

Data Literacy

and Philippine Public Procurement Data

Ben Hur Pintor

Day 1 | 20-22 June 2022



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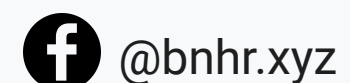
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Outline

- I. About the event
 - A. Code of conduct
 - B. About me
 - C. About you
 - D. Objectives and expectations
 - E. Schedule
- II. Session 1
 - A. Gentle introduction to open data
 - B. Open contracting and the OCDS
- III. Session 2
 - A. What is data literacy?
 - B. How do we build individual and organizational data literacy?
- IV. Session 3
 - A. The Data Pipeline
 - B. Data-driven projects using the Data Pipeline
- V. Session 4
 - A. How to make better data presentations
 - B. Free and open source tools for working with data
- VI. Session 5
 - A. Data ethics, data fallacies, and other considerations
 - B. How to start sharing and opening data
- VII. Session 6
 - A. Data expedition and brainstorming a data-driven procurement-themed project



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Code of conduct

Openness and Diversity - The event welcomes and encourages participation by everyone regardless of gender, sexual orientation, disability, physical appearance, body size, race, religion, and other protected classifications.

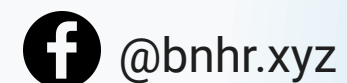
Harassment will not be tolerated - Harassment, in any form, which includes offensive verbal comments related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, age, race, ethnicity or religion, or advocating and encouraging harassing behavior will not be tolerated.

Be curious and inquisitive - Asking questions and asking often is encouraged. You may do so at any time during the session.

Stay on topic and mind the time - For the benefit of everyone involved, we should always try to keep our questions and queries on topic and be mindful of the time. If you have important questions that cannot be accommodated during the session, you may approach me or email me afterwards.



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Be a good neighbor

Making it work for everybody

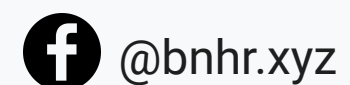
- Keeping your cameras on is not mandatory
- Mute yourself when you're not talking
- Be on time when coming back from breaks
- Respect others' speaking time and do not interrupt

Participating

- Raise your hand using the hand feature of Zoom
- Don't hesitate to raise your hand anytime for a question or remark or use the chat directly
- The activities are designed to help you learn so participate as much as you can



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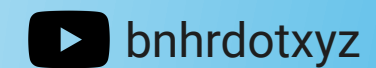
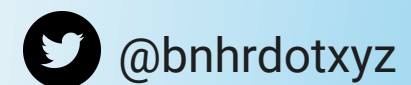
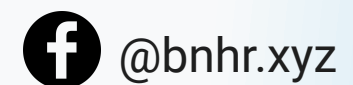


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About me



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Ben Hur Pintor

geospatial generalist. open stuff advocate. maptivist/dataactivist.

Data Training Lead



**Open Knowledge
Foundation**

Proprietor

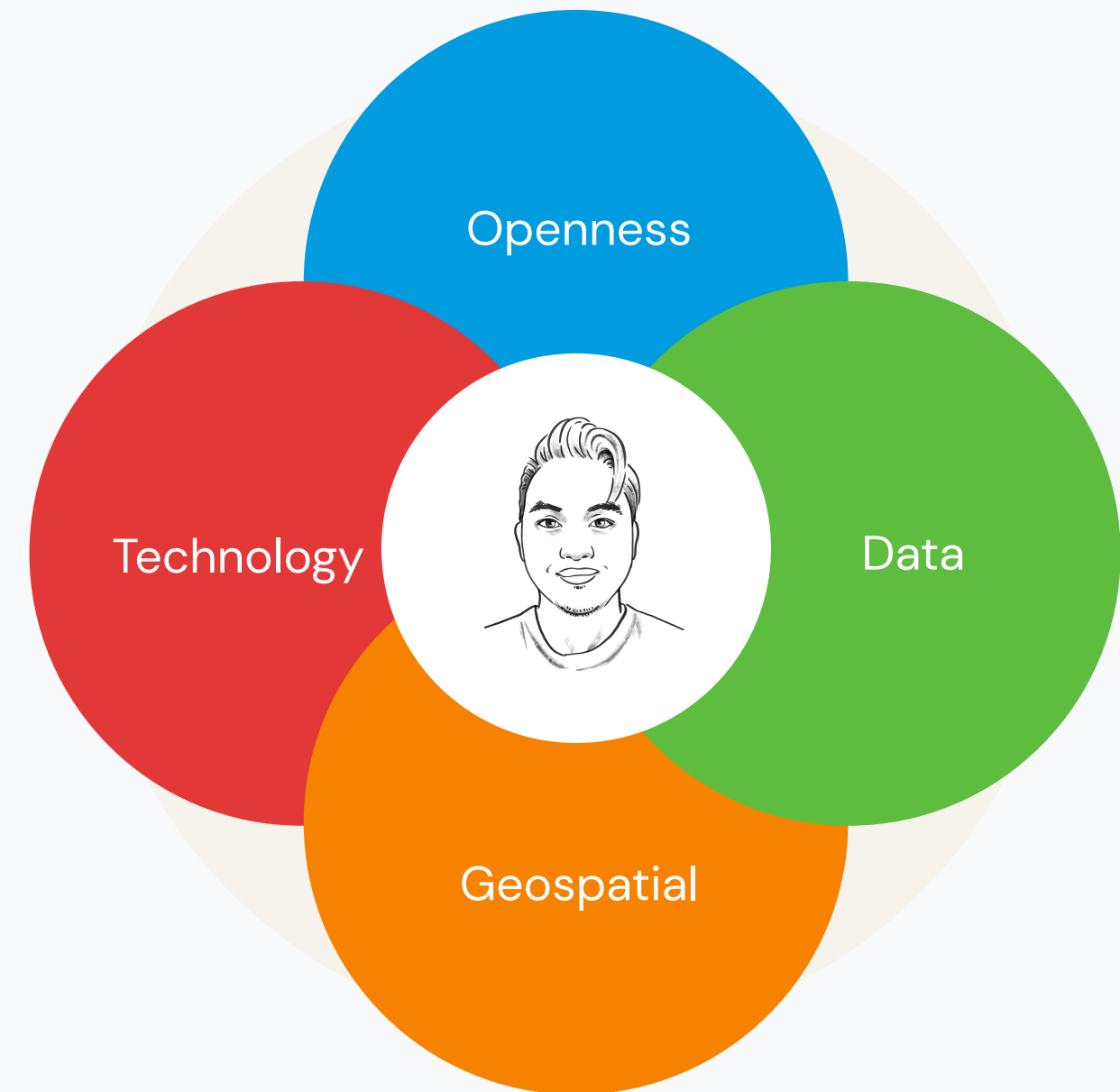


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Chief Technology Officer





SmartCT
Citizens x Technology



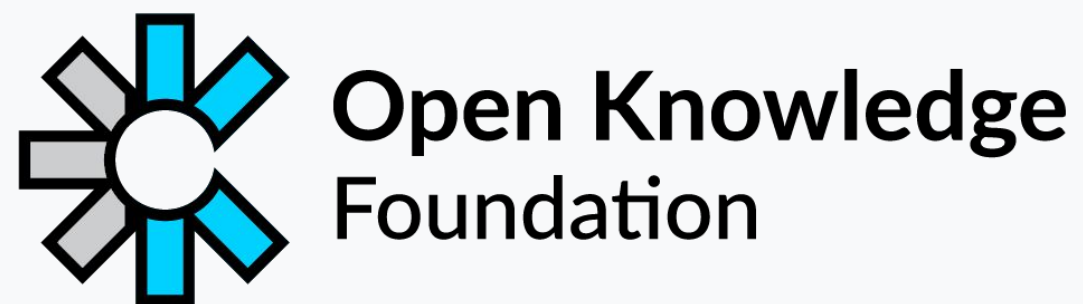
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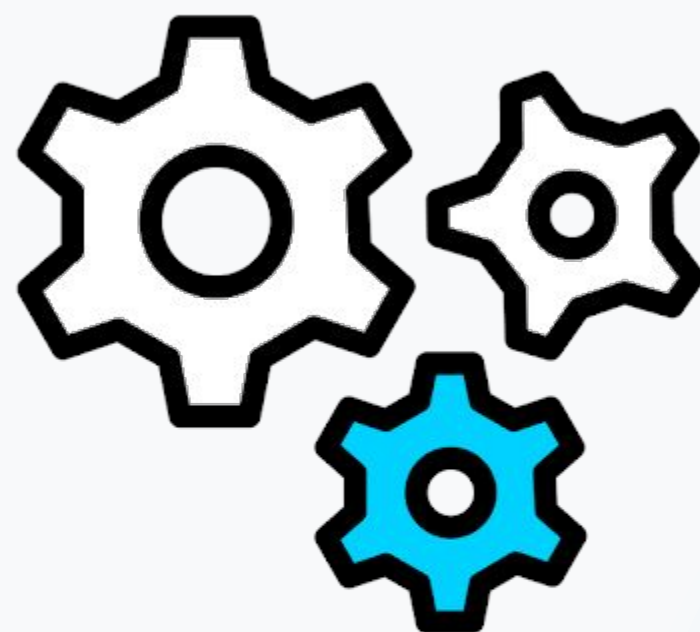
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We teach

If you or your organisation wants to learn about data literacy or even develop your skills to expert level, our team is here to help you on your journey.



We build

As open experts, we can create tools and provide services that help people and organisations put their data literacy learnings to work.



We organise

Through campaigning and community building, we're making an open future.



About SmartCT

SmartCT is the first tech non-profit in the Philippines and a pioneer in the smart cities field.

We aim to create a **movement that transforms the way we think, do, and plan smart cities and communities** especially in developing countries such as the Philippines through a co-developed, citizen-centric approach that puts openness and citizens at the heart of the development.

Making Smart Cities Open.



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geospatial.

- Established in 2019
- Part enterprise, part advocacy
- Provides training, support, and consulting services on open data, open source, data literacy, and free and open source software for geospatial applications (FOSS4G)

QGIS Certifying Organization

- Courses are vetted by the QGIS Project Steering Committee
- Can issue official QGIS Certificate

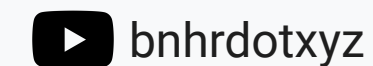
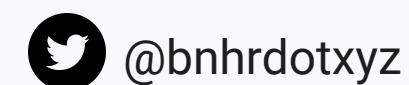
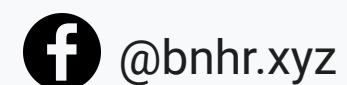
QGIS Sustaining Member

- Financially supports the QGIS Project
- Currently the only (and probably first) sustaining member from the Philippines



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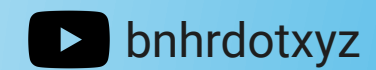
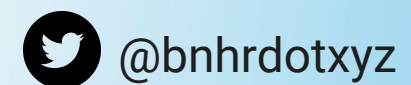
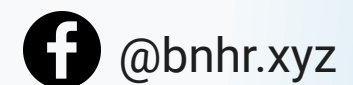
Some people I've worked with:



About you



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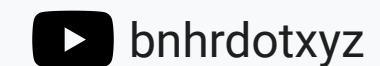
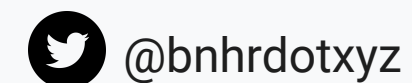
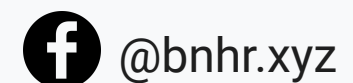
About you

Go to the link below and answer the questions. You have 3 minutes. :)

<https://bit.ly/3b6q3Ut>



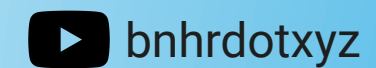
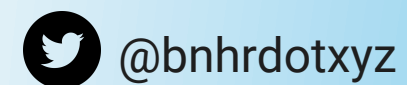
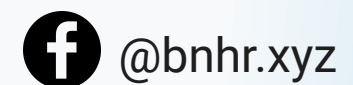
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Objectives and expectations



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How useful is a 3-day training?

The Data Literacy Activity Matrix

	CONTENT CREATION	TRAIN THE TRAINER	TRAINING BENEFICIARIES	DATA-DRIVEN PROJECTS
VERY SHORT TERM (< 1 DAY)		MEETUP WORKSHOP	MEETUP WORKSHOP	
SHORT TERM (<1 WEEK)		TRAINING	TRAINING	
MEDIUM TERM (<1 YEAR)	MOOC	BOOTCAMP	BOOTCAMP UNI CLASS	SHORT TERM DATA PROJECT
LONG TERM (> 1 YEAR)	ONLINE COURSE	CONTINUOUS TRAINING	UNI COURSE CONTINUOUS TRAINING	LONG TERM DATA PROJECT

Most valuable for...

-  Awareness and community building
-  Skill building
-  Support for skill building
-  Learning by doing

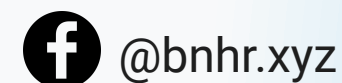
How do we make the most of 3 days?

The topics of data, open, data literacy, open contracting are vast and **being skilled at them requires a long and continuous process**. It involves a **long-term commitment** to build and develop data culture within and among different sectors of society. **We cannot build skills nor can we discuss everything in just a few days.**

We can, however, **focus on specific aspects of data literacy and open contracting that will make our journey easier.**



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How do we make the most of 3 days?

We can...

- Introduce the concepts of data, data literacy, open data, open contracting, and how to do data-driven projects using the data pipeline.
- Generate interest for open procurement data.
- Raise awareness about the different tools, best practices, issues, and misconceptions around open data in general and open contracting data in particular.



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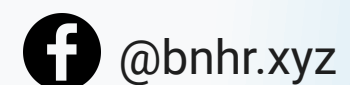
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Schedule

- 3 days—June 20-22, 2022
- Each day is divided into two 3-hour sessions (9AM-12NN, 1PM-4PM)
- Each session is composed of activities such as lectures, discussions, individual and group activities, question/answer, and open forum.
- The last session is reserved for a data expedition and brainstorming session where you will be asked—by group—to to apply what you've learned to plan or propose and present a data-driven project involving Philippine procurement data.



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At the end of the training...

- You have learned about the general principles around open data, open contracting, data literacy, and working with data using the data pipeline.
- You have experienced how to design and plan a procurement-themed data-driven project.



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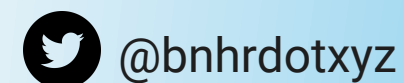
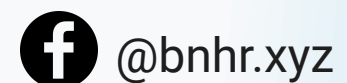
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BNHR Data Literacy 101

- You can find a data literacy curriculum on my website if you want to study the topics further: <https://bnhr.xyz/data-literacy-101/>
- You can also find more materials on data literacy and open data shared on BNHR's [Facebook](#), [YouTube](#), and [Twitter](#) accounts. Feel free to follow and subscribe.



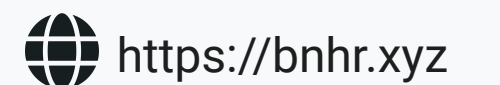
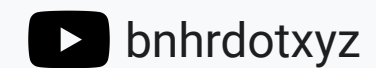
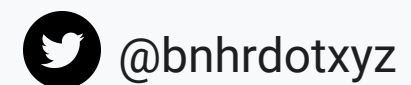
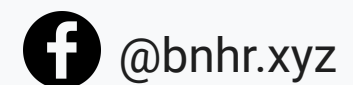
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Any questions?



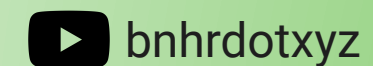
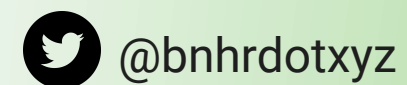
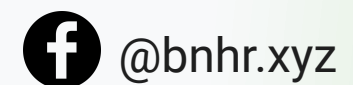
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A gentle introduction to open data



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Activity | What data is in...

Instructions

1. Go to this link: <https://bit.ly/3Op0yfa>
2. Get one thing from your purse, on your desk, or just the closest thing that's near you.
3. Provide 4 descriptions of the thing by answering the form.

Let's come back after 6 minutes.



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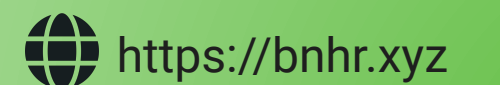
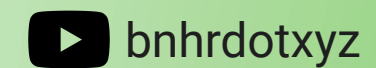
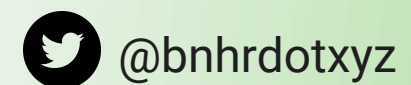
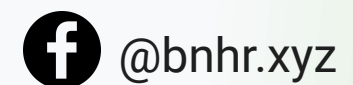


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What is data?



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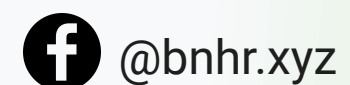


What is data?

- “Data may be thought of as unprocessed atomic statements of fact.” ([Open Data Handbook](#))
- If you ask 10 people, you might get 10 different answers.



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Data is a **structured**
representation of the world.



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Data is...

structured

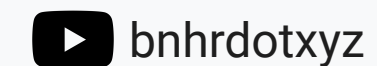
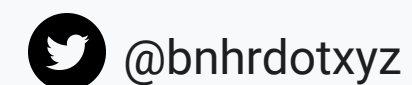
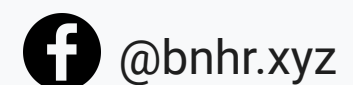
- follows logical and well-defined rules as to how it is stored or presented

representation of the world

- tries to capture a part of reality
- always almost impossible to represent reality in its entirety



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Structured representation...

non-structured representation

- Jose is a 35-year-old single male living in Pampanga.
- Maria is a 29-year-old married female living in Antique.

structured representation

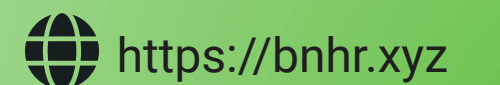
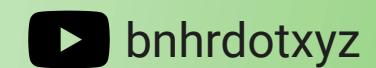
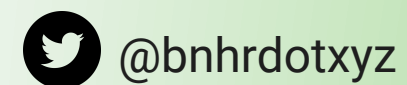
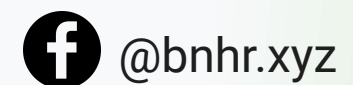
name	age	civil status	sex	location
Jose	35	single	male	Pampanga
Maria	29	married	female	Antique



Classifications of data



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Qualitative and Quantitative data

qualitative data

- data that refers to the quality of something
- unstructured (e.g. interview transcription)
- structured (e.g. a table organizing information from the interview)

quantitative data

- data that is numerical (can be quantified/measured)
 - the age of a person, the number of bidders for a project, the amount of the winning bid



Type of information

numerical data uses numbers to hold information. They can further be classified into:

- **discrete data** - distinct values with gaps between them
 - counting numbers or integers
 - number of bidders for a government project, the age of a person in years
- **continuous data** - with a continuous range
 - rational numbers
 - height of a person, the length of your foot in cm or inches as opposed to your shoe size which is discrete, or the amount of the winning bid for a government project

Type of information

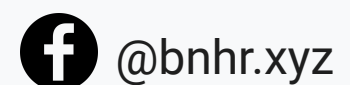
categorical data puts the object being described into a category

geographic or spatial data holds information connected to a particular place or location

time-series data holds information about the value/state of a particular thing over time



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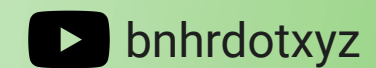
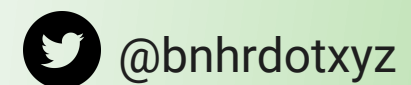
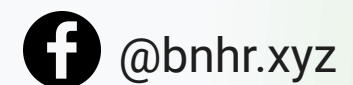


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The value of data



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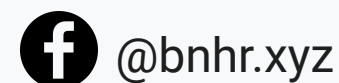
Let's play a game

1. I have a box in front of me.
2. The box is large and heavy.
3. There's a door in front of the box which I can open.
4. A light comes on when I open the door.
5. The inside of the box is colder than the outside.
6. There is usually food inside the box.
7. The box is usually found in the kitchen.
8. There are usually things put on top of the box.

What is the box?



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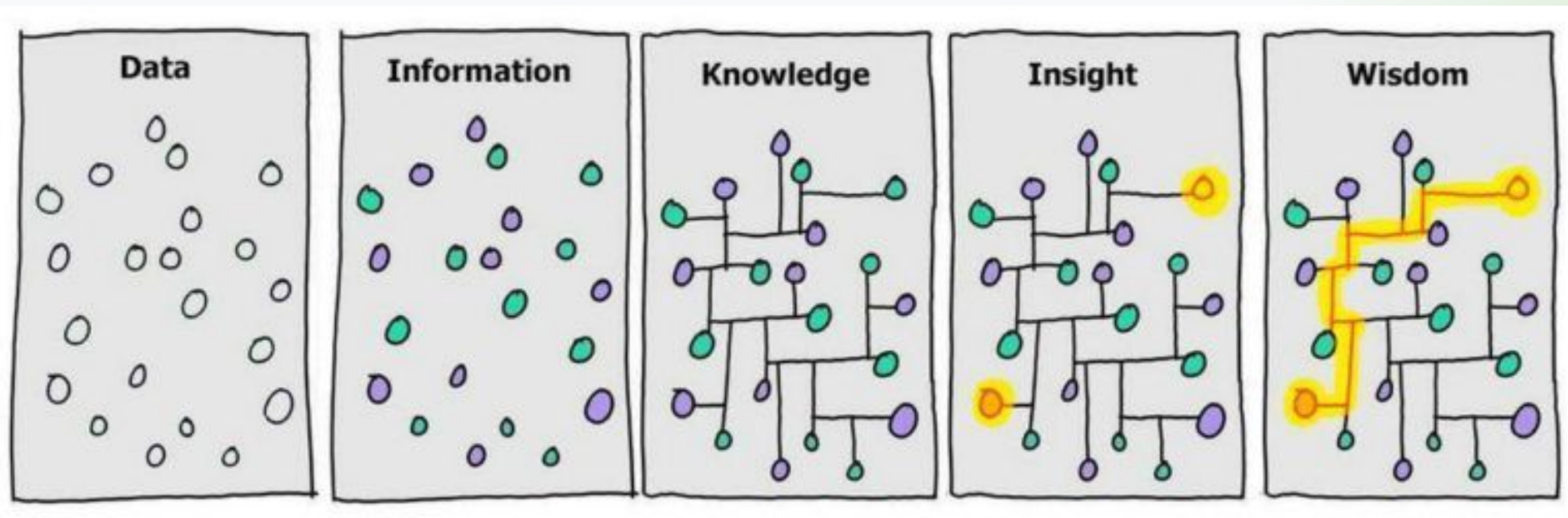
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The value is not in the data...

it's in what you do with the data.

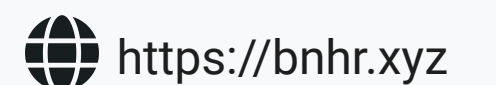
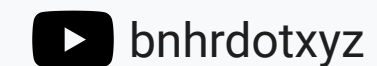
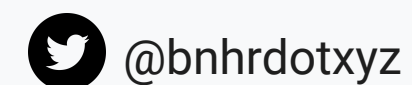
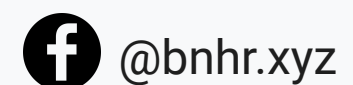


Context gives value

What if we played the same game with people who have never seen or heard of a refrigerator, would they give you the same answer?



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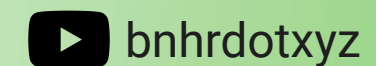
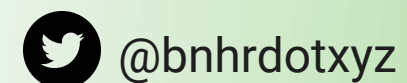
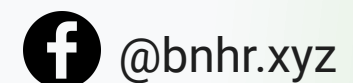


Data into action

- You cannot act on what we cannot measure.
- Data is valuable if you can use it to gain something.



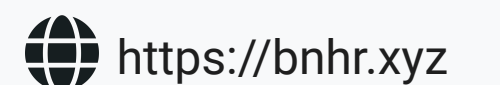
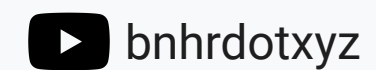
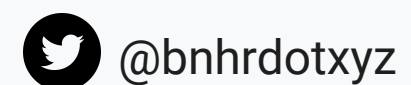
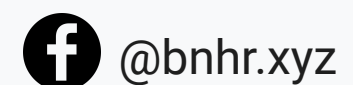
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The (ab)use of data



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The (ab)use of data

- Data is susceptible to both use and abuse.
- Data can and will lie. See: [Data fallacies](#)
- The way that data is collected, shared, and used should always be ethical and should consider issues such as openness, consent, bias, and privacy.
- [Data ethics](#) should always be considered especially when our data activities have the potential to affect people and communities directly or indirectly.



They keep saying **data is the new oil**—if they mean it is **dirty**, **monopolized** by a few, and **can destroy society** then they just might be right.



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Data is not a panacea.



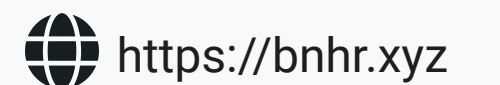
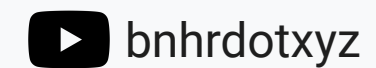
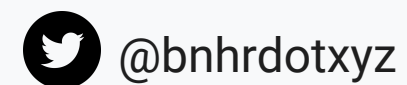
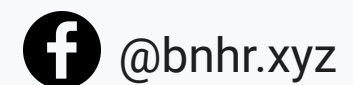
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What can data not do?



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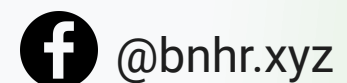


What can data not do?

- Data cannot give answers by itself.
- Data cannot replace community building and engagement.
- The end goal when working with data is not always a dashboard.



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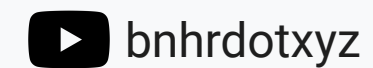
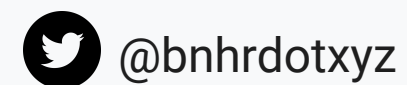
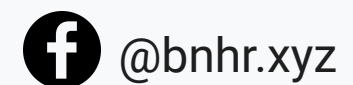


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Machine-readable data



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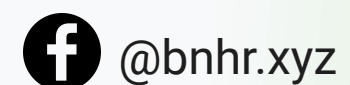


What does machine-readable mean?

- In the context of data work:
 - it **does not simply mean openable by a computer**
 - files and formats that allow for **easy extraction, processing, and analysis of the data that they contain**
 - spreadsheets and tabular data are the most common example
 - PDF documents are, generally, not machine-readable



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Group activity | Machine-readability

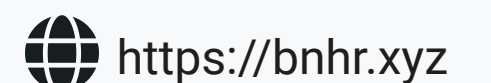
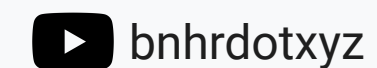
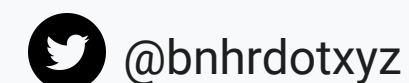
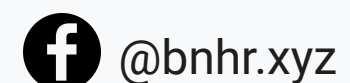
Instructions

1. You will be divided into two groups and given data to work with.
2. Go to this link and answer the questions: <https://bit.ly/3y3qkAq>
3. You can work together, only 1 form response is required per group.

Let's come back after 12 minutes.



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Why is machine-readability important?

Imagine this scenario:

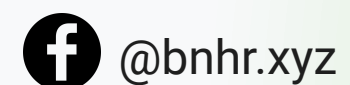
Juan and Pedro, **persons of similar skill and capabilities**, are both tasked with analysing the procurement activities of Procuring Entity A for the past 10 years.

- Juan is provided a PDF document containing the tables of A's procurement activities.
- Pedro was given the same dataset but in spreadsheet format.

Who do you think will be able to provide answers faster and more accurately, Juan or Pedro?



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Please release machine-readable data



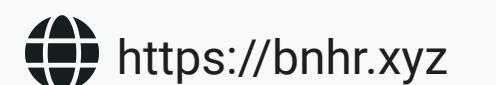
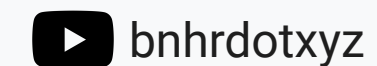
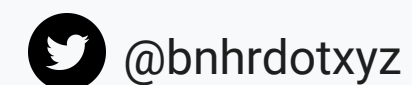
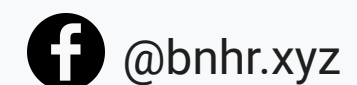
.pdf
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.csv
.ods
.xlsx



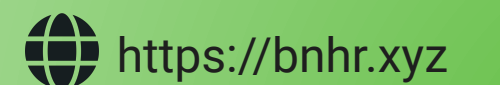
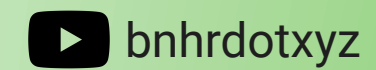
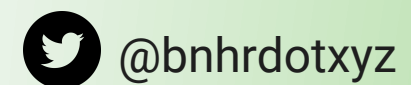
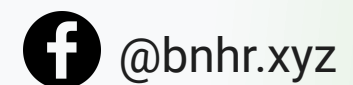
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Tidy data



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Tidy data principles

1. Each **variable** forms a **column**, and that **column** contains one **"type"** of data
2. Each **observation** forms a row
3. Each type of **observational unit** forms a **table**

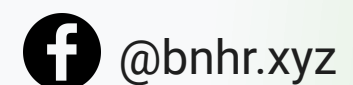


Untidy data/spreadsheets

1. Column headers contain values, rather than names
2. Multiple variables are stored in a single column
3. Variables are stored in both rows and columns
4. Multiple observational types are stored in a single table
5. A single observational unit is stored in multiple tables.



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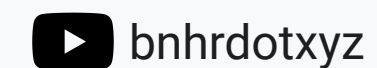
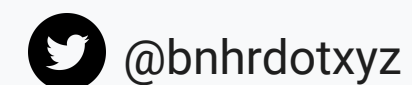
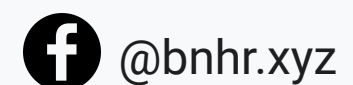
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Before we proceed:

**Is there anyone not familiar
or comfortable with using a
spreadsheet application?**



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Exercise | Tidy spreadsheets

1. Go to this link: <https://bit.ly/3Opn6g1>
2. Duplicate the “duplicate me” tab and rename it with your name.
3. Create a tidy version of the data on your tab by applying the tidy data principles.



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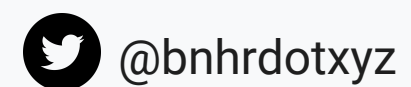
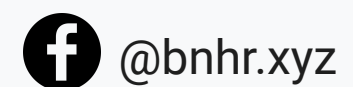


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Data standards



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Group activity | Data standards

Scenario

One of the projects of the local government is the purchase and distribution of wooden armchairs to different public schools in the province. **Group 1** is tasked with procuring and purchasing the wooden armchairs; **Group 2** is tasked with distributing the armchairs to the schools; while **Group 3** is tasked with monitoring and evaluation of the project to see if it was successfully implemented or not.

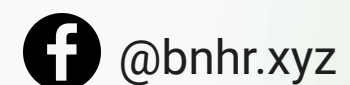
Without interacting or talking with the other groups, list down the data/information that:

1. You need to keep track of, measure, or record
2. You need from the other groups

Let's go back in 12 minutes.



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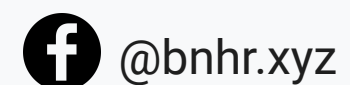
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Data standard

- Set of rules
 - structure of the file format used
 - naming conventions
 - common set of metadata fields
- Agreed upon by a **community of users**
- Can improve **data interoperability** and **data quality**



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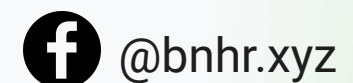
Standards help

interoperability

- prevents apples to oranges comparison
- helps ensure that data is compatible and comparable among different data users and provider



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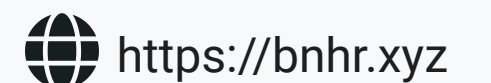
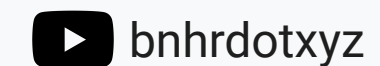
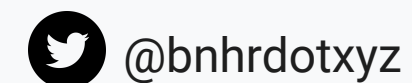
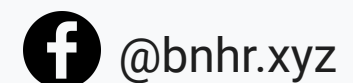
Standards help

data quality

- separate the bad apples from the good apples
- only data that meet certain criteria are considered and accepted



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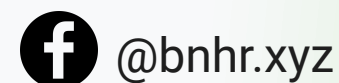


Think of it like buying a phone...

- By having a **standard set of information** for each item (e.g. price, battery life, storage space, RAM, camera specifications, etc.), we can **easily compare** them among each other and **select the best** one according to our needs.
- By **knowing what standards** these items meet, we can be **confident about what we can expect** from them.



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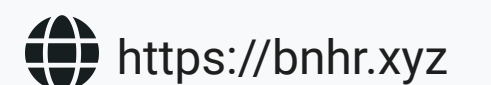
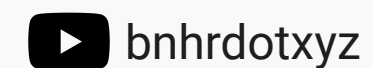
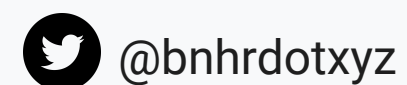
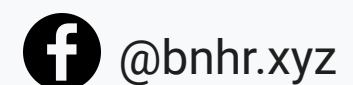


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What do we mean when we say open?



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Openness means **permission in
advance.**



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Permission in advance

- Openness ensures people **don't need to ask/request first**.
- Open means **anyone can freely access, use, modify, and share for any purpose** (subject, at most, to requirements that preserve provenance and openness). (The Open Definition, <https://opendefinition.org/>)
- **Free as in freedom**; not just free food. (Four Essential Freedoms of Free Software, <https://www.gnu.org/philosophy/free-sw.en.html>)
- Use an **open license**. (Open Source Licenses, <https://opensource.org/licenses>)



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Openness means **free as in**
freedom.



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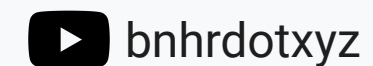
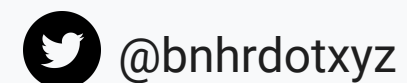
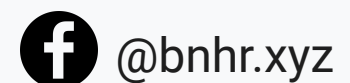


Free as in freedom

- Freedom to access the data
- Freedom to use the data
- Freedom to modify the data
- Freedom to share the data



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Don't be scared of freedoms...

One of the **common misconceptions** about open data is the fear that when an organization opens their data then it means **people are free to modify that data and use it to misrepresent their organization.**

This is not the case.

In fact, **having the data open makes it easier to verify if someone is misrepresenting it** because others can easily refer to the original data source for verification.



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The Free and Open Adobo



The **Free and Open Adobo** gives you the freedom to eat the adobo but also the freedom to study how the adobo is made, the freedom to modify the adobo to suit your taste by adding seasoning or changing the recipe, and the freedom to share the adobo with your neighbor.

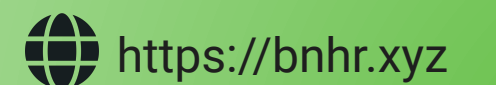
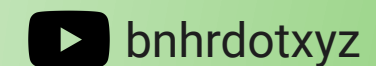
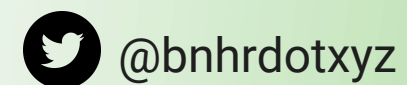
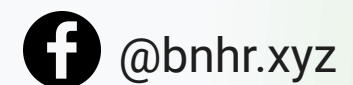
Your neighbor also gets the same freedoms as you and they will be able to change the adobo to suit their taste.

Imagine if we we aren't allowed to change adobo but merely eat what is given to us. How boring would life be?

Why is openness important?



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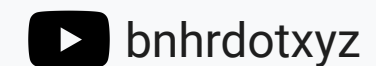
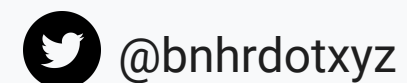
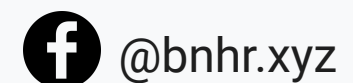


Why is openness important?

- **Transparency**
- **Accountability**
- **Ease of use and innovation**



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Is it enough that data is open?

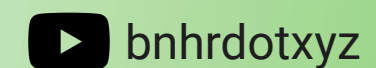
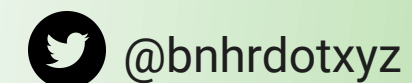
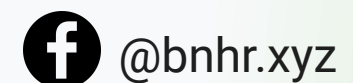
No.

There are a lot of external factors that can affect how useful open data is and how much actual impact it has.

But opening data is a good first step.



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What else can we do beyond open?

- **Frictionless data**

- reduce common data workflow issues (called friction) to make working with data easy and seamless

- **FAIR data principles**

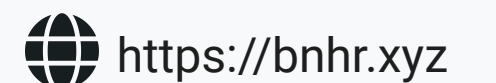
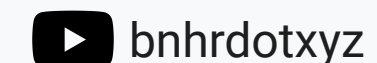
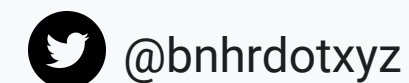
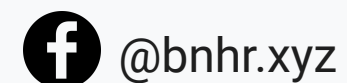
- Findable
- Accessible
- Interoperable
- Reusable

- **CARE principles for Indigenous Data Governance**

- Collective Benefit
- Authority to Control
- Responsibility
- Ethics



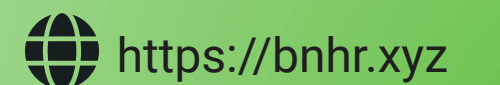
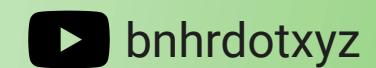
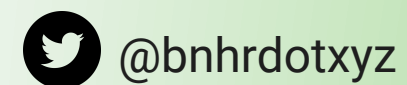
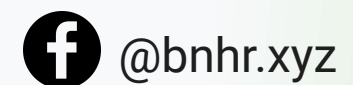
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Open data in the Philippines



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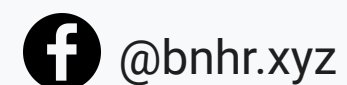
On paper...

On paper, there should be a good open data ecosystem in the Philippines:

1. It is one of the **founding members of the Open Government Partnership** (since 2011).
2. It has **adopted the Open Data Charter**.
3. It ranked **22/100+ countries with a score of 55 in the 2016 Open Data Barometer** which measures how governments are publishing and using open data for accountability, innovation and social impact.
4. It ranked **18/187 countries with the score of 73 in the 2020 Open Data Inventory** which measures how complete a country's statistical offerings are and whether their data meet international standards of openness.



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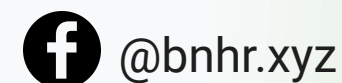
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But that's only on paper...

- **open data in the Philippines is difficult to get**
- **no open data law** and its Freedom of Information (FOI) mandate comes in the form of an Executive Order (EO No. 2, series of 2016).
- not uncommon to see **people and institutions hide behind the Data Privacy Law** in order to avoid releasing documents, data, and information
- **big disconnect between the state of open data on paper and actual state of open data in the Philippines.**



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Some sources of data in the Philippines



data.gov.ph



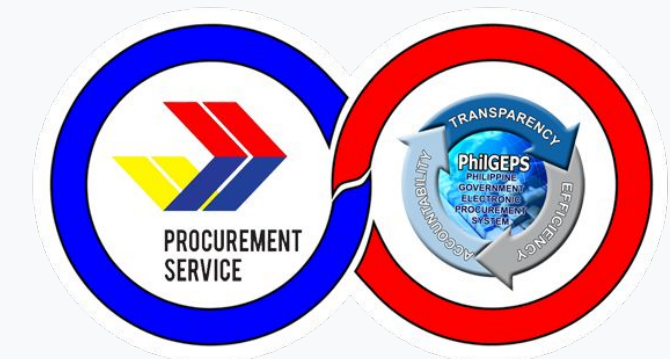
openstat.psa.gov.ph



geoportal.gov.ph




econdb.pids.gov.ph/





philgeps.gov.ph/CmsHomePage/open_data_grid



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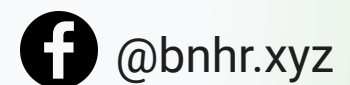
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What about FOI?



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Open data and FOI

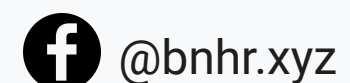
- similar goals but **not the same thing**
- not adversaries and **not meant to replace each other**
- **complementary tools** towards the same goal of building more transparent, trustworthy, and accountable institutions

But how are they different?

- **FOI is reactive or demand-driven.** Data is released only after a request is made and approved.
- **Open Data is proactive or supply-driven.** Data is made available regardless of whether there is a request for it or not.
- **Open data gives permission in advance.** Data users do not need to submit a request in order to access data. The barrier to data access is minimal to none.



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Getting data with FOI and open data

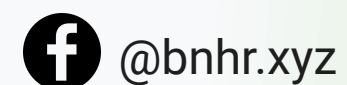
Under FOI, you need to submit a **request** to the office of interest and **wait** for them to respond to your request.

They may **either grant or reject** your request.

Under an Open Data Policy, if the data you need does not fall under protected data (e.g. personally-identifiable information, Constitutionally-protected information), then you can **get the data directly** (hopefully in a machine-readable format) without needing to request or wait for a response from the concerned office.



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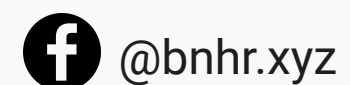
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Further reading/watching

- **Awesome Data Philippines** (<https://bnhr.xyz/awesome-data-philippines/>)
- **Openness for Local Governments [Part 1: Open Data] [Local Governments in the Digital Era webinar]** (<https://www.youtube.com/watch?v=cOdc1TSJI1A>)
- **Openness for Local Governments [Part 2: Open Source] [Local Governments in the Digital Era webinar]** (<https://www.youtube.com/watch?v=QDTrlznGgOg>)
- **Open Data in the Philippines is Not Open [Pista ng Mapa 2020]**
(<https://www.youtube.com/watch?v=uphU9uX8keQ>)
- **Pilipinas Got Data Ep 1: Philippine GeoPortal (Geoportal Philippines)**
(<https://www.youtube.com/watch?v=zB-EzJLxPFc>)



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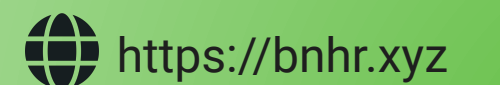
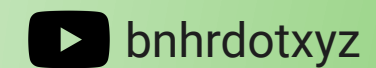
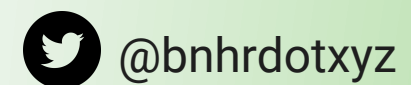
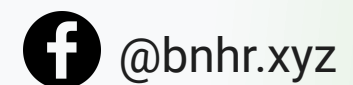


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Any questions?



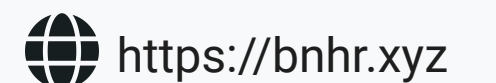
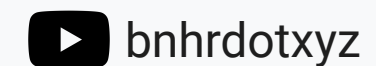
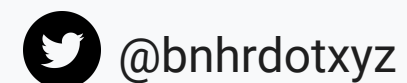
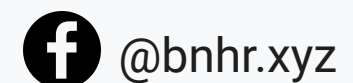
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Open Contracting and the Open Contracting Data Standard



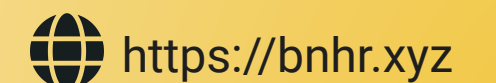
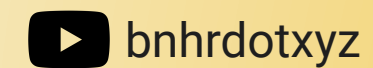
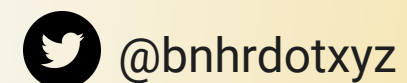
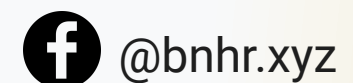
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Open Contracting Data Standard



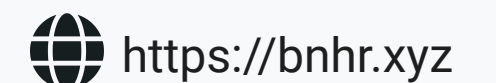
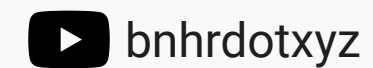
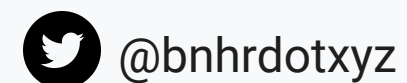
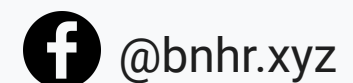
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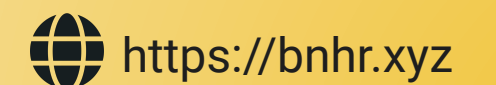
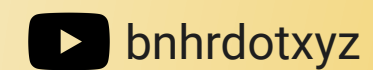
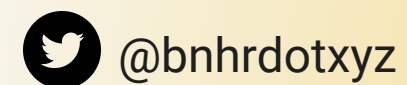
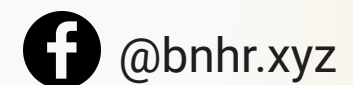
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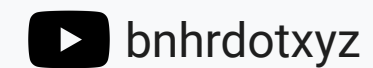
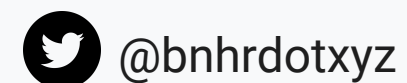
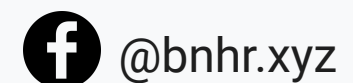
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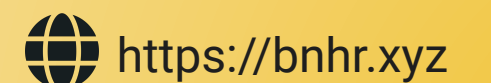
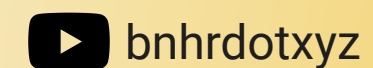
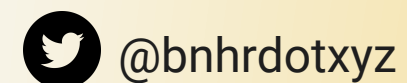
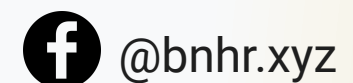
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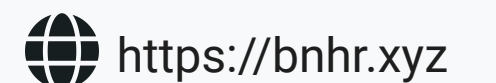
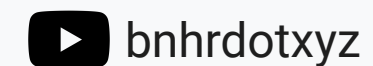
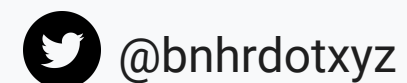
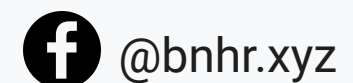
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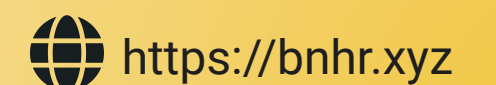
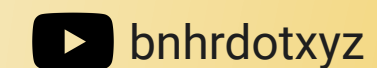
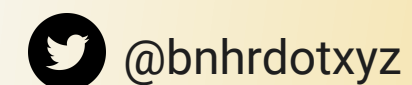
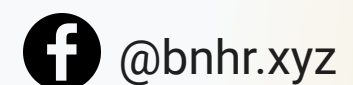


Open Contracting Data Standard

- OCDS
- The intersection of Open Contracting, Open Data, and Data Standard
- <https://www.open-contracting.org/what-is-open-contracting/>
- <https://standard.open-contracting.org/latest/en/>



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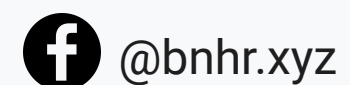


Open Contracting Data Standard

- free, non-proprietary, open data standard for public contracting
- describes a way to model and publish data along the whole public contracting process
- JSON schema
- [What is open contracting](#)
- [Open Contracting Data Standard](#)



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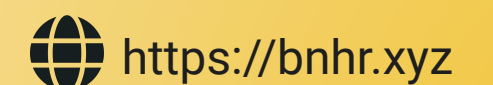
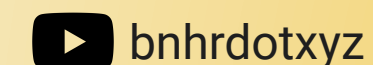
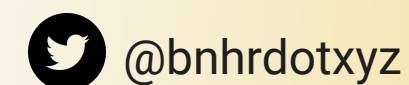
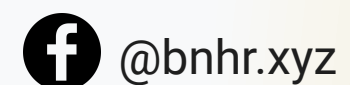
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Why publish in OCDS?

- easier to share, compare and analyze
- adapt and reuse existing visualization and analysis tools
- reduce costs and promote innovation
- address these four specific user needs:
 - Delivering **better value for money**, saving government money and time;
 - Building a **fairer** business environment and a **level playing field** for suppliers;
 - Improving **public integrity** by deterring fraud and corruption; and
 - Tracking and improving **service delivery**.

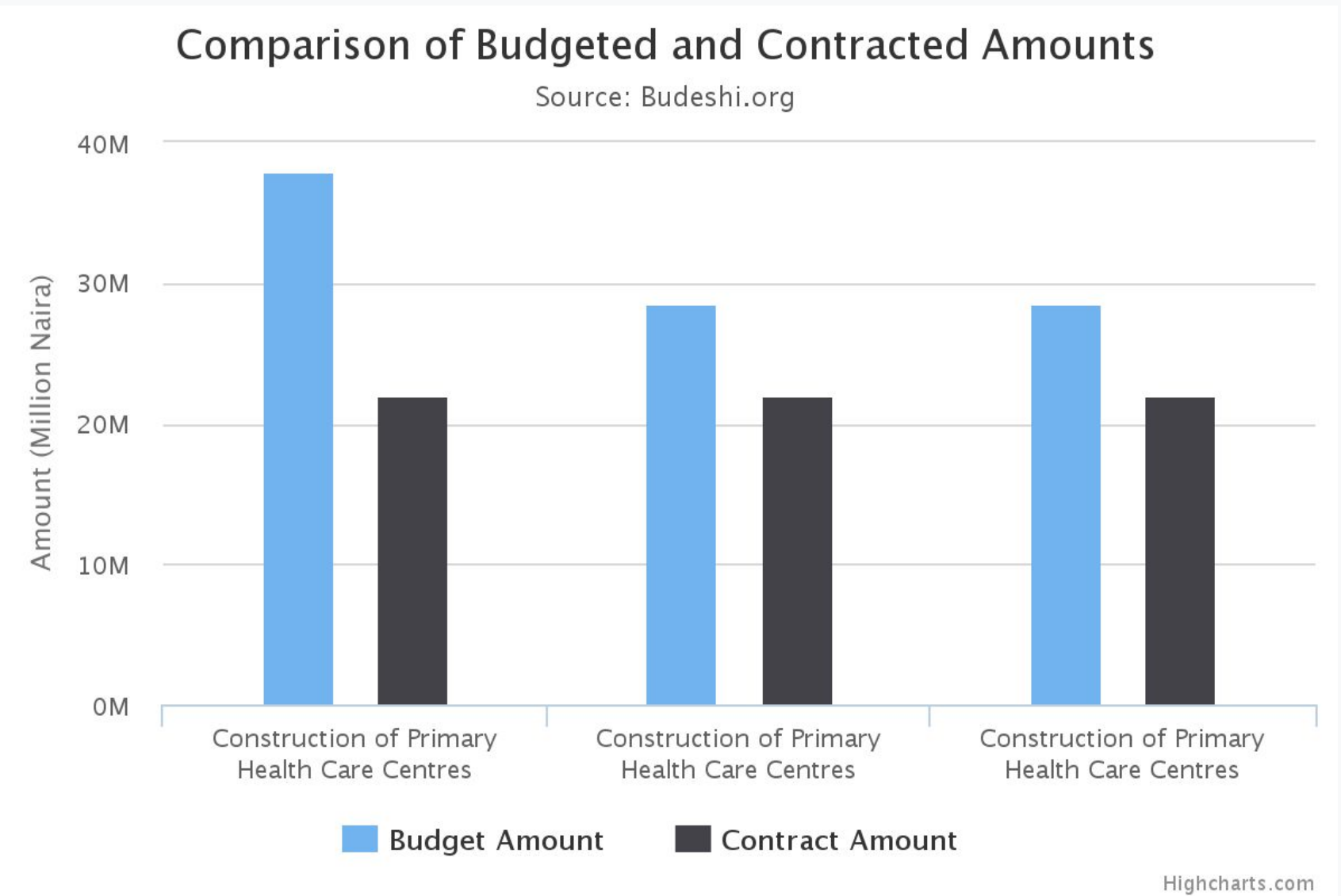


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Value for money in procurement

- Was money spent wisely?
- Is there over or under-budgeting?
- Are the prices used competitive?



Fairness and equal playing field

- Help past, present, and future bidders identify opportunities.
- Support a competitive and transparent marketplace that builds confidence in the procurement process.



Improving public integrity

- Can we identify red flags for corruption or anomalies?
- Can we identify patterns of collusion, overpricing, etc?

Table 5. Types of collusion and their indicators

Type of collusion	Market structure	Technique	Rent allocation	Market outcome	Market Structure	Collusion technique		Form of rent sharing	Bidding price distribution	
				Indicator 1		Indicator 3	Indicator 4	Indicator 5	Indicator 6	Indicator 7
A	Concentrated market structure	Withheld bids	Sub-Contractor	Relative contract value	Concentrated market structure	Missing bids		Prevalence of subcontracting		
B	Concentrated market structure	Losing bid	Sub-Contractor	Relative contract value	Concentrated market structure	Superfluous bidders	Ratio of faulty bids	Prevalence of subcontracting	Range of offer prices	Difference between first and second offer
C	Concentrated market structure	Joint bids	Consortia	Relative contract value	Concentrated market structure	Missing bids		Prevalence of consortia	Range of offer prices	Difference between first and second offer
D	Competitive	Withheld bids	Sub-contractor	Relative contract value	Stable market structure	Missing bids		Prevalence of subcontracting		
E	Competitive	Losing bids	Sub-contractor	Relative contract value	Stable market structure	Superfluous bidders	Ratio of faulty bids	Prevalence of subcontracting	Range of offer prices	Difference between first and second offer
F	Competitive	Withheld bids	Coordinated bidding	Relative contract value	Stable market structure	Missing bids		Cyclical winning		
G	Competitive	Losing bids	Coordinated bidding	Relative contract value	Stable market structure	Superfluous bidders	Ratio of faulty bids	Cyclical winning	Range of offer prices	Difference between first and second offer

Monitoring and service delivery

- Was the procurement completed satisfactorily?
- Are there avenues for improvement?
- How can we monitor the implementation more effectively?

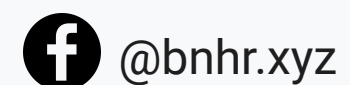


How to implement OC and OCDS?

- Set contracting reform goals and secure buy-in.
- Publish, use, and improve open contracting data.
- Improve stakeholder engagement and oversight.
- Measure, adapt and institutionalize reforms.
- [Implement - Open Contracting Partnership](#)



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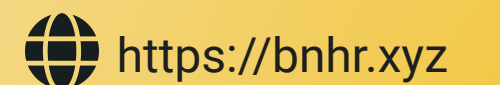
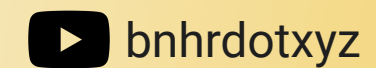
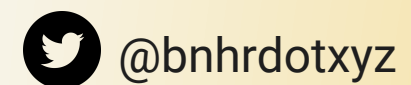
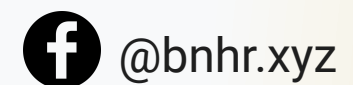


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Any questions?



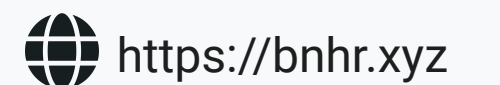
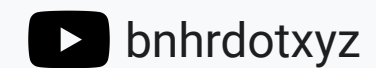
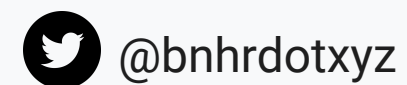
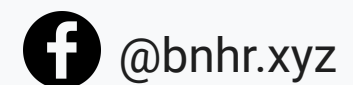
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Into the data literacy-verse



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The field of **data** is far too
important to be left to data
scientists.



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We need **more data literate**
citizens not just more data
scientists.



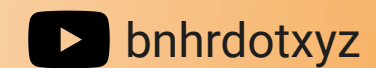
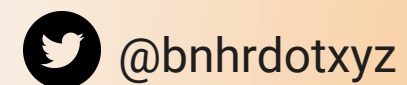
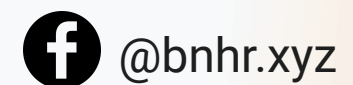
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But what is data literacy?



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It depends on you.
Data literacy can mean
**different things to different
people.**



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But we can agree that
data literacy is **not just data**
skills.



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Data literacy can mean different things

ROLE	TASKS
Manager	strategic planning, staff and organization development
Marketing & Communications	data analysis and narratives for storytelling, branding, and fundraising
IT	assess and support data products or tools and provide infrastructure
Training	provide learning opportunities, workshops, and technical training
Community	get and provide data, help/services, feedback

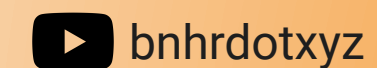
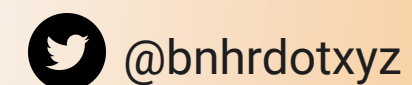
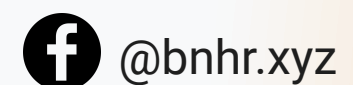
What does data literacy mean to you?

Instructions

1. Go to this link and fill out 1 row of the table <https://bit.ly/3beel4P>



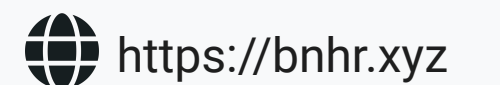
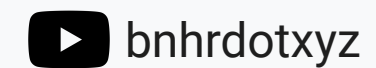
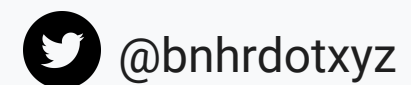
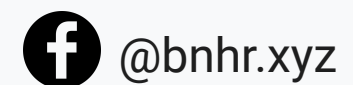
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Individual data literacy



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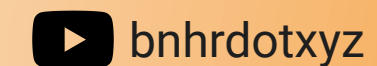
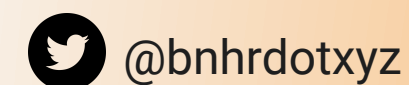
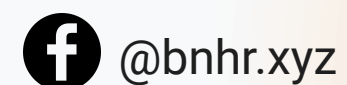


Individual data literacy

- ability to read, write, understand, communicate, and work with data in different ways
- very similar to having individual data skills
 - easier to build and improve individual than organizational data literacy
 - learn the [Data Pipeline](#) and using it for [doing data-driven projects](#)



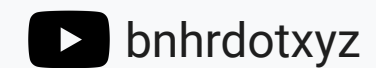
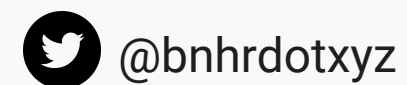
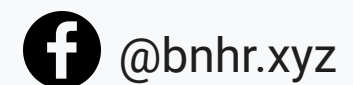
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Organizational data literacy



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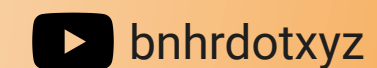
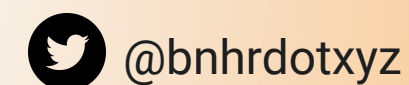
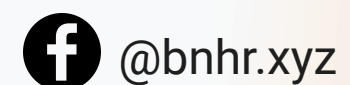


Organizational data literacy

- more complex and harder to build
- affected by leadership, vision, internal processes and mechanisms
- not just about the number of people with analytical data skills
- some of the people who take part in building data literacy and fostering data culture in an organization will have no analytic interactions with data and may never need to



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A data-literate organization...

- Uses [data as evidence](#) for evidence-based decision making;
- Uses [data ethically](#);
- Builds and fosters [data culture](#) within the organization;
- [Knows its data](#) and its [data users](#); and
- Empowers its members to learn, improve, and share their data skills and knowledge through activities such as [data socialization](#).



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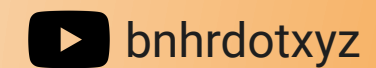
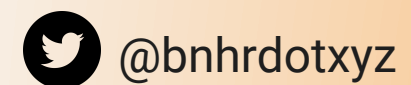
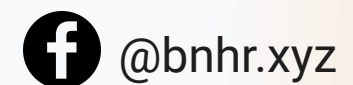


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Data as evidence



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Data as evidence

- can lead to **better and non-arbitrary** policies and decisions.
- requires:
 - a sound theory
 - a coherent set of testable hypotheses
 - a robust dataset to validate and refine the hypotheses



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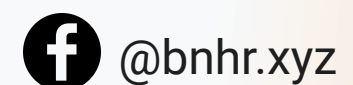
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Example: COVID-19 quarantine levels

- Should we be in ECQ, MECQ, GCQ?
- What are the **evidence for and against** each option?
- What are the **parameters** to say that we are at this level of quarantine?
- Are these parameters **easily understood by everyone**?



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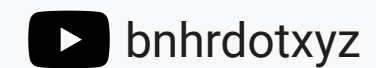
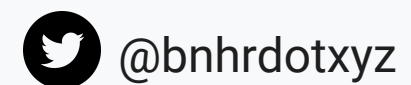
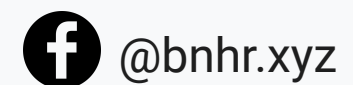


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Data ethics



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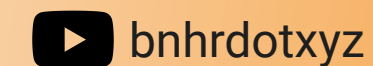
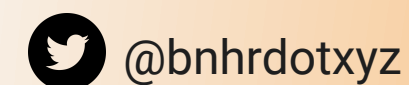
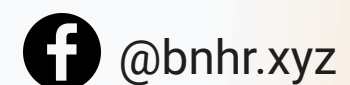


“Data ethics is a branch of ethics that **evaluates data practices** with the potential to **adversely impact** people and society – in **data collection, sharing and use.**”

(The Open Data Institute, <https://theodi.org/service/data-ethics/#explainer>)



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Data ethics

1. Isn't just about personal data

- The choice of making public data accessible only through online services, especially in poorer areas, without providing offline alternatives can mean that people without access to the internet are left out and can increase existing inequalities.

2. Isn't just about compliance with the law

- Some data activities can be lawful but not ethical (think: Cambridge Analytica, “Emotional Contagion” research)

3. Isn't just about how data is used

- Not collecting data about certain groups of people is bad but collecting data only about certain groups of people is worse as this could create a higher risk of discrimination and profiling.

4. Isn't just about restricting access to data

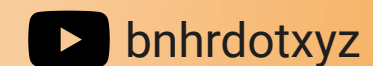
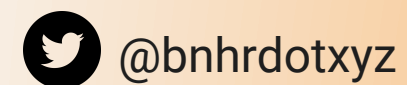
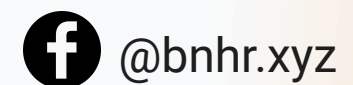
- If everyone could trust everyone else that they will be ethical with data then we would see more organizations opening up their datasets instead of restricting access to it.



Knowing the state of your data



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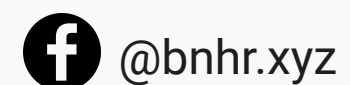


Data and skills inventory

- **What data do you currently have?**
 - Where are they located? How are they accessed? Are they open?
- **What other data do you need?**
 - Where can we find them? How do we get them? Are they open?
- **What skills do we currently have?**
 - What skills do we want to share?
- **What skills do we want to learn?**
 - Are there people we know who can help us learn these skills?



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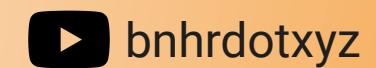
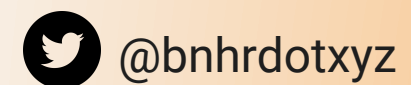
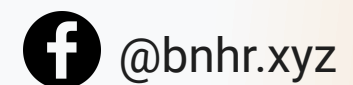


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Knowing your data users



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There isn't a single kind of data user.

There are many kinds of data users.



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Data users

- **move away from the data user stereotypes:** data people aren't just limited to IT people, "nerds", those with no social skills
- **diverse** and **inclusive**
- come in different shapes, sizes, and skills
- **have different needs**



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Data users

- those looking for an entry or starting point to get into data
- those looking for ways to continue their data skills learning journey
- those that have highly specialized data skills
- those that can cover a majority of the data skills spectrum
- those who advocate for data literacy within the organization (may or may not be skilled users)



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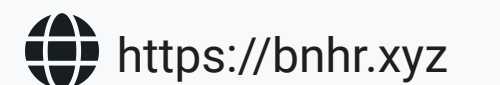
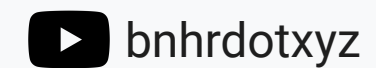
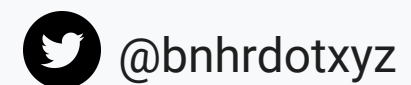
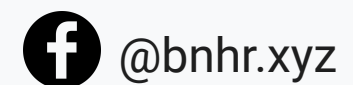


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Data socialization



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**Data Socialization involves
sharing and learning data skills
while fostering a data culture.**



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Data is a team sport.
There is **no i in data.**



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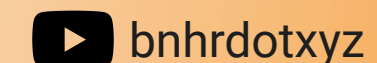
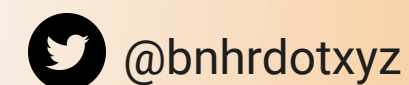
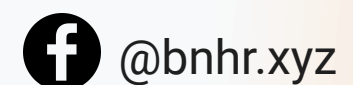


How do we socialize?

- **Skills Scoping**
 - Getting a baseline understanding of the skills and opportunities for an organization—make people talk about data, what skills they want to learn or share, etc.
- **Informal Data Working Groups**
 - Aka Meetups. Open to everyone where people are free to share and learn new data skills (initially based on the outcomes of the Skills Scoping).
- **Put People Before Data**
 - Create spaces for conversations and give everyone equal access to explore their data skills.
- **Track progress and iterate**
 - Check both individual and organizational progress, evaluate the success of interventions, and adapt to the results accordingly



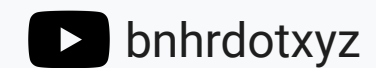
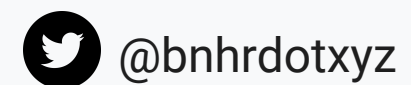
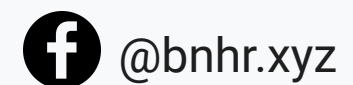
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Any questions?



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Thank you!



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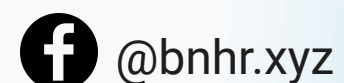
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