’ A pending request means this transaction has yet to be acknowledged by the FOI receiving officer (FRO). How long it will be considered ‘pending’ depends on the agency concerned. A request is tagged successful if the FOI decision maker (FDM) was able to fully provide the information requested. Documents may be attached to the replies which can also be downloaded by the general public. A request is also tagged as such if the FDM was able to partially provide the information requested. Processing refers to requests that FDMs are still actively working on. Denied refers to requests for information that are denied because of any of the following: (a) wrong agency requested (i.e. the agency does not hold the information); (b) invalid requests or requests not considered as FOI request (e.g. complaint, vexatious requests, requests for frontline services); (c) under the list of FOI Exceptions to Executive Order 2, s. 2016; or (d) the information violates the Data Privacy Act of 2012. Finally, closed status pertains to cases where FDMs failed to respond or insufficiently responded within the 60-calendar day time period. The request will then be removed from the queue and marked as closed.

Furthermore, through the eFOI Portal, the FDM can ask for further clarification and, upon doing so, the 15 or 35-working day (if with extension) time period will stop. The FOI requesting party is then given 60 calendar days from the point of correspondence to them by the FDM. The corresponding status of the eFOI requests as of December 2017 are shown in Figure 1.

The top information providers in terms of number of successful FOI requests were the PSA, DOTr, DOH, and DBM (See Table 4).

<table>
<thead>
<tr>
<th>Agency</th>
<th>No. Of Successes</th>
<th>% of total (n=899)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippine Statistics Authority</td>
<td>261</td>
<td>29%</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>100</td>
<td>11%</td>
</tr>
<tr>
<td>Department of Health</td>
<td>70</td>
<td>8%</td>
</tr>
<tr>
<td>Department of Budget and Management</td>
<td>59</td>
<td>7%</td>
</tr>
<tr>
<td>Department of Justice</td>
<td>33</td>
<td>4%</td>
</tr>
<tr>
<td>Presidential Communications Operations Office</td>
<td>31</td>
<td>3%</td>
</tr>
<tr>
<td>Civil Aviation Authority of the Philippines</td>
<td>25</td>
<td>3%</td>
</tr>
<tr>
<td>Department of Public Works and Highways</td>
<td>24</td>
<td>3%</td>
</tr>
<tr>
<td>National Housing Authority</td>
<td>23</td>
<td>3%</td>
</tr>
<tr>
<td>National Economic and Development Authority</td>
<td>22</td>
<td>2%</td>
</tr>
</tbody>
</table>

7 From personal correspondence with PCOO.
As for eFOI requests that were health-related (Figure 2), close to a third (31%) of the requests were successfully processed, and most (43%) were being processed. All in all, 12% of requests were unsuccessful (denied or closed) and another third was pending (not acknowledged). This suggests that access to health information and data tends to be slow.

Figure 2: Status of eFOI for DOH (as of December 2017)

To summarize, if one needs health data and information, one can first check the ODPH if the data exists. While the available data on the ODPH is open in format, they are limited and not updated. The FOI dataset inventory, on the other hand, lists a limited number of datasets sourced from DOH’s EB, and these are in .pdf and, therefore, not technically open. One can also try to access it directly from the DOH website, but while there is more information, most of the reports and files, including those from the EB, are only in .pdf form, hence not open. Lastly, if the information cannot be found, this can be requested through the eFOI. This, however, takes time and there is no guarantee that the information will be available or provided.

Case of Health Data in the Time of COVID-19 Pandemic

The demand for and use of data during the COVID-19 pandemic is instructive of how data governance, not only in health, can potentially develop.

Some have mentioned that modelling the transmission of the pandemic in the country was difficult, in the beginning, because of limited disease surveillance data and estimates of the number of cases (Abrigo et al., 2020). The task involved obtaining data that properly identified who had the virus (COVID-19 positive), who were symptomatic but not yet tested, and who might have been exposed but were not symptomatic. Part of the limitation was the limited testing, and the length of time it took to get results. Hence an issue of data capture and reporting. In the early days of the pandemic, reporting was highly centralized and dependent on the announcements coming from the DOH. The first recorded case was on 30 January 2020 and by early March there were daily updates on new cases.

Some groups wanted to know where the cases were. Others wanted to know who the people infected were and which hospitals had cases and, eventually, how they can help. This lead to questions like what supplies (e.g. masks, personal protective equipment (PPEs), ventilators, body bags, freezers, testing kits, food) do hospitals need and then eventually to questions of health supply logistics (how to bring needs to their intended destination; where to get supplies). Stakeholders scraped whatever available data they could get from online sources as well as their own direct access to hospitals/crowdsourced data (see Figure 3).

Others interrogated the limitation of health information being reported to help make it more useful. For instance, while some simply presented daily updates of deaths reported, others nuanced this by reporting when people actually died, instead of when it was reported because of the lag due to reporting. Data visualization of this
is shown in Figure 4. If a decisionmaker refers to the data visualization on the left, they might think cases are increasing. But if nuanced on the actual date of the death, decisionmakers can actually see daily cases of death are on a downtrend. Sometimes, however, people were not referring to exactly the same data.

Stakeholders also debated the difference in the number of tests administered versus the number of people tested. Local government units (LGUs) also tried to develop their own system of tracking people under monitoring (PUMs) and patients under investigation (PUIs) amidst the limitations of existing testing parameters.

Figure 3. COVID-19 Health Data Ecosystem

Figure 4. Date of Death vs. Date of Public Announcement Infographic

Source: Haw, 2020
On 7 April 2020, the Department of Health issued a public announcement thanking the scientific community that worked with them to “develop the evidence needed by the Inter Agency Task Force for the Management of Infectious Diseases (IATF) to recommend the most appropriate steps for the country to beat COVID-19” (DOH, 2020, para. 1). These groups came from other agencies in government (e.g. PCHRD-DOST, academic community, medical schools, and volunteers). It acknowledged that while each group worked in their different models using technologies available to them, the groups acknowledged that “working together has resulted in increased rigor for each team’s output.” It ended by saying that details of the model will be made available to the public through official accounts of DOH and the respective institutions. As such, some of the better modelling and aggregation of data, from non-governmental sources, were migrated to the DOH portal.

By mid-April (April 12/13), DOH collaborated with other data scientists to come up with an improved data tracking portal: (https://www.doh.gov.ph/covid19tracker). This new tracker used data from the EB, partial reports from a data collection app from enrolled hospitals and infirmaries, and pointed also to PPE distribution data from the Office of Civil Defense (OCD), among others. The portal could show availability of beds, equipment, tests given, people tested, etc. and some stakeholders were looking forward to eventually getting access to open data of the data source from the portal.

On 14 April 2020, the Covid-tracker provided open access to its data to the public via a data dump. This theoretically allows all stakeholders and interested individuals to use the data and apply for whatever purpose (See Figure 5). DOH, as host, also posted a data privacy and confidentiality statement, stressing the commitment of the Department to publish information, consistent with the Republic Act (RA) 9485 or the Anti-Red Tape Act of 2007, and to protect privacy and confidentiality in line with the Data Privacy Act.

Analysis

Data sharing before and while COVID-19 crisis is on-going provide stark contrasts of how a bureaucratic solution versus a networked model of data co-creation operates. The model is still evolving and some of the things done during the COVID-19 pandemic may not be feasible in normal times because some policies may have been waived because of the circumstances (See Table 5).

Figure 5. COVID-19 Open Data Model

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8 These include Thinking Machines Data Science and Jason Haw.
Openness of government data in the Philippines, at present (pre-COVID-19), is reliant on two programs: the posting of open data and requests for data through the eFOI. A cursory review of the data available from these sources provides insights on the problems found therein: limited data, untimely information, and data that is difficult to aggregate because they are not open, and not uniformly applied. In other words, the open data landscape of the country remains problematic: disjointed, somewhat static and limited. The institutions for making the friction to access and use, especially making an impact on decisionmaking, need to be more open to be more efficient.

What this pandemic has highlighted, particularly in the case of health information systems, is a model for open government data that can be emulated. In terms of content, reporting is integrated into datasets and updated daily. Data is accessed from the source, whether it is from hospitals, LGUs, etc. Some privacy concerns have been raised with respect to some monitoring systems at the local level with the National Privacy Commission (NPC) and the Commission on Human Rights (CHR) providing their insights.

Access to private information raises issues of consent and the need for data governance protocols that limit access to private data. But with respect to the data on the tracker, it is already anonymized so privacy with respect to that dataset is not an issue. Finally, as far as process is concerned, participation and feedback from many sectors have been helpful in making the shared open data richer. The outputs emanating from this is also more diverse, as evidenced by various modellings that have been produced by different actors from different institutions. It has been useful for logistics planning, in identifying how goods (e.g. PPEs) are delivered, and how frontliners get to hospitals, among others.

**Policy Implications**

Moving forward, broader and long-term questions outside of the health domain will be raised. How will the quarantine be lifted? Which parts of the economy should be opened first? What kinds of safety nets must government provide and how can these be delivered to the poor? The report of the Interagency Task Force (IATF) to the joint congressional oversight committee, mentioned, among other things, the development of transportation analytics and supply chain planning for essential goods. Others asked if local nurses will be allowed to

**Table 5. Health Data Model**

<table>
<thead>
<tr>
<th>Openness</th>
<th>OpenData/eFOI/DOH portal</th>
<th>COVID-19 Tracker</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>Limited, not timely, raw data , and not useful Many data are in .pdf</td>
<td>Focused, regularly updated (daily); included crucial data on supplies; can be disaggregated by regions/LGUs and hospitals</td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>Heavily reliant on DOH data; not clear how reporting from field is incorporated</td>
<td>Crowdsourced; data not only from DOH central</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>Delayed updating of open data Some feedback provided on eFOI portal</td>
<td>Open to inputs from stakeholders; data requirements evolved; clear outputs from the data were generated (and since the same data were being used, it was also vetted)</td>
</tr>
</tbody>
</table>
migrate and work outside the country? How can Filipino seamen be fielded to work in ships that are crucial to keeping the world supply chain going? These and many other policy questions rely on data. But these are government data that remain disjointed and difficult to access. Many are in the stewardship of other agencies, such as the Philippine Statistical Authority (PSA), the Department of Transportation (DOTr), Department of Trade and Industry (DTI), Department of the Interior and Local Government (DILG), and Department of Social Welfare and Development (DSWD), among others.

As a result, many data collaborations are occurring during this pandemic. In fact, even within the University of the Philippines, many forms of data collaborations (informal and formal) have arisen to address diverse policy concerns related to the pandemic (e.g., modeling the impact on the economy, optimizing routes, etc.). Data collaborations can involve three or four organizations (or even more). Consequently these collaborators jointly establish data protocols, data exchange mechanisms, and jointly analyze data (Bertot & Choi, 2013 as cited in van den Broek & van Veestra, 2015). It is important to consider how these collaborations can lead to the institutionalization of better data governance in the future.

Data Governance and Open Data Platform

Data governance is the starting point for managing data and must provide answers to questions like availability, access possibilities, provenance, meaning and trustworthiness (Koltay 2016, pp. 305-306). What are the available data, and how can the content be shared and made more open? How can the generation and development of data to be tracked be open to more people, including those outside of government? How can the process be made more transparent? What are data stewardship issues that need to be resolved?

With sectoral collaboration in the development of data during the time of the pandemic (e.g., transportation, local government, logistics) becoming in high demand, an open model that considers content, people, and process will be important to institutionalize in other sectors of government aside from health. Mapping the data ecosystems for these sectors will be necessary. The challenge for government is how to grow this process of collaboration and institutionalize this form of data governance in other sectors (e.g., local government and trade) and other situations (e.g., other disasters), following the model for COVID-19 health information (see Figure 6).

Figure 6. Developing Sectoral Open Data Systems

![Figure 6. Developing Sectoral Open Data Systems](image-url)
While the DOH is the logical steward for health data, data stewards should also be assigned in other sectors. These could be the role of chief information officers (CIOs) and data privacy officers (DPOs) who would also determine, in consultation with the NPC and sectoral stakeholders, who may have access to sensitive information with data privacy issues.

Eventually, there should be a system that merges the different departmental data into one central data warehouse (see Figure 7). Consistent with the Anti-Red Tape Act, this will make it easier to find cross-sectoral data across the whole of government. For this, the DICT will be the logical accountable unit. Together with its attached agencies and units (e.g., the National Privacy Commission, Cybercrime unit, etc.) DICT must also protect the data and assure that the different departments maintain the regularity of updating its content. Integrated departmental and agency reporting systems must be ingrained to make whole of government data more timely and useful.

More dynamic data platforms, such as the artificial intelligence (AI)/big data hubs, should be benchmarked against other countries. With big data and data-driven innovation being considered now as drivers for economic growth (van den Broek & van Veestra, 2015), the sharing of data (use and application) in government and with the private sector must be a national strategy. In South Korea, for instance, the government strives to supply AI algorithms and customized data reflecting private demand, build large-scale and high-performance computing infrastructure to facilitate data use, and provide comprehensive support to the private sector through an open platform (AI Hub) (GRK, 2020, pp.24-25). In other words, the co-creation of data with the private sector must extend beyond provision and be practiced also in its use and application.

**Data Governance for Disasters**

The proposed Department of Disaster Resilience (DDR) that intends to absorb agencies like...
PAGASA and PHILVOCS would not have worked in this health crisis. The pandemic and how it was handled illustrate that data is central to disaster management. Access, use, and sharing of data and information relevant to the type of emergency is more crucial. This includes access to weather data during typhoons, geological data in the case of volcanic eruptions (e.g. Taal and Mayon), and health data in the case of the pandemic. Lallana (2020) argues that a superbody like the DDR would not work for disasters. He proposes, instead, a networked administrative organization (NAO) for disaster management with an administrative entity governing its activities. In the case of the COVID-19 tracker, its development can be viewed as an example of NAO, with data stewards being the administrative entity accountable to its data governance.

Obtaining data from individual users through mobile apps or self-reporting has also been instrumental in this pandemic. The various applications and models for obtaining citizen level data need to be scrutinized versus current data privacy laws. But at the same time, data privacy laws should also be revisited and amended in order to consider exemptions that will grant temporary access to relevant government agencies during emergency situations. Access and use of private information for the welfare of the larger population has to be considered, and limited access must be removed after the crisis (and private data properly disposed).

**Conclusion**

This paper does not argue that the COVID-19 data drop is ideal. There are still complaints on delays and inaccuracies, and the amount of data is limited by the government’s testing capacity. Nonetheless, the system of collaboration and immediacy in access and feedback are a welcome development and model. In an emergency, expediency of access to data, albeit with caveats with respect to quality, is more crucial. This can be offset by equal transparency and openness in sharing the limitations of the data and clear processes for correcting them when the errors are revealed.

The fact that people can access and scrutinize the daily updated data is what the open data movement aims for. Although the COVID-19 data is not perfect, the openness of the content, its openness to stakeholders, and the transparency of the process are what this paper highlights.

While the data sharing during the on-going pandemic still illustrates the fragmented information systems in the whole of government, it also shows that it is the shared need for data that can bring it together. The bureaucratic procedures that hamper data sharing and the hurdles of navigating sharing and privacy—how it has come to develop a platform or open portal specific to COVID-19—may be illustrative of how information systems for the whole of government can become organically linked, interoperable, and more useful.

Collaboration in the creation of this dataset and the freedom to make analysis/innovations on shared datasets is an important outcome of the pandemic. Who has rights and accountabilities with respect to the information gathered is an important aspect of data governance. Likewise, bringing expert analysis to influence policy and having a voice in the policy process is another challenge. Government remains the logical institution for aggregating official data and information and protecting data of its citizens. Open government also requires that government not only provide data, but to also listen to what citizens have to say about these data. Leveraging lessons from this case, post–COVID-19, and institutionalizing the lessons on data governance...
for the whole of government can become the new normal for data sharing. It will go a long way to improving government’s effectiveness in its daily operations and its preparedness to addressing unique challenges in the future.

References


