DATA JOURNALISM ASSESSMENT MALAYSIA

Data Journalism in a Constrained Environment

Acknowledgments

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Finally, we would like to thank the individuals and organisations whose work and previous research contributed towards the understanding of data journalism and media landscape.

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Summary

Key Points/Findings

- Lack of quality granular open data.
- Restrictive legal environment for right to information and freedom of expression make getting access to data difficult and puts journalists and sources at risk of persecution
- Malaysian journalists are applying innovative methods in sourcing and generating their own datasets for data journalism despite these challenges

Summary of Findings

There is limited open data across all sectors available for Malaysian journalists, making it a difficult and challenging environment for data journalism. What open data is available, often lacks granularity and is often incomplete. Given a story idea, it is unlikely that a large quality dataset can be found, ready for use for a data driven story. Data, however is still available, but fragmented across multiple sources local and international, and as unstructured data in documents and graphical infographics.

Journalists face legal restrictions in sourcing for data, with no national Right to Information law, overly broad Official Secrets Act and severe criminal sanctions with up to a year's jail for public officials sharing information, even when such information is not filed as a state secret. When publishing a story, journalists face additional challenges of overly broad laws restricting freedom of expression for both online and print media.

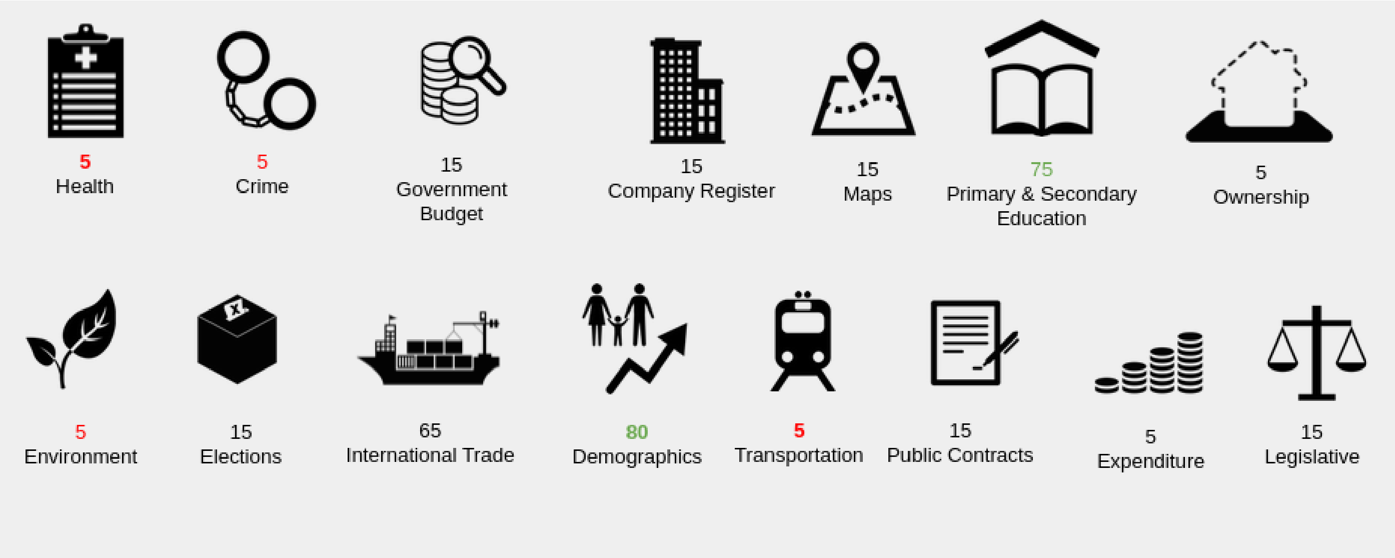
Despite these restrictions, Malaysian journalists have developed innovative methods in finding and sourcing their data needed for award winning data journalism from COVID-19 to deforestation. This includes, creating their own data structures in spreadsheets, and populating it from a variety of sources, and at times, becoming the source of public interest data through these efforts long after the data driven story has been published.

This difficult environment blurs the boundaries between investigative and data journalism. In addition to providing readily available sources of data, this assessment report also shares case study examples of data journalism on health, environment, human rights and anti-corruption by leading local journalists, and a compilation of techniques and tips in finding and sourcing data needed for data journalism in Malaysia.

State of Open Data and Data Journalism in Malaysia

Open without Freedom

Limited availability of open data

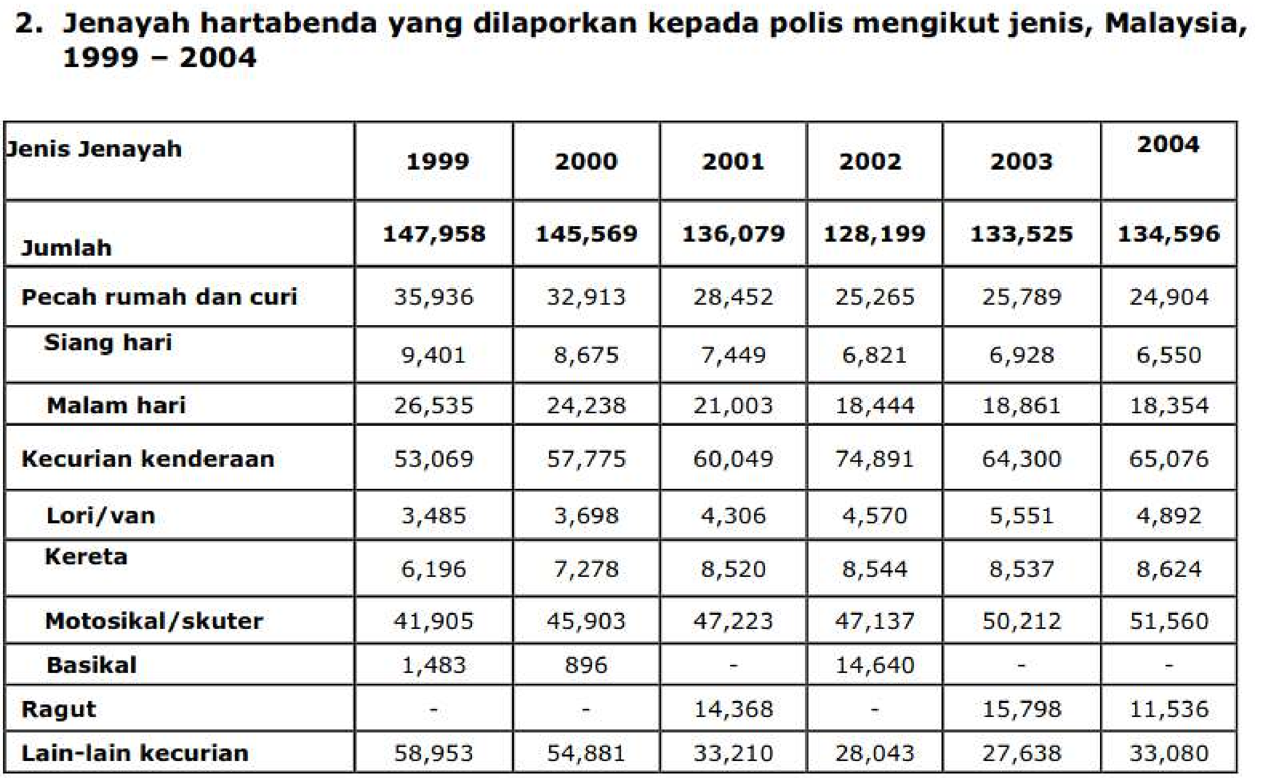


Open Data Barometer 2016

The Malaysian government has had an open data initiative since 2015, which includes a central government open data portal data.gov.my, a government wide circular providing guidance on the need for open data[1] as well as standard license by government agencies for publication of open data. Superseding directive in 2021, it provided even more detailed guidance on publication of open data, including open data requests between government agencies.[2] As of 2021, the portal publishes over 12 thousand datasets from 394 agencies and departments.[3] Government websites also have standard disclaimer and page on open data.

Open data surveys from Open Data Barometer (2016)[4] and Global Open Data Index (2015)[5], find that availability of quality, granular open data for key government sectors is very poor. Sectors such as environment and health, areas which Malaysian journalists attending data journalism workshops wanted to do their stories on were ranked poorly in terms of availability.

Civil society groups and researchers continue to note that granular, complete, timely and open data, the same criteria needed for data journalism, is often not available or free. Data published on government websites were also often not machine readable and published in the form of PDFs. [6]



2. Jenayah hartabenda yang dilaporkan kepada polis mengikut jenis, Malaysia, 1999 – 2004

Jenis Jenayah	1999	2000	2001	2002	2003	2004
Jumlah	**147,958**	**145,569**	**136,079**	**128,199**	**133,525**	**134,596**
Pecah rumah dan curi	35,936	32,913	28,452	25,265	25,789	24,904
Siang hari	9,401	8,675	7,449	6,821	6,928	6,550
Malam hari	26,535	24,238	21,003	18,444	18,861	18,354
Kecurian kenderaan	53,069	57,775	60,049	74,891	64,300	65,076
Lori/van	3,485	3,698	4,306	4,570	5,551	4,892
Kereta	6,196	7,278	8,520	8,544	8,537	8,624
Motosikal/skuter	41,905	45,903	47,223	47,137	50,212	51,560
Basikal	1,483	896	-	14,640	-	-
Ragut	-	-	14,368	-	15,798	11,536
Lain-lain kecurian	58,953	54,881	33,210	28,043	27,638	33,080

Caption: Non-machine readable data as PDFs. Criminal property reported to the police according to types, Malaysia, 1999 – 2004. Source: Royal Malaysia Police

Punca : Polis DiRaja Malaysia

These problems are compounded for data journalists, because granular data needs to be combined across sectors such as education levels against local demographic data to provide more meaningful insight for stories.

Limited availability of useful open data for Malaysian data journalists, requires that additional techniques in finding and generating data needed for stories, will need to be applied.

No Right to Information

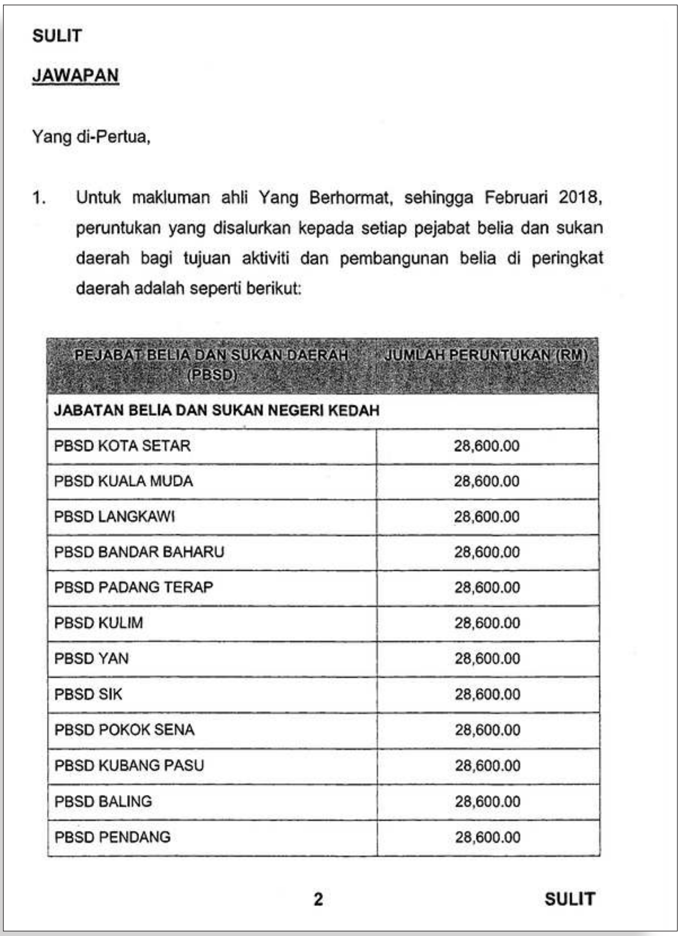
Data availability in Malaysia, also faces considerable challenges due to a lack of a national Right to Information (RTI) law, compounded with multiple laws and regulations with broad restrictions on publication of government information with heavy punitive penalties. This creates a closed by default environment for access to data and information, counter to the goals of open data.

The Official Secrets Act 1972 provides wide discretionary powers for the government to restrict availability of data. Broad terms of any official document along with conferring powers to any government official, provides for broad discretionary power to define any government document including data as an official secret, and carries with it a penalty of a year's imprisonment.[7] This has lead it to being abused in practice, with even public published documents such as parliamentary reports or local council papers in the State of Selangor[8]. This also creates a dangerous environment for journalists, because even linking a classified document can lead to arrest.[9]

The tabling of a state level Freedom of Information law for the state of Selangor, is one example of how an RTI law can have a positive impact on making data and information open by default. Since the tabling of the enactment, local council papers and other state government documents are no longer classified as an official secret.

> *“(1) Whoever discloses any information or matter which has been obtained by him in the performance of his duties or the exercise of his functions under any written law shall be punished with fine of not more than one million Ringgit, or with imprisonment for a term which may extent to one year, or with both.* - Penal Code Section 203A

Additionally another law, Penal Code Section, 203A, further puts public officers at risk of a RM1 million fine or a year’s imprisonment or both, for disclosure of any information or matter obtained while on the job.[10] This law provides an additional impediment to journalists trying to obtain information or data on request, as it puts their government sources at risk. As was the case for journalist Boo Su Lyn for Code Blue, who was questioned by police for investigations for citing a public government report in reporting a hospital fire.[11]



SULIT

JAWAPAN

Yang di-Pertua,

1. Untuk makluman ahli Yang Berhormat, sehingga Februari 2018, peruntukan yang disalurkan kepada setiap pejabat belia dan sukan daerah bagi tujuan aktiviti dan pembangunan belia di peringkat daerah adalah seperti berikut:

PEJABAT BELIA DAN SUKAN DAERAH (PBSD)	JUMLAH PERUNTUKAN (RM)
JABATAN BELIA DAN SUKAN NEGERI KEDAH	
PBSD KOTA SETAR	28,600.00
PBSD KUALA MUDA	28,600.00
PBSD LANGKAWI	28,600.00
PBSD BANDAR BAHARU	28,600.00
PBSD PADANG TERAP	28,600.00
PBSD KULIM	28,600.00
PBSD YAN	28,600.00
PBSD SIK	28,600.00
PBSD POKOK SENA	28,600.00
PBSD KUBANG PASU	28,600.00
PBSD BALING	28,600.00
PBSD PENDANG	28,600.00

2 **SULIT**

Caption: Public parliamentary reply marked as secret.

Restrictive licences/ paywalls for data and public information

> -literary work includes-
>
> ...
>
> ***but does not include*** *official texts of the Government or statutory bodies of a legislative or regulatory nature, or judicial decisions, or political speeches and political debates, or speeches delivered in the*
>
> *course of legal proceedings, and the official translation thereof*
>
> Malaysian Copyright Act 1987

Malaysian Copyright Act 1987 (Act 332)[12] states that official texts of the Government or statutory bodies are in the public domain and not copyrightable. Despite this provision, civil society groups and researchers have raised concerns that a lot of data is not free.[13] Many agencies are also required by regulation to charge a fee for data provision when the data coverage is larger than a specific scope in terms of aggregation, volume or time series.[14] This has led to government documents that legally should be in the public domain, assigned a copyright and only accessible via a paywall such as the case with State Gazettes.

Constraints on Media Freedom and Freedom of Expression

At the publication stage, journalists in Malaysia also faced a variety of challenges both legal and editorial, with press freedom categorised as a difficult situation and dropping down 18 places in the World Press Freedom Report 2021.[15] Broad laws that restrict the work of journalists include the Sedition Act and the Communications and Multimedia Act. Editorial independence is also limited with print and television media owned by the business arms of political parties, leading to self-censorship by journalists.[16]

Recent cases include expelling two of Al-Jazeera's Australian journalists, and seven journalists questioned on 4th August, 2021 for reporting of treatment and conditions of migrant workers. A migrant worker who appeared in the story, was arrested and deported.[17]

The World Bank Open Data Readiness Assessment report also found in interviews that the Malaysian government did not regularly identify media/journalists as a potential user of open data.[18] The report also recommended that online media, due to their diversity in comparison to traditional media, is likely to have the best starting point for using data.

Data Availability and Sources

This section covers data availability and sources by sector. Note that due to lack of open data availability in general for Malaysia, sources are likely to be inconsistent in terms of coverage, granularity and quality.

As data availability and sources are constantly being updated, a live updated version of the data sources section is available online. (https://docs.google.com/spreadsheets/d/1mg0jZiAWfTM4se8kowL9ECQa5TM-eIxWHW2L7xR-pzA/edit#gid=0)

Due to limited data, especially granular, journalists should not limit sourcing their data from specific sector sources only. Granular data on demographics of indigenous groups for example, can be found in environmental assessment reports, instead of general demographic statistics.

A similar approach can also be taken in trying to source Malaysian data from international data sources such as the World Bank.

General

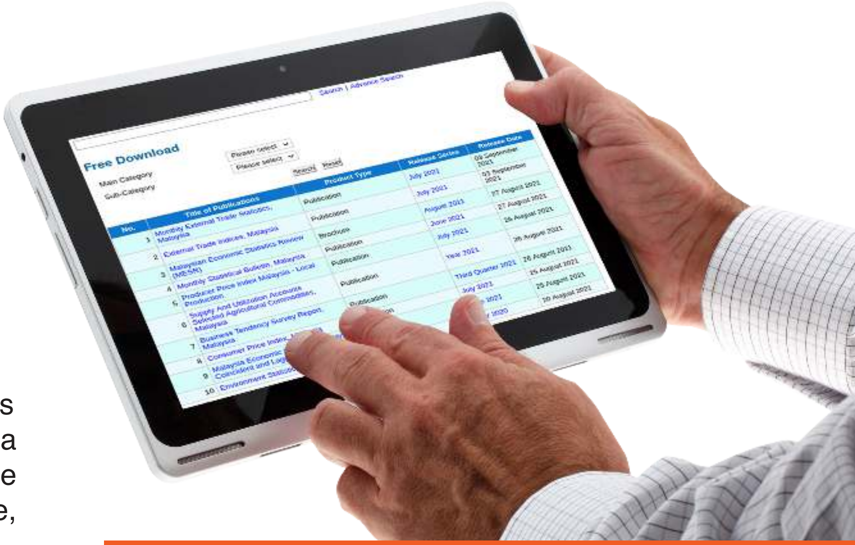
MAMPU Open Data Government Website
https://www.data.gov.my/

Department of Statistics Malaysia Open Data
https://www.dosm.gov.my/v1/index.php?r=column3/accordion&menu_id=aHhRYUpWS3B4VXlYaVBOeUF0WFpWUT09

MysIDC
Key datasets by sector
https://mysidc.statistics.gov.my/index.php?lang=en#

eStatistik
https://newss.statistics.gov.my

Over 3,400 additional datasets in machine readable and PDF format can also be found for download at https://newss.statistics.gov.my which requires a free online account registration process. A search feature for datasets that are freely downloadable is available via the "Free Download" section.



Caption: Datasets and data reports for eStatistik, can be searched under the Free Download section.

Demographics

Census data

Data	Source	Notes
Households	Census Data Open Data Portal	Poor granularity
Education	Pendidikan - Clusters - MAMPU	Good
Employment	Census Data Open Data Portal	Good
Birthplace & Residence	Census Data Open Data Portal	Good
Population Distribution	Census Data Open Data Portal	Good

Company Information

Data	Source	Notes
Beneficial Ownership	MY-Data SSM	Payment required. Bulk data download planned, but currently not available.
Company Registra	MY-Data SSM	Payment required. Bulk data download planned, but currently not available.

Crime

Data	Source	Notes
Crime Statistics	Parliamentary Documents Department of Statistics Malaysia https://www.data.gov.my/data/en_US/group/jenayah	Not granular. Limited years and some data are in PDF format.

Transportation

Data	Source	Notes
Bus Timetable	Pengangkutan - Clusters - MAMPU	Not comprehensive, and does not cover all major service providers. No routes.
Rail	Pengangkutan - Clusters - MAMPU	Not comprehensive, and does not cover all major service providers. No routes.

Elections and Legislative Data

Data	Source	Notes
Electoral Results	https://www.data.gov.my/data/ms_MY/organization/election-commission-of-malaysia-spr	Not granular and inconsistent. Only for recent elections.
Map Boundaries	https://github.com/TindakMalaysia	Not up to date.

Land

Data	Source	Notes
Land Tenure	Pemilikan Tanah - Clusters - MAMPU	Inconsistent data availability.
Existing Land Use	Pemilikan Tanah - Clusters - MAMPU World Bank https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=MY i-Plan Geo Portal https://iplan.townplan.gov.my/public/geoportal?view=zoning	Inconsistent data availability.

Political Integrity

Data	Source	Notes
Political Finance	N/A	Not available.
Asset Declarations	https://mydeclaration.sprm.gov.my/	Limited and aggregated monthly income only.
Lobbying Register	N/A	Not available.
Public Consultation Data	N/A	Not available.
RTI Performance	N/A	Not available.

Public Finance

Data	Source	Notes
Budget	Bajet - Clusters - MAMPU	Inconsistent and limited data availability.
Expenditure	Perbelanjaan Kerajaan - Clusters - MAMPU	Inconsistent and limited data availability.

Climate Action and Environment

Data	Source	Notes
Emission	MysDIC https://mysidc.statistics.gov.my/index.php?lang=en# Environment Cluster of Open Data Portal	National level granular data covering several years on MysDIC.
Biodiversity	MEWA Data	Only list of projects.
Vulnerability	Perhilitan Data CITES Permit Data Alam Sekitar - Clusters - MAMPU	Inconsistent and limited data availability.
Forest	MysDIC https://mysidc.statistics.gov.my/index.php?lang=en# Annual Reports	National level by state data covering several years on MysDIC on forest coverage. In PDF annual reports: https://www.forestry.gov.my/my/pusat-sumber/penerbitan/laporan-tahunan
Forest Fires	NASA Firms https://firms.modaps.eosdis.nasa.gov/active_fire/	

TIPS: UN COMTRADE Data

Many environmental issues will involve trade of goods, services and commodities. Issues such as plastics, logging or fisheries products will involve import and export of such goods directly or indirectly.

If data for complete product is not available, try find out what goods and services are used in it's production.

First look up the HS Code definition for the goods in question and then search for the detailed open data which can be found on UN Comtrade website https://comtrade.un.org/data

Example - Plastic Waste
HS Code - 3915

Health & COVID-19

Data	Source	Notes
Cases, Testing, Healthcare Capacity, Deaths,	https://github.com/MoH-Malaysia/covid19-public	Detailed up to date granular data to state level.
Real-time healthcare system capacity	https://www.moh.gov.my/index.php/pages/view/260 Health Cluster Open Data Portal	Not realtime, annual only.
Vaccination	https://github.com/CITF-Malaysia/citf-public	Detailed up to date granular data to state level.

International Trade

Data	Source	Notes
Import and Exports of Goods and Services	Comtrade Malaysian External Trade Statistics	Detailed granular data by HS Code over several years.

Case Study 1 - Kini News Lab COVID-19 Tracker

https://newslab.malaysiakini.com/covid-19/en

Journalist/Organisation

malaysiakini
news and views that matter

Malaysiakini (Aidila Razak (L), Lee Long Hui (R), Wong Kai Hui, Sean Ho, Thiaga Raj Servai, Hazman Hazwan, Syariman Badrulzaman)

“We managed to create something that was useful to the public at a time when there was so much unknown, and so little information provided by the authorities.” - Aidila Razak

“The most challenging and frustrating thing about this project was trying to figure out what data needs to be there, how to get the data and to agree as a team.”- Aidila Razak

Description

This data journalism project by Malaysiakini is a website which includes a dashboard of key statistics regarding the COVID-19 pandemic in Malaysia (at national, state, district and subdistrict level), verified locations affected by COVID-19, cluster information, patient and death information, resources on how to stay safe during the pandemic and rules and regulations of lockdowns and other related information. It is published in English, Bahasa Malaysia and Chinese, with some key parts of the website published in Bengali, Nepali and Burmese to cater to the more than one million migrant worker population who are not English or Bahasa Malaysia literate.

Challenges

- Data releases inconsistent, health departments decide how and when to release data, inconsistent across states
- Not published in machine readable format, but through websites and social media in the form of infographics and charts.
- The key source of critical data and information for COVID-19

Until detailed data was eventually released by the Ministry of Health on 20th July 2021, KiniLabs COVID-19 tracker was the only central source for cumulative key data related to COVID-19, but also other general information for the public such as movement restrictions and relevant hotlines to call for further information. The site is also the only source of public verified data on local outbreaks needed by others for contact tracing. Malaysian government only provided codenames for clusters, with Malaysiakini having to verify reports on the exact location to update data for the website.

At the time, the data released by the government was not in machine readable format, often in the form of infographics, inconsistent categories, inconsistent numbers reported by different state governments, as well as inconsistency on when data was released. The data, especially state and district level data often had to be collected and entered manually from multiple social media pages such as Facebook.

Daily cases would be updated in daily press briefings for a few weeks, only to suddenly stop for a few days and then resume again at a later date, but with some categories missing. vaccination data would also be released by another Ministry, the Ministry of Science and Technology that managed vaccinations and not by the Ministry of Health.

One of the biggest challenges this project faced was, in collecting the data, became the key source of verified data and information for COVID-19 for the country. The site became more of a public information health portal than a data journalism website. This led to the expectations by the public for it to provide clean, verified and up to date detailed data and information on COVID-19. This eventually led to some parts of the website, such as providing detailed local information by state districts, to be retired.[19] Some of the data and charts are still being maintained by the journalists.

Methodology and Impact

- Collected data across multiple sources into single Google spreadsheet
- Structured data presented in clear live charts, made it easy for the public to understand and track the COVID-19 situation in Malaysia in a single place.
- Data required for the website and reporting, helped journalists hold the government accountable for consistent, detailed and accurate release of information.
- Data collected, became a valuable source of data for policy makers and researchers

In order to develop the data journalism website with detailed information and visualizations, the KiniLabs team had to manually collect, verify and collaboratively enter data from multiple sources into a Google Docs spreadsheet.

With inconsistent data by the government provided in the form of charts and images, KiniLabs stepped in by making available up to date key indicators and information, in a consistent and clear manner for the public. Tracking and updating the data daily, also led to it being used by Malaysiakini journalists to hold the government accountable when data is not updated or inconsistent.

The data generated was also useful by others including state government and academics. The Selangor state government uses the data collated on locations affected by COVID-19 daily in their monitoring of local outbreaks and roll out prevention and containment strategies. This data was not shared, by the Federal Government[20], which meant it had to rely on data such as that available on request by KiniLabs. The data was also useful for academic researchers.

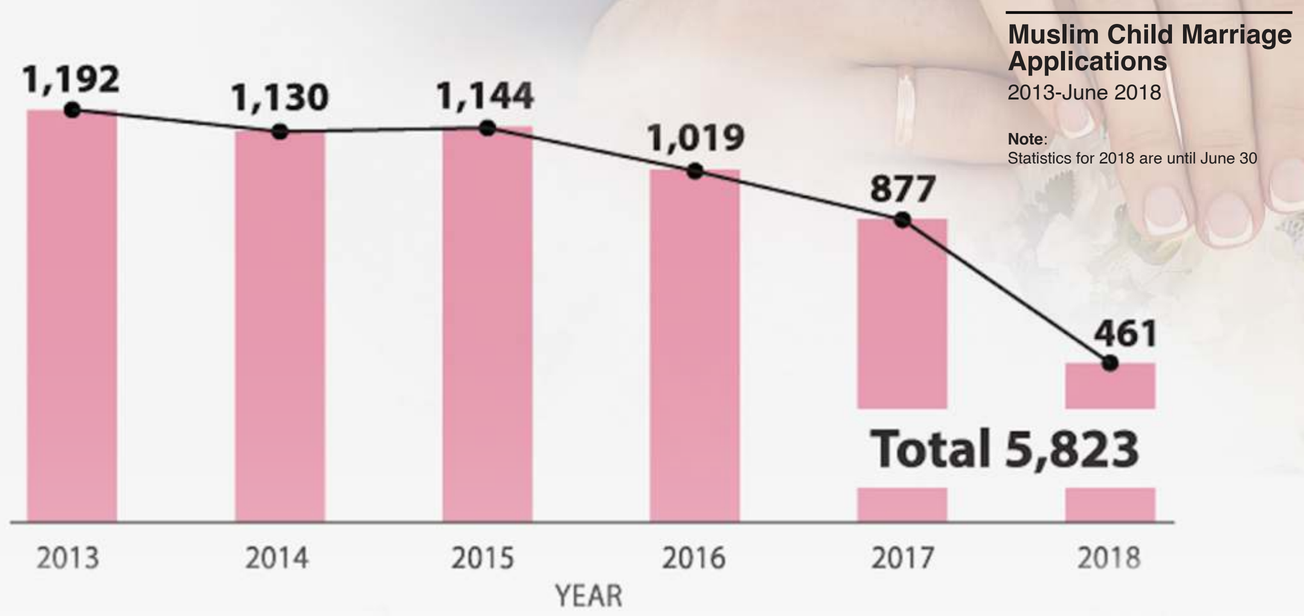
The project has been selected as one of the finalists for the 2021 Sigma Awards for Data Journalism[21].

The Malaysian government eventually started publishing detailed structured[22], open data on COVID-19 on July 20, 2021[23] more than a year after KiniLabs launched COVID-19 Tracker site in March 2020. With the government publishing granular open data and a detailed dashboard[24], the Malaysiakini COVID-19 Tracker site was retired in September 2021 having provided vital information for the public during a health crisis, and affecting change in provision of this information in data in government.

Sources of Data / Data Generated

- https://covid-19.moh.gov.my/
- https://www.facebook.com/kementeriankesihatanmalaysia/posts/10157672322256237
- Data generated by KiniLabs for this project is available on request to newslab@malaysiakini.com

Source: Department of Shariah Judiciary Malaysia (JKSM) I Graphics: malaymail



Muslim Child Marriage Applications
2013-June 2018

Note:
Statistics for 2018 are until June 30

Case Study 2 - Child Marriages in Malaysia

- Three things about: Child marriages in Malaysia
- Ministry: 543 child marriages, including applications, in Malaysia from Jan-Sept 2020

Journalist/Organisation

malaymail

Ida Lim,
Malay Mail

"A good way to start a data story is to Google to find out what data is already out there, and possible sources of data. But it is always best to go back to the primary source, and to carry out further checks and verification if needed. For example, a news report that quoted government statistics given in Parliament had some discrepancies, while a check of the Dewan Rakyat's Hansard (the primary source) showed a discrepancy in the total of Malaysia's non-Muslim child marriages (2,725) for 2010-2015. It was after I checked with the relevant deputy minister's office that the accurate total figure of 2,775 was provided and verified." - Ida Lim

"Accurate and meaningful official data may prove challenging to obtain, especially in terms of granularity, ease of access and consistency. But it may still be possible to find data that could be helpful to the public." - Ida Lim

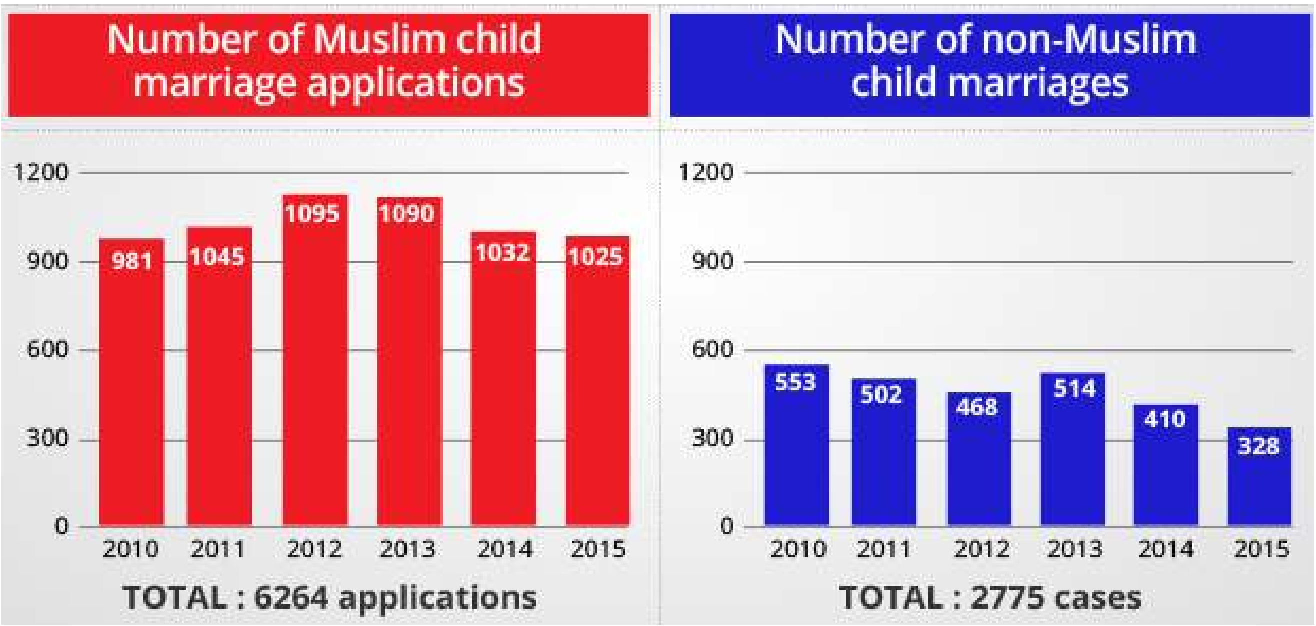
Description

News reports covering the issue of child marriages in Malaysia, using data for infographics and charts on legal definitions and statistics on child marriages.

Challenges

- Limited detailed data on child marriages
- Separate legal requirements and sources of data for marriage for Muslims and Non-Muslims

There are continous campaigns to demand an end to child marriage, which is still legal in Malaysia. Marriages in Malaysia come under dual legal systems: Shariah for Muslims and the National Registry Department for non-Muslims. Issues around race and religion are often considered as sensitive in Malaysia, leading to self-censorship on discussions and availability of related data.



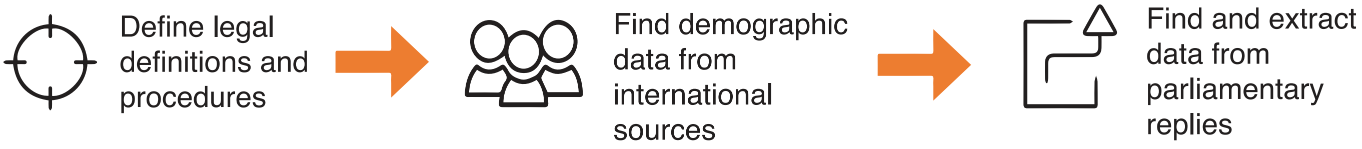
Graphic: Child Marriages in Malaysia (2010-2015)
Source: JKSM and NRD figures from Deputy Women Minister Datuk Azizah Mohd Dun's parliamentary reply, May 19, 2016 (Hansard)
Graphic: themalaymailonline.com

Shariah law is further complicated, with different laws applicable for each state in Malaysia, under jurisdiction of state government Islamic agencies.

The lack of granular data made it harder to show a full picture of child marriages in Malaysia. For example, Department of Statistics Malaysia's data for marital status was by a rigid set of age groups (e.g. 10-14, 15-19) instead of by the individual ages (16, 17, 18). This means the data could not be analysed or presented in a way to show child marriages among those aged 18 and below, or aged 16 and below. Inconsistent data is also a problem, as shown by the anomaly in year 2010 for the data on marital status for children in the age group 10-14 where all were recorded as Never Married for this year, when compared to other years.

Therefore, it was a challenge to not only find data, but also to consolidate data on the actual state of child marriages in Malaysia. Lack of data was cited by UNICEF as one of six enabling factors for child marriages in Malaysia.[25]

Methodology and Techniques


Define legal definitions and procedures

Find demographic data from international sources

Find and extract data from parliamentary replies

These stories start by first researching clear definitions and legal terms about the data being covered. Clarification on terms then determines where potential sources of Child Marriage data can be found, and where they might be inconsistent. It can then help define a single standard that could be used when consolidating data from different sources, or when it is simply not possible. When data is hard to find, especially for topics not usually covered, informative introductory reporting on the issue, can be just as important as the information gleaned from data found.

With limited open data available, multiple sources of data were used to provide context, the total number of child marriages in Malaysia. This includes census data, data provided by international organisations such as the United Nations Population Division and also parliamentary replies.

TIPS: Looking for data in Parliamentary Documents

With thousands of answers on Sinar Project's Parliamentary Documents website, try using additional keywords like **jumlah** and **statistik** to have higher chance of finding answer with data or tables

Sources of Data / Data Generated

- Parliamentary replies https://pardocs.sinarproject.org/documents/2019-march-april-parliamentary-session/oral-questions-soalan-lisan/2019-03-13-parliamentary-replies/par14p2m1-soalan-lisan-36.pdf/view
- 2010 Census data https://www.mycensus.gov.my/index.php/census-product/publication/census-2010
- World Marriage Data (United Nations Population Division)

Photo: From Bukit Awan to Gunung Tahan, by SK Chong

Case Study 3 - Evaluating Forest Management in Peninsular Malaysia

https://www.macaranga.org/data-story-peninsular-malaysia-forestry/

Journalist/Organisation

Macaranga

L-R: YH Law, SL Wong for Macaranga

"What's very challenging to get is an accurate and updated map of forest reserves. I haven't found one. Forestry Deparment doesn't give me any, citing "sulit" (secret) as a reason, and the hardcopies printed in reports cannot be accurately digitised because the outlines are too blurry." - Yao-Hua Law

"There are two sources of official data for this (changes in area of forest reserves) - State Gazettes and forestry reports.

Frustratingly, the numbers of forest reserve area changes between forestry reports and State Gazettes do not tally. Since such changes are official only after they are published in gazettes, one should use gazettes as the official and primary data source. But to read State Gazettes, you have to pay for digital subscription, and even then you only get those from 2001 onwards.

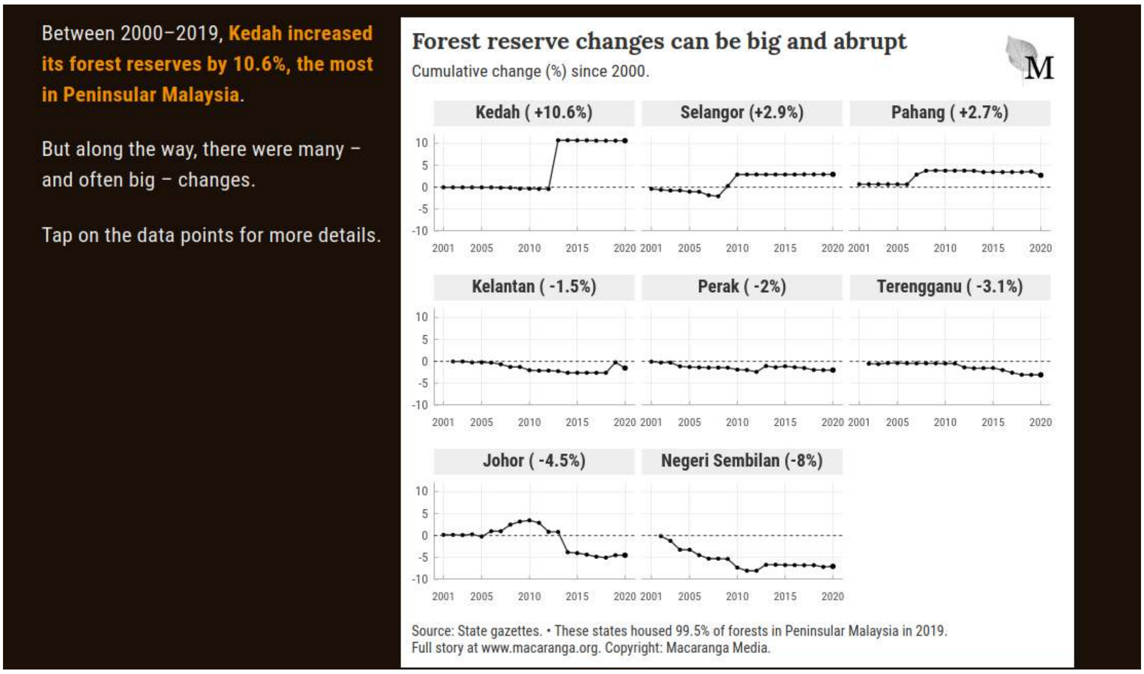
And State Gazettes can backdate changes in forest reserves - Kelantan's for example has published gazettes in 2010 announcing forest reserve changes effective 2003!

To be as accurate as possible, one needs to pay for the gazettes, then check every entry related to forestry in detail."

- Yao-Hua Law

Description

Interactive survey and data visualizations, to try explain in detail the state of Forest Management in Malaysia. The story covered various aspects of forest management, from total area by designated receive and primary forest cover, to economic data such as revenue and timber harvest. Data and documents generated for this project was then published as open data for use by other journalists and researchers.



Between 2000–2019, **Kedah increased its forest reserves by 10.6%, the most in Peninsular Malaysia.**

But along the way, there were many – and often big – changes.

Tap on the data points for more details.

Forest reserve changes can be big and abrupt

Cumulative change (%) since 2000.

Source: State gazettes. • These states housed 99.5% of forests in Peninsular Malaysia in 2019.
Full story at www.macaranga.org. Copyright: Macaranga Media.

Between 2000–2019, Kedah increased its forest reserves by 10.6%, the most in Peninsular Malaysia.

But along the way, there were many – and often big – changes.

Challenges

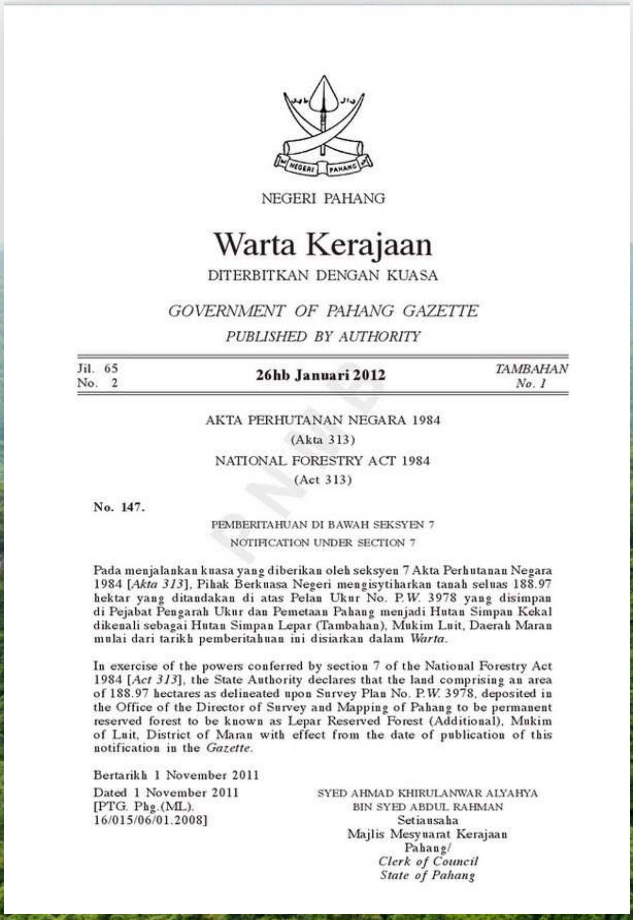
- Lack of open data of forest reserve status and type
- Lack of open data of maps of forest reserves and type

There is limited data available on the status and total area of forest reserves in Malaysia, only aggregate totals by country and state. Degazetted forest reserves may be replaced by being designated elsewhere.

Digital maps of the actual areas covered by the forest reserves were also not available. Finally additional verification was needed on whether designated forest reserve areas are still there or have been logged through the use of satellite imagery.

Methodology and Techniques

- Explore different types of data for forest governance
- Use satellite data to verify land usage and forest coverage
- Extract data on forest reserve/land usage from State Gazettes
- Find data from civil society



NEGERI PAHANG

Warta Kerajaan

DITERBITKAN DENGAN KUASA

GOVERNMENT OF PAHANG GAZETTE

PUBLISHED BY AUTHORITY

Jil. 65
No. 2

26hb Januari 2012

TAMBAHAN
No. 1

AKTA PERHUTANAN NEGARA 1984
(Akta 313)
NATIONAL FORESTRY ACT 1984
(Act 313)

No. 147.

PEMBERITAHUAN DI BAWAH SEKSYEN 7
NOTIFICATION UNDER SECTION 7

Pada menjalankan kuasa yang diberikan oleh seksyen 7 Akta Perhutanan Negara 1984 [*Akta 313*], Pihak Berkuasa Negeri mengisytiharkan tanah seluas 188.97 hektar yang ditandakan di atas Pelan Ukur No. P.*W.* 3978 yang disimpan di Pejabat Pengarah Ukur dan Pemetaan Pahang menjadi Hutan Simpan Kekal dikenali sebagai Hutan Simpan Lepar (Tambahan), Mukim Luit, Daerah Maran mulai dari tarikh pemberitahuan ini disiarkan dalam *Warta*.

In exercise of the powers conferred by section 7 of the National Forestry Act 1984 [*Act 313*], the State Authority declares that the land comprising an area of 188.97 hectares as delineated upon Survey Plan No. P.*W.* 3978, deposited in the Office of the Director of Survey and Mapping of Pahang to be permanent reserved forest to be known as Lepar Reserved Forest (Additional), Mukim of Luit, District of Maran with effect from the date of publication of this notification in the *Gazette*.

Bertarikh 1 November 2011
Dated 1 November 2011
[PTG. Phg.(ML).
16/015/06/01.2008]

SYED AHMAD KHIRULANWAR ALYAHYA
BIN SYED ABDUL RAHMAN
Setiausaha
Majlis Mesyuarat Kerajaan
Pahang/
Clerk of Council
State of Pahang

Macaranga started with first clearly defining several criteria to measure forest management, and then proceeded to try the find data each criteria:

- Area of permanent forest reserve
- Change in area of forest reserves
- Forestry Revenue
- Timber harvest
- Primary forest cover

Data for overall areas of permanent forest reserves and revenue, could be found and extracted from Forestry Department's annual reports. To visualise forest coverage since official map data was not available, Macaranga sourced map data from civil society effort, Hutan Watch that manually created shapefiles from different sources. Meanwhile, primary forest cover map and data were sourced from Global Forest Watch.

In order to calculate actual forest reserve changes, it was discovered that additions and subtractions to designated forest reserves are published in State Gazettes. This information is buried in thousands of public domain PDF documents, behind a paywall. 20 years of forest reserve data was extracted and tabulated to be able to generate the data to track the changes for each state.

Following data journalism best practices, Macaranga published the source documents and data extracted from PDFs of annual reports and gazettes as open data. Not only does it provide readers a way to verify the data-driven story and visualizations, but new and hard to obtain forestry data is now available to other journalists and researchers to generate more data-driven stories.

Sources of Data / Data Generated

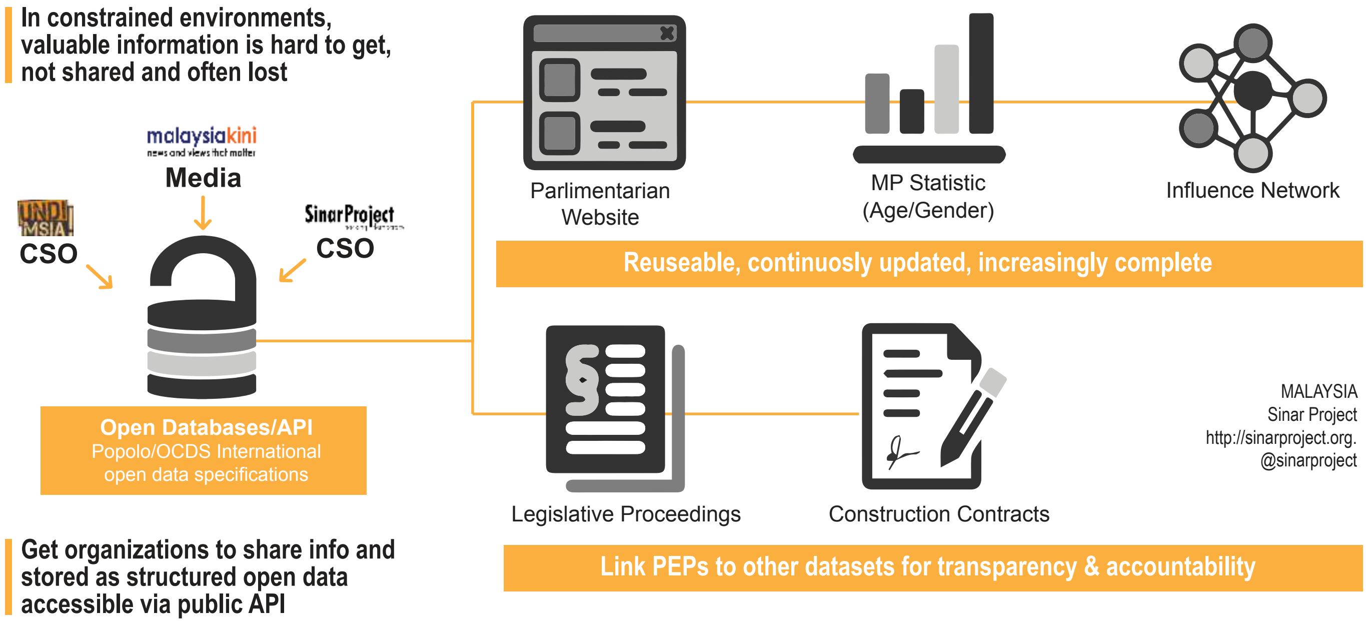
- Forestry Department Peninsular Malaysia - Annual reports
- Hutan Watch
- State Gazettes
- Compendium of Environment Statistics, Department of Statistics Malaysia
- Global Forest Watch
- Data made available from this project https://www.macaranga.org/forestry-data-peninsular-malaysia

Case Study 4 - Politically Exposed Persons, Contracts

Journalist/Organisation

L-R: Khairil Yusof, Ng Swee Meng, Sinar Project

"In constrained environments, data availability is limited and civil society and journalists have limited resources. Open data standards can be used to build a foundation to collaboration in making hard to obtain data available for use by data journalists." - Khairil Yusof, Sinar Project



In constrained environments, valuable information is hard to get, not shared and often lost

Open Databases/API
Popolo/OCDS International open data specifications

Get organizations to share info and stored as structured open data accessible via public API

Reuseable, continuosly updated, increasingly complete

Link PEPs to other datasets for transparency & accountability

Description

Use of open data standards to collect data from public information and media reports on politically exposed persons, positions held, relationships and interests to uncover possible corruption and conflicts of interest.

Challenges

- □ No data on political integrity such as asset declarations or political financing
- □ No data on politically exposed persons and relationships
- □ Limited data on procurement and conflict of interests
- □ Difficulty finding and combining fragmented data and information from multiple sources
- □ Data sources are often not available online or taken down

There are daily if not constant media reports on corruption, conflicts of interest and poor governance in Malaysia. While there have been books and research on the extent and involvement of politicians, this has not been captured as data. Concurrent efforts at capturing this network as data was done in this area mainly through: Sinar Project's work with electoral data, construction contracts and media reports[26] with data on politicians and positions in government-linked companies by Terence Gomez, Thirshalar Padmanabhan, Norfaryanti Kamaruddin, Sunil Bhalla as part of the research for their publication, 'Minister of Finance Incorporated: Ownership and Control of Corporate Malaysia'.[27]

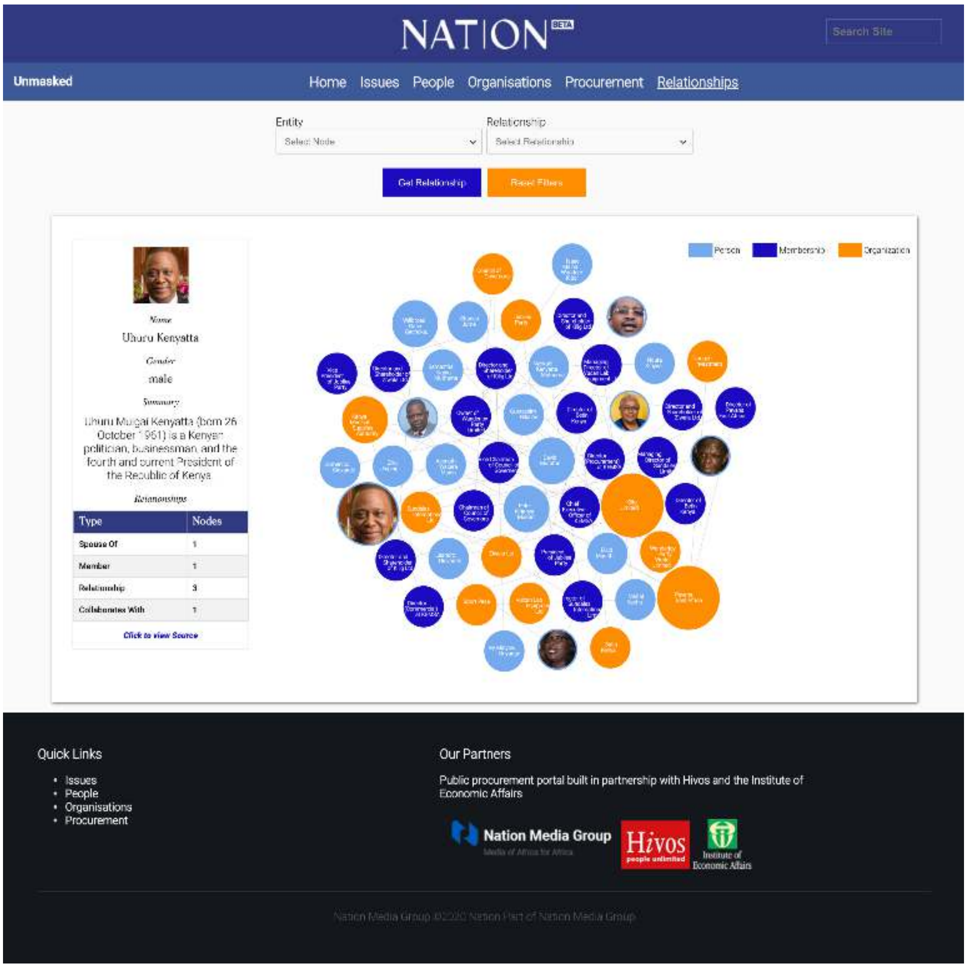
It was found that there was a lot of effort in gathering information by multiple parties, but they were not captured as data in a consistent manner or published. There was a wealth of information, but it was fragmented and often lost and out of date. Additionally, key data points such as exact dates on positions held by politically exposed persons, and verifiable sources were also missing, making it difficult or impossible to use the data to publish a story.

Methodology and Techniques

- Use of open data standards Popolo-spec, Open contracting, Beneficial Ownership, CoST to structure data to be collected and stored
- Developed open source content management system, to enabled tracking and storage of multiple sources of data as well publication of data
- Work with journalists to ensure editorial integrity of collected data
- Using joined up and linked data to uncover conflicts of interest

In order to find a well-designed and complete data structure to combine fragments of information, open data standards were used as base templates for spreadsheets and databases. These standards have had significant resources and expert input in their development. Repurposing them for data journalism meant that data collected would be well structured, and cover numerous use cases and input from stakeholders internationally, along with technical support of the organisations developing these standards.

The project collaborated with journalists at Malaysiakini, to understand editorial standards, such that the data was also publishable by journalists. This included the ability to store links to multiple sources for each piece of data captured, importance of capturing official contact details for right of reply and clear definitions of relationships. Before relationship data is added and published to link two persons of interest as business partners, it had to be defined clearly, and then sources had to be found to support that editorial definition.



NATION BETA

Search Site

Unmasked

Home Issues People Organisations Procurement Relationships

Entity: Select Node

Relationship: Select Relationship

Get Relationship

Reset Filters

Person Membership Organization

Name

Uhuru Kenyatta

Gender

male

Summary

Uhuru Muigai Kenyatta (born 26 October 1961) is a Kenyan politician, businessman, and the fourth and current President of the Republic of Kenya

Relationships

Type	Nodes
Spouse Of	1
Member	1
Relationship	3
Collaborates With	1

Click to view Source

Quick Links

- Issues
- People
- Organisations
- Procurement

Our Partners

Public procurement portal built in partnership with Hivos and the Institute of Economic Affairs

Nation Media Group ©2020 Nation Part of Nation Media Group

Caption: Application of Politikus approach for Unmasked Kenya, Nation Nation Media

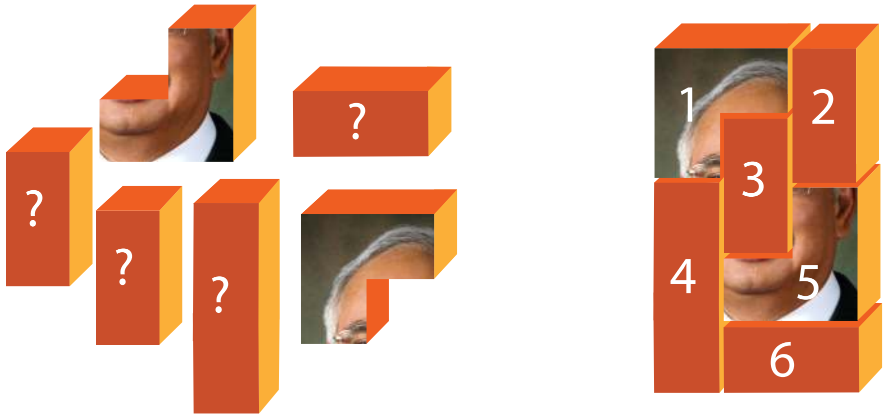
It was found that repurposing a content management system to publish data was more appropriate for data journalism. It allowed the addition of private notes, multiple sources, as well as a publication workflow such that some data accessible by journalists working on the story, were embargoed until the story was published. Originally inspired from Reuters project “Connected China”[28], for media organisations this approach of capturing fragmented information as data, can also increase the value of traditional reporting, by providing additional data for innovative data visualizations. It can provide additional insights for each new story, but also increase the longevity of day-to-day reporting by linking back to them from each new data-driven story. This work was also short-listed for Sigma 2021 Data Journalism Awards[29].

Sources of Data / Data Generated

- Open Data on Malaysian PEPs, Relationships, Organizations, Beneficial Ownership and Procurement
- Government annual reports, Parliamentary hansards, Securities exchange on Government Documents
- Politikus Source Code
- Unmasked Nation Africa

Best Practices in Data Journalism in Constrained Environments

Organize Data Structure Using Open Data Standards and Hypothesis



Structured data standard or template provides a guide for sourcing and generating data

Use data standards for structure

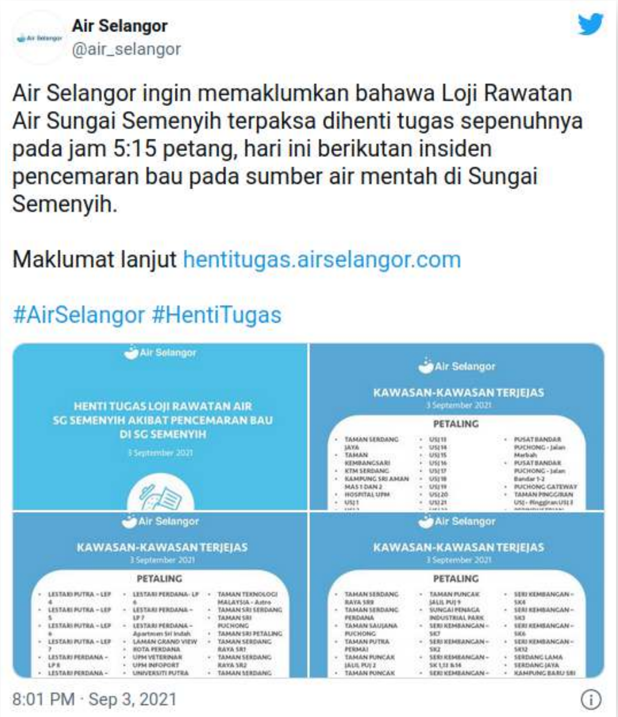
Use online spreadsheet for collaboration

Use multiple sources of data to generate data

From case studies and data journalism training workshops, in Malaysia, journalists have had to find and generate data from multiple sources for stories. This blurs the line between data and investigative journalism, and methods from both are needed in order to source data needed for their stories.

Example: Water Disruption

Converting Notices into Structured Data



Air Selangor
@air_selangor

Air Selangor ingin memaklumkan bahawa Loji Rawatan Air Sungai Semenyih terpaksa dihenti tugas sepenuhnya pada jam 5:15 petang, hari ini berikutan insiden pencemaran bau pada sumber air mentah di Sungai Semenyih.

Maklumat lanjut hentitugas.airselangor.com

#AirSelangor #HentiTugas

Air Selangor

HENTI TUGAS LOJI RAWATAN AIR SG SEMENYIH AKIBAT PENCEMARAN BAU DI SG SEMENYIH

3 September 2021

Air Selangor

KAWASAN-KAWASAN TERJEJAS

3 September 2021

PETALING

- TAMAN SERDANG JAYA
- TAMAN KEMBANGSARI
- KTM SERDANG
- KAMPUNG SRI AMAN MAS 1 DAN 2
- HOSPITAL UPM
- USJ 1
- USJ 11
- USJ 14
- USJ 15
- USJ 16
- USJ 17
- USJ 18
- USJ 19
- USJ 20
- USJ 21
- PUSAT BANDAR PUCHONG - Jalan Merbah
- PUSAT BANDAR PUCHONG - Jalan Bandar 1-2
- PUCHONG GATEWAY
- TAMAN PINGGIRAN USJ - Pinggiran USJ 3

Air Selangor

KAWASAN-KAWASAN TERJEJAS

3 September 2021

PETALING

- LESTARI PUTRA – LEP 4
- LESTARI PUTRA – LEP 5
- LESTARI PUTRA – LEP 6
- LESTARI PUTRA – LEP 7
- LESTARI PERDANA – LP 8
- LESTARI PERDANA –
- LESTARI PERDANA- LP 6
- LESTARI PERDANA – LP 7
- LESTARI PERDANA – Apartmen Sri Indah
- LAMAN GRAND VIEW
- KOTA PERDANA
- UPM VETERINAR
- UPM INFOPORT
- UNIVERSITI PUTRA
- TAMAN TEKNOLOGI MALAYSIA - Astro
- TAMAN SRI SERDANG
- TAMAN SRI PUCHONG
- TAMAN SRI PETALING
- TAMAN SERDANG RAYA SR1
- TAMAN SERDANG RAYA SR2
- TAMAN SERDANG

Air Selangor

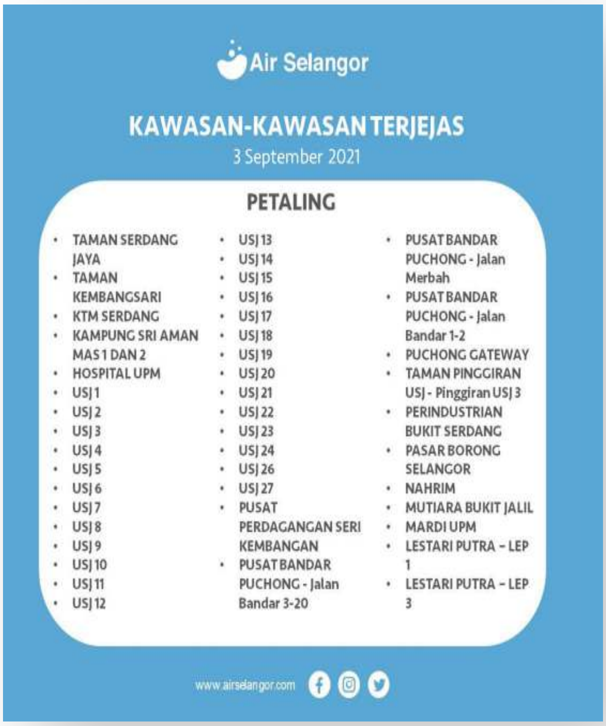
KAWASAN-KAWASAN TERJEJAS

3 September 2021

PETALING

- TAMAN SERDANG RAYA SR3
- TAMAN SERDANG PERDANA
- TAMAN SAUJANA PUCHONG
- TAMAN PUTRA PERMAI
- TAMAN PUNCAK JALIL PUJ 2
- TAMAN PUNCAK
- TAMAN PUNCAK JALIL PUJ 9
- SUNGAI PENAGA INDUSTRIAL PARK
- SERI KEMBANGAN - SK7
- SERI KEMBANGAN - SK2
- SERI KEMBANGAN - SK 1,13 &14
- SERI KEMBANGAN -
- SERI KEMBANGAN - SK4
- SERI KEMBANGAN - SK3
- SERI KEMBANGAN - SK6
- SERI KEMBANGAN - SK12
- SERDANG LAMA
- SERDANG JAYA
- KAMPUNG BARU SRI

8:01 PM · Sep 3, 2021



Air Selangor

KAWASAN-KAWASAN TERJEJAS

3 September 2021

PETALING

- TAMAN SERDANG JAYA
- TAMAN KEMBANGSARI
- KTM SERDANG
- KAMPUNG SRI AMAN MAS 1 DAN 2
- HOSPITAL UPM
- USJ 1
- USJ 2
- USJ 3
- USJ 4
- USJ 5
- USJ 6
- USJ 7
- USJ 8
- USJ 9
- USJ 10
- USJ 11
- USJ 12
- USJ 13
- USJ 14
- USJ 15
- USJ 16
- USJ 17
- USJ 18
- USJ 19
- USJ 20
- USJ 21
- USJ 22
- USJ 23
- USJ 24
- USJ 26
- USJ 27
- PUSAT PERDAGANGAN SERI KEMBANGAN
- PUSAT BANDAR PUCHONG - Jalan Bandar 3-20
- PUSAT BANDAR PUCHONG - Jalan Merbah
- PUSAT BANDAR PUCHONG - Jalan Bandar 1-2
- PUCHONG GATEWAY
- TAMAN PINGGIRAN USJ - Pinggiran USJ 3
- PERINDUSTRIAN BUKIT SERDANG
- PASAR BORONG SELANGOR
- NAHRIM
- MUTIARA BUKIT JALIL
- MARDI UPM
- LESTARI PUTRA – LEP 1
- LESTARI PUTRA – LEP 3

www.airselangor.com

Caption: Unstructured data from Air Selangor social media notices

Water disruption is a common issue[30] for residents of Klang Valley and granular data is not available. From experience of Kinilab's COVID-19 tracker case study, journalists can apply a similar approach in structuring data-driven stories by collecting and generating data from official announcements into a standard data set. The process of doing so will also help structure common causes, and durations for water cuts.

This will enable journalists to provide much better data- backed insights such as the main causes of outages, average time and days consumers are affected by outage and which areas were affected– beyond simple day-to-day reporting of water outages.

Take note as per example above, that the data needs to be raw and as granular as possible, so one incident notice affecting multiple areas or times, will require a new row entered for each area and time.

Start Datetime	End Datetime	District	Area	Source	Cause	Source Link
2021-09-03 17:15		Petaling	Taman Serdang Jaya	Air Selangor	Odour for Semenyih River	https://twitter.com/air_selangor/
2021-09-03 17:15		Petaling	Taman Kembangsari	Air Selangor	Odour for Semenyih River	https://twitter.com/air_selangor/
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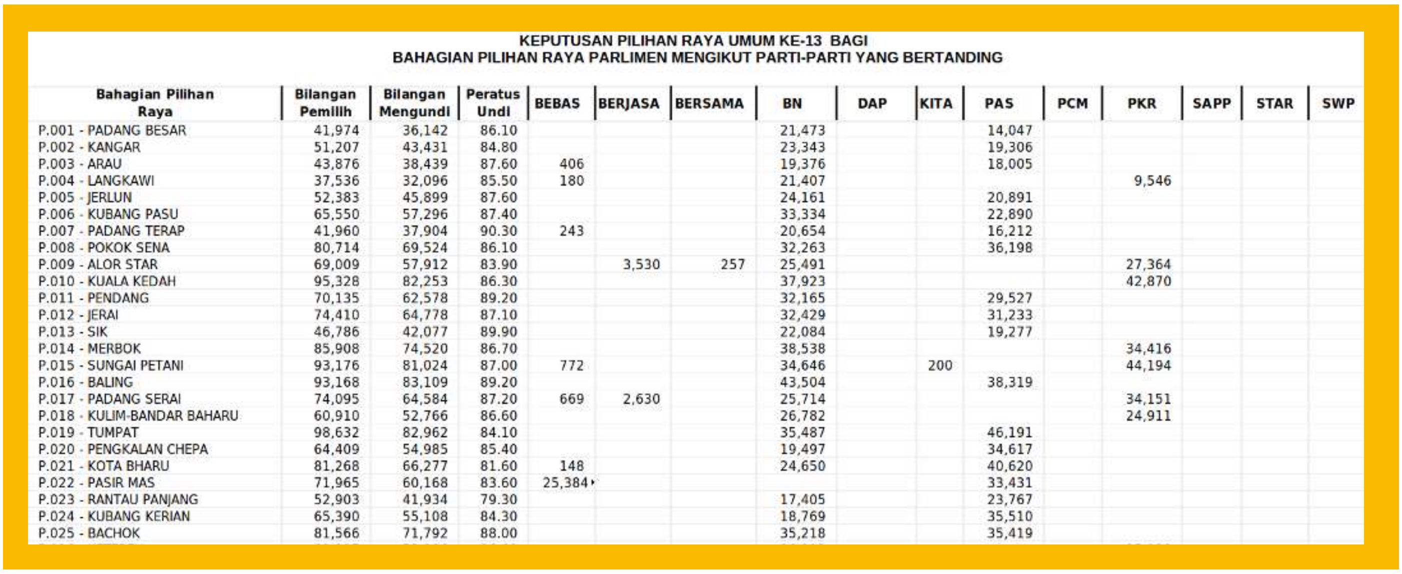
■ Caption: Information from Air Selangor notices and other sources converted into structured data

TIPS: Plan for resources and time to compile data

It takes a lot of effort to manually compile enough granular data from multiple sources, many of which may be in the form of images. Plan ahead to ensure enough resources and adequate time for data compilation before the expected publishing date of the story.

Open Data Standards - Electoral Data

Using Data Standards To Improve Data and for Collaboration



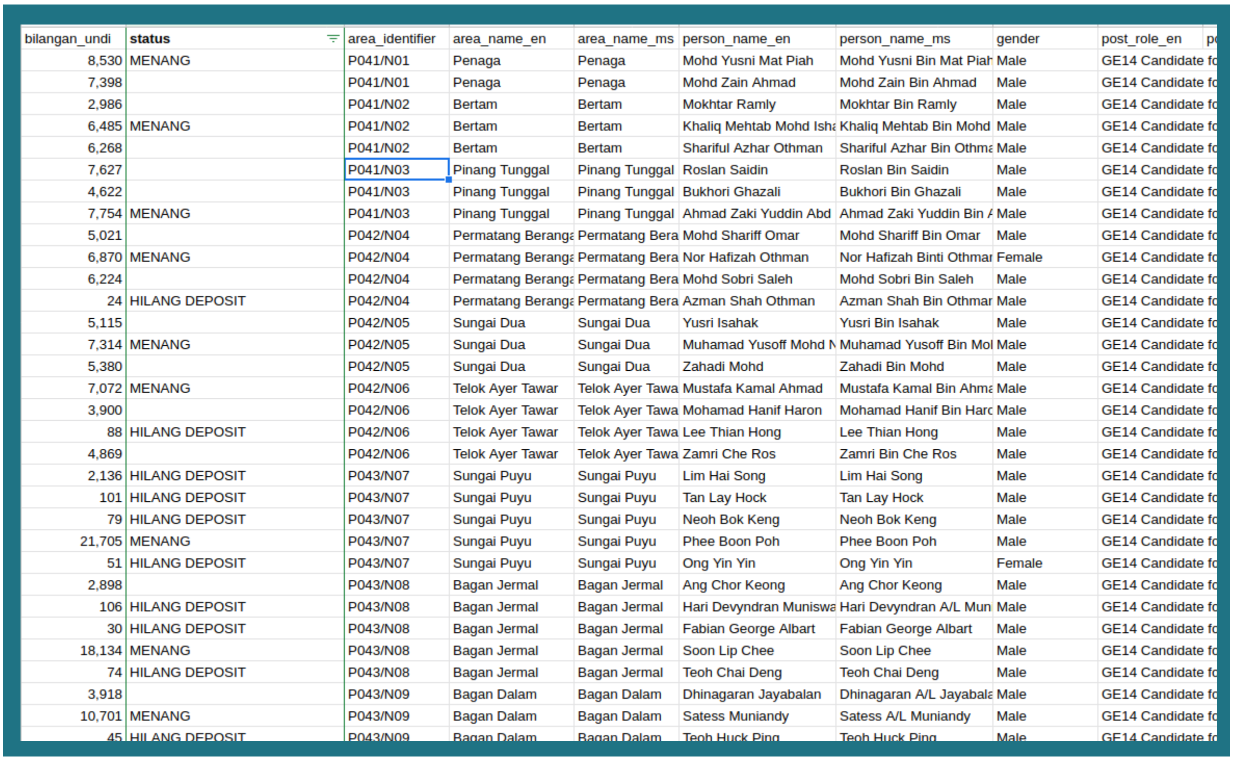
KEPUTUSAN PILIHAN RAYA UMUM KE-13 BAGI
BAHAGIAN PILIHAN RAYA PARLIMEN MENGIKUT PARTI-PARTI YANG BERTANDING

Bahagian Pilihan Raya	Bilangan Pemilih	Bilangan Mengundi	Peratus Undi	BEBAS	BERJASA	BERSAMA	BN	DAP	KITA	PAS	PCM	PKR	SAPP	STAR	SWP
P.001 - PADANG BESAR	41,974	36,142	86.10				21,473			14,047					
P.002 - KANGAR	51,207	43,431	84.80				23,343			19,306					
P.003 - ARAU	43,876	38,439	87.60	406			19,376			18,005					
P.004 - LANGKAWI	37,536	32,096	85.50	180			21,407					9,546			
P.005 - JERLUN	52,383	45,899	87.60				24,161			20,891					
P.006 - KUBANG PASU	65,550	57,296	87.40				33,334			22,890					
P.007 - PADANG TERAP	41,960	37,904	90.30	243			20,654			16,212					
P.008 - POKOK SENA	80,714	69,524	86.10				32,263			36,198					
P.009 - ALOR STAR	69,009	57,912	83.90		3,530	257	25,491					27,364			
P.010 - KUALA KEDAH	95,328	82,253	86.30				37,923					42,870			
P.011 - PENDANG	70,135	62,578	89.20				32,165			29,527					
P.012 - JERAI	74,410	64,778	87.10				32,429			31,233					
P.013 - SIK	46,786	42,077	89.90				22,084			19,277					
P.014 - MERBOK	85,908	74,520	86.70				38,538					34,416			
P.015 - SUNGAI PETANI	93,176	81,024	87.00	772			34,646		200			44,194			
P.016 - BALING	93,168	83,109	89.20				43,504			38,319					
P.017 - PADANG SERAI	74,095	64,584	87.20	669	2,630		25,714					34,151			
P.018 - KULIM-BANDAR BAHARU	60,910	52,766	86.60				26,782					24,911			
P.019 - TUMPAT	98,632	82,962	84.10				35,487			46,191					
P.020 - PENGKALAN CHEPA	64,409	54,985	85.40				19,497			34,617					
P.021 - KOTA BHARU	81,268	66,277	81.60	148			24,650			40,620					
P.022 - PASIR MAS	71,965	60,168	83.60	25,384						33,431					
P.023 - RANTAU PANJANG	52,903	41,934	79.30				17,405			23,767					
P.024 - KUBANG KERIAN	65,390	55,108	84.30				18,769			35,510					
P.025 - BACHOK	81,566	71,792	88.00				35,218			35,419					

Caption: Official 14th General Elections Results

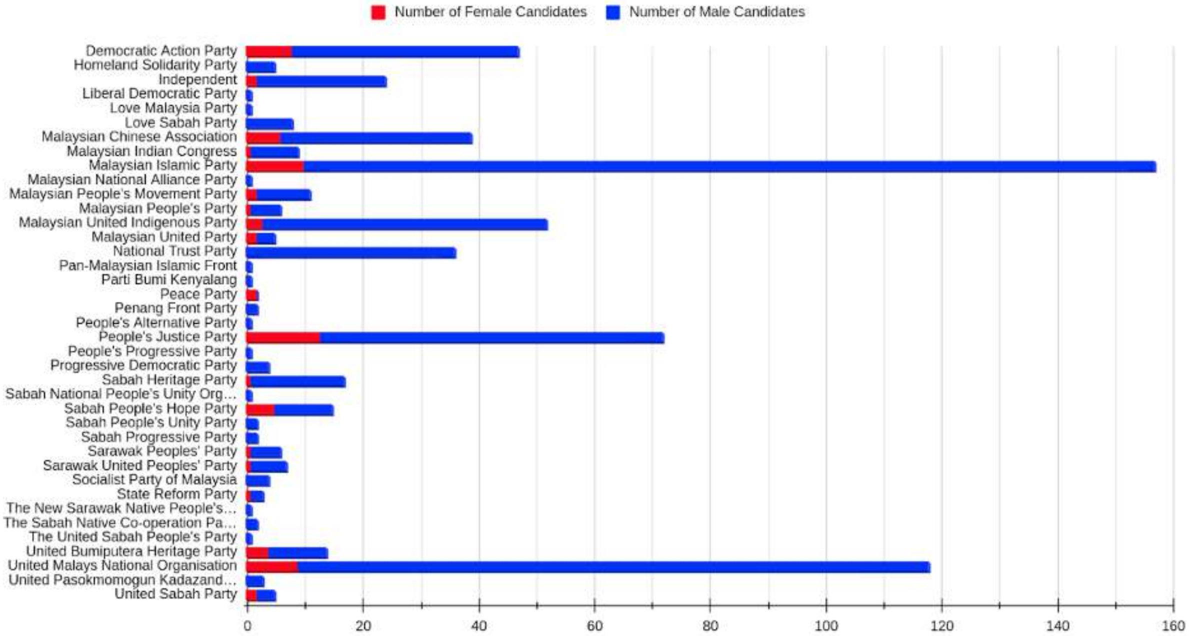
During elections, official results data often include the bare minimum in terms of medata for an election, often just including the area, the candidate name. The Malaysian system of elections, published data will include only the name of the coalition ticket and not the actual political parties the candidates belong to.[31]

For election stories, journalists need to provide additional insights on reporting on topics such as gender equality, youth or other diversity indicators beyond just results provided.



bilangan_undi	status	area_identifier	area_name_en	area_name_ms	person_name_en	person_name_ms	gender	post_role_en	pc
8,530	MENANG	P041/N01	Penaga	Penaga	Mohd Yusni Mat Piah	Mohd Yusni Bin Mat Piah	Male	GE14 Candidate fc	
7,398		P041/N01	Penaga	Penaga	Mohd Zain Ahmad	Mohd Zain Bin Ahmad	Male	GE14 Candidate fc	
2,986		P041/N02	Bertam	Bertam	Mokhtar Ramly	Mokhtar Bin Ramly	Male	GE14 Candidate fc	
6,485	MENANG	P041/N02	Bertam	Bertam	Khaliq Mehtab Mohd Isha	Khaliq Mehtab Bin Mohd	Male	GE14 Candidate fc	
6,268		P041/N02	Bertam	Bertam	Shariful Azhar Othman	Shariful Azhar Bin Othma	Male	GE14 Candidate fc	
7,627		P041/N03	Pinang Tunggal	Pinang Tunggal	Roslan Saidin	Roslan Bin Saidin	Male	GE14 Candidate fc	
4,622		P041/N03	Pinang Tunggal	Pinang Tunggal	Bukhori Ghazali	Bukhori Bin Ghazali	Male	GE14 Candidate fc	
7,754	MENANG	P041/N03	Pinang Tunggal	Pinang Tunggal	Ahmad Zaki Yuddin Abd	Ahmad Zaki Yuddin Bin A	Male	GE14 Candidate fc	
5,021		P042/N04	Permatang Beranga	Permatang Bera	Mohd Shariff Omar	Mohd Shariff Bin Omar	Male	GE14 Candidate fc	
6,870	MENANG	P042/N04	Permatang Beranga	Permatang Bera	Nor Hafizah Othman	Nor Hafizah Binti Othmar	Female	GE14 Candidate fc	
6,224		P042/N04	Permatang Beranga	Permatang Bera	Mohd Sobri Saleh	Mohd Sobri Bin Saleh	Male	GE14 Candidate fc	
24	HILANG DEPOSIT	P042/N04	Permatang Beranga	Permatang Bera	Azman Shah Othman	Azman Shah Bin Othmar	Male	GE14 Candidate fc	
5,115		P042/N05	Sungai Dua	Sungai Dua	Yusri Isahak	Yusri Bin Isahak	Male	GE14 Candidate fc	
7,314	MENANG	P042/N05	Sungai Dua	Sungai Dua	Muhamad Yusoff Mohd N	Muhamad Yusoff Bin Mol	Male	GE14 Candidate fc	
5,380		P042/N05	Sungai Dua	Sungai Dua	Zahadi Mohd	Zahadi Bin Mohd	Male	GE14 Candidate fc	
7,072	MENANG	P042/N06	Telok Ayer Tawar	Telok Ayer Tawa	Mustafa Kamal Ahmad	Mustafa Kamal Bin Ahma	Male	GE14 Candidate fc	
3,900		P042/N06	Telok Ayer Tawar	Telok Ayer Tawa	Mohamad Hanif Haron	Mohamad Hanif Bin Harc	Male	GE14 Candidate fc	
88	HILANG DEPOSIT	P042/N06	Telok Ayer Tawar	Telok Ayer Tawa	Lee Thian Hong	Lee Thian Hong	Male	GE14 Candidate fc	
4,869		P042/N06	Telok Ayer Tawar	Telok Ayer Tawa	Zamri Che Ros	Zamri Bin Che Ros	Male	GE14 Candidate fc	
2,136	HILANG DEPOSIT	P043/N07	Sungai Puyu	Sungai Puyu	Lim Hai Song	Lim Hai Song	Male	GE14 Candidate fc	
101	HILANG DEPOSIT	P043/N07	Sungai Puyu	Sungai Puyu	Tan Lay Hock	Tan Lay Hock	Male	GE14 Candidate fc	
79	HILANG DEPOSIT	P043/N07	Sungai Puyu	Sungai Puyu	Neoh Bok Keng	Neoh Bok Keng	Male	GE14 Candidate fc	
21,705	MENANG	P043/N07	Sungai Puyu	Sungai Puyu	Phee Boon Poh	Phee Boon Poh	Male	GE14 Candidate fc	
51	HILANG DEPOSIT	P043/N07	Sungai Puyu	Sungai Puyu	Ong Yin Yin	Ong Yin Yin	Female	GE14 Candidate fc	
2,898		P043/N08	Bagan Jermal	Bagan Jermal	Ang Chor Keong	Ang Chor Keong	Male	GE14 Candidate fc	
106	HILANG DEPOSIT	P043/N08	Bagan Jermal	Bagan Jermal	Hari Devyndran Muniswa	Hari Devyndran A/L Mun	Male	GE14 Candidate fc	
30	HILANG DEPOSIT	P043/N08	Bagan Jermal	Bagan Jermal	Fabian George Albart	Fabian George Albart	Male	GE14 Candidate fc	
18,134	MENANG	P043/N08	Bagan Jermal	Bagan Jermal	Soon Lip Chee	Soon Lip Chee	Male	GE14 Candidate fc	
74	HILANG DEPOSIT	P043/N08	Bagan Jermal	Bagan Jermal	Teoh Chai Deng	Teoh Chai Deng	Male	GE14 Candidate fc	
3,918		P043/N09	Bagan Dalam	Bagan Dalam	Dhinagaran Jayabalan	Dhinagaran A/L Jayabala	Male	GE14 Candidate fc	
10,701	MENANG	P043/N09	Bagan Dalam	Bagan Dalam	Satess Muniandy	Satess A/L Muniandy	Male	GE14 Candidate fc	
45	HILANG DEPOSIT	P043/N09	Bagan Dalam	Bagan Dalam	Teoh Huck Ping	Teoh Huck Ping	Male	GE14 Candidate fc	

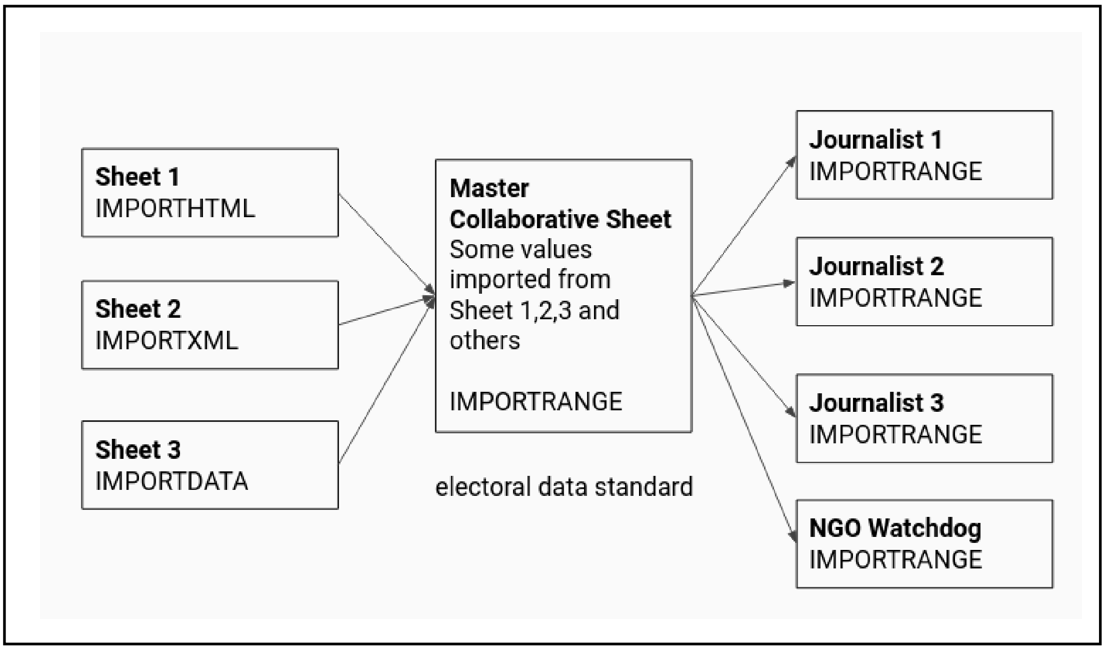
Caption: 14th General Elections Parliamentary Results Data [extended with Popolo-spec structure/fields](#)



Caption: Gender breakdown for 14th General Elections Parliamentary Results with extended Popolo-spec data

When data is missing, data standards help us figure out basic columns we should have that we can gather from different sources. Popolo-spec[32] is a good standard for basic fields to capture basic information on people and political parties. When the task of sourcing data is heavy for individual or small media teams, a standard can also help for collaborations between journalists as well as civil society.[33]

Joining data from online spreadsheets also enables collaboration both for sourcing additional data, but also in reusing such data. In fast-changing situations such as elections, where data can sometimes still be in the process of being verified, journalists can import and extend data for their own stories, from the source collaborative spreadsheet and then take snapshots as needed for a story.

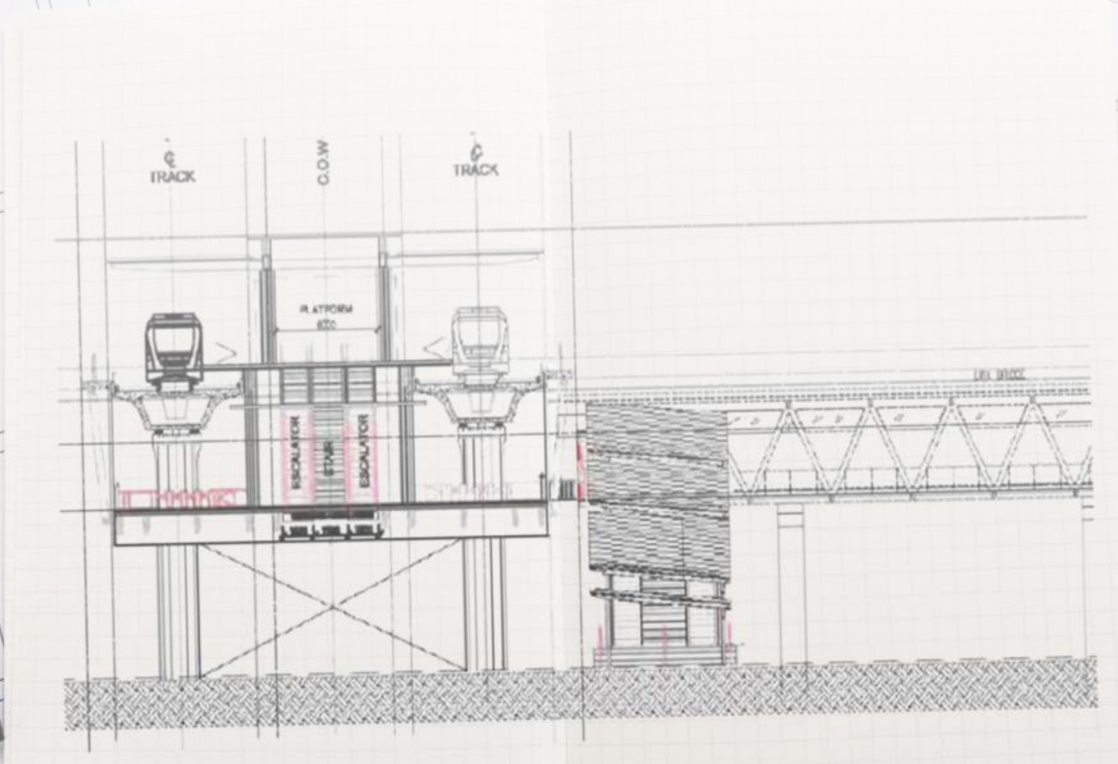


Caption: Example using online Google Sheet's import functions for collaboration in combining and extending multiple sheets.

Open Data Standards - Infrastructure and Procurement

Using data standards by sector experts and leveraging government sources

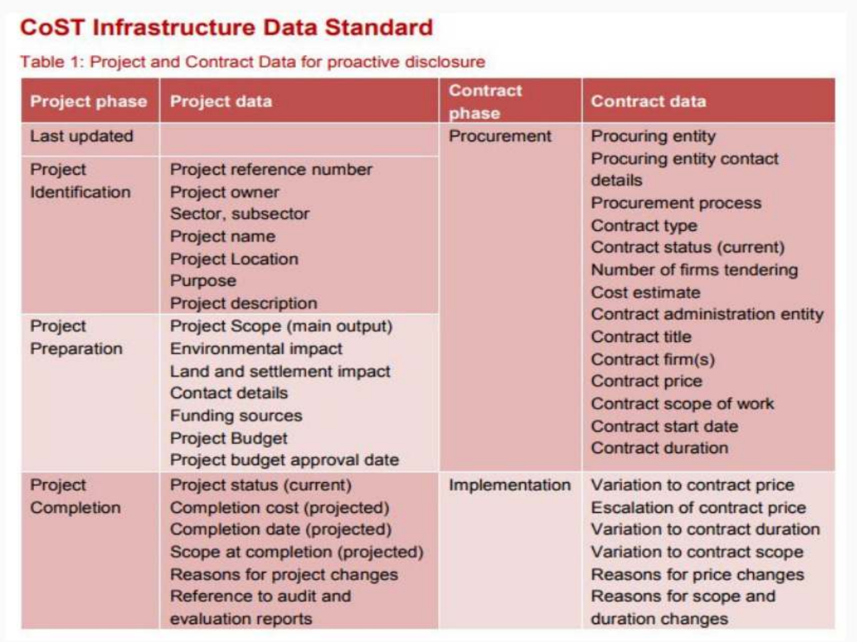
In a constrained environment with limited transparency, using expert reports and standards can be another source of guidance for data journalists. Both in identifying and structuring data sources for data compilation, and in understanding where the issues are to develop a hypothesis. In this example for large scale multi-billion Ringgit infrastructure projects, CoST – the Infrastructure Transparency Initiative (CoST) - Infrastructure Data



Caption: LRT3 Schematic from EIA Report[34]

Standard and Open Contracting Data Standards can be used[35].

In previous examples such as election results and water supply disruptions, the data structures are relatively simple with a few sources of information. For large complex opaque procurement projects that span multiple years and layers or procedures, such as infrastructure, creating a spreadsheet to source and structure data becomes a daunting task. Finding and referring to specialist standards can help guide journalists structure the spreadsheet. CoST IDS standard here can be used as reference.



CoST Infrastructure Data Standard

Table 1: Project and Contract Data for proactive disclosure

Project phase	Project data	Contract phase	Contract data
Last updated		Procurement	Procuring entity Procuring entity contact details Procurement process Contract type Contract status (current) Number of firms tendering Cost estimate Contract administration entity Contract title Contract firm(s) Contract price Contract scope of work Contract start date Contract duration
Project Identification	Project reference number Project owner Sector, subsector Project name Project Location Purpose Project description		
Project Preparation	Project Scope (main output) Environmental impact Land and settlement impact Contact details Funding sources Project Budget Project budget approval date		
Project Completion	Project status (current) Completion cost (projected) Completion date (projected) Scope at completion (projected) Reasons for project changes Reference to audit and evaluation reports	Implementation	Variation to contract price Escalation of contract price Variation to contract duration Variation to contract scope Reasons for price changes Reasons for scope and duration changes

Using CoST IDS to organize spreadsheet

TIPS: Use Spreadsheet Cell Comments to Track Sources

Use the cell comment feature of spreadsheets to store notes on sources for each piece of data

Using the same standard, but looking at references for project documentation can also be utilised by the journalists to find or inquire about official documents that are needed as sources for data. Data journalists can also use reporting by other journalists to piece together project details.

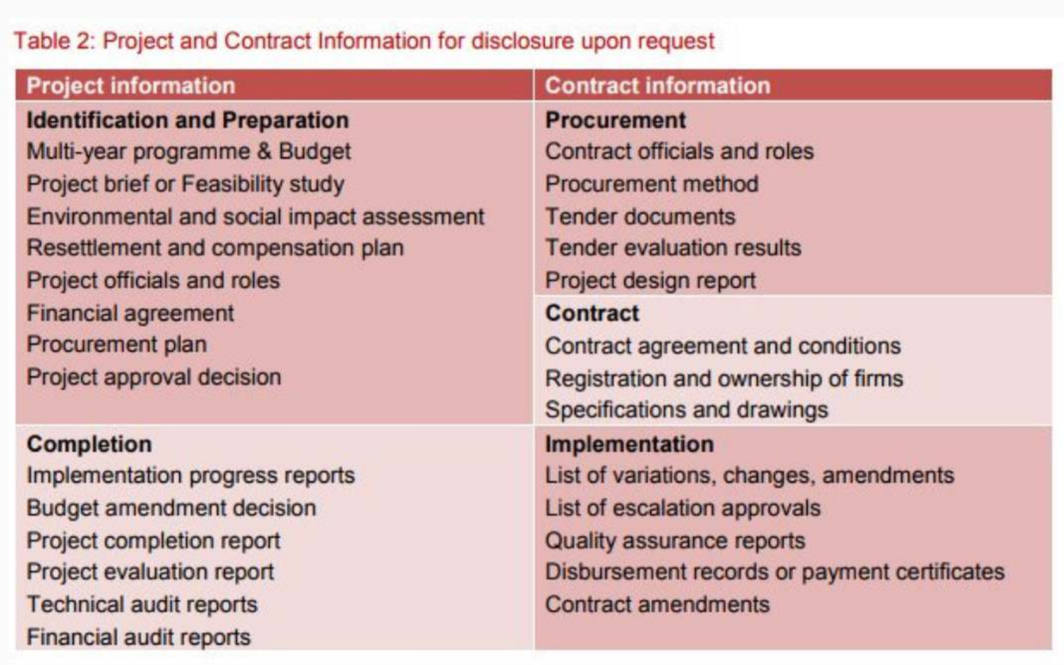
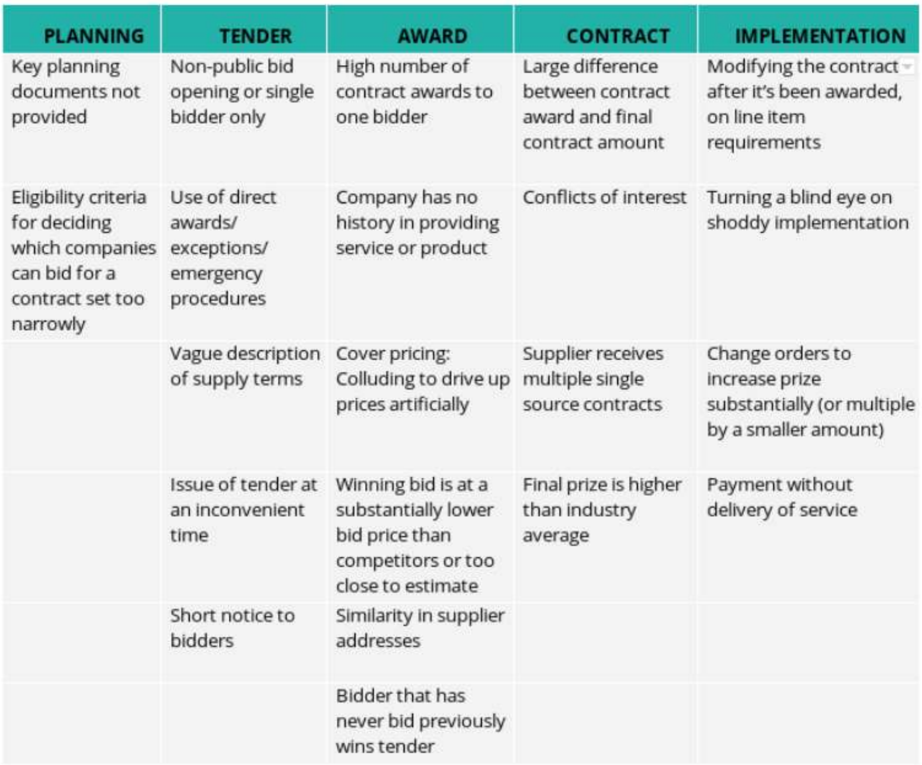


Table 2: Project and Contract Information for disclosure upon request

Project information	Contract information
Identification and Preparation Multi-year programme & Budget Project brief or Feasibility study Environmental and social impact assessment Resettlement and compensation plan Project officials and roles Financial agreement Procurement plan Project approval decision	**Procurement** Contract officials and roles Procurement method Tender documents Tender evaluation results Project design report **Contract** Contract agreement and conditions Registration and ownership of firms Specifications and drawings
Completion Implementation progress reports Budget amendment decision Project completion report Project evaluation report Technical audit reports Financial audit reports	**Implementation** List of variations, changes, amendments List of escalation approvals Quality assurance reports Disbursement records or payment certificates Contract amendments

CoST IDS project information



PLANNING	TENDER	AWARD	CONTRACT	IMPLEMENTATION
Key planning documents not provided	Non-public bid opening or single bidder only	High number of contract awards to one bidder	Large difference between contract award and final contract amount	Modifying the contract after it's been awarded, on line item requirements
Eligibility criteria for deciding which companies can bid for a contract set too narrowly	Use of direct awards/ exceptions/ emergency procedures	Company has no history in providing service or product	Conflicts of interest	Turning a blind eye on shoddy implementation
	Vague description of supply terms	Cover pricing: Colluding to drive up prices artificially	Supplier receives multiple single source contracts	Change orders to increase prize substantially (or multiple by a smaller amount)
	Issue of tender at an inconvenient time	Winning bid is at a substantially lower bid price than competitors or too close to estimate	Final prize is higher than industry average	Payment without delivery of service
	Short notice to bidders	Similarity in supplier addresses		
		Bidder that has never bid previously wins tender		

Caption: Open Contracting Data Standard Stages and Problems[36]

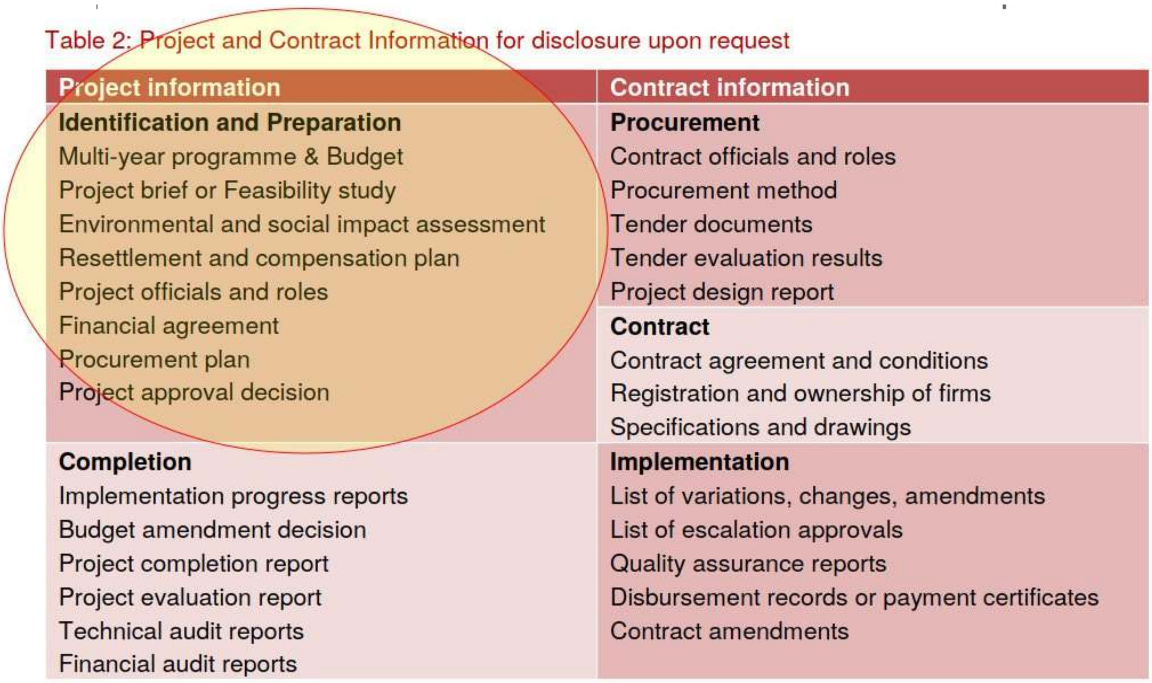


Table 2: Project and Contract Information for disclosure upon request

Project information	Contract information
Identification and Preparation	**Procurement**
Multi-year programme & Budget	Contract officials and roles
Project brief or Feasibility study	Procurement method
Environmental and social impact assessment	Tender documents
Resettlement and compensation plan	Tender evaluation results
Project officials and roles	Project design report
Financial agreement	**Contract**
Procurement plan	Contract agreement and conditions
Project approval decision	Registration and ownership of firms
	Specifications and drawings
Completion	**Implementation**
Implementation progress reports	List of variations, changes, amendments
Budget amendment decision	List of escalation approvals
Project completion report	Quality assurance reports
Project evaluation report	Disbursement records or payment certificates
Technical audit reports	Contract amendments
Financial audit reports	

TIPS: Use International Data Standards and Reports for Data Structure

Data is often incomplete, and requires compiling from multiple sources. Look for data and reports published by international bodies such as the World Health Organisation, Food and Agriculture Organisation, International Labour Organisation, UNDP and others to help design your data collection spreadsheet columns and categories for combining data from multiple sources.

Standards can also help guide journalists develop a hypothesis-driven story, by understanding the common issues for a sector or industry. It can then provide a common framework or situations where this problem can occur. The Open Contracting Data Standard (OCDS)[37] provides consistent stages in procurement that are being adopted by leading economies. By understanding where common problems lies within public procurement, journalists can then quickly develop a hypothesis, along with the data sources they will need to find.

Searching Government Documents and Websites

Due to the difficulty in finding data, the existing sources of data listed may not cover the data needed or may no longer be accessible in the future. The following methods will help journalists find the data they need.

Using Search Engine Modifiers

When data cannot be found easily on a website, use the following operators to help find the data you need.

<search keywords> site:*.gov.my

and to narrow it down to specific file types and websites

<search keywords> site:data.gov.my filetype:xls

This is useful even for CKAN data portals like data.gov.my because search engines will also return results within the files and not just the descriptions.

TIPS: Find official search terms and use both Bahasa and English

Government Documents

When machine readable formats such as CSV and XLS cannot be found, then data can also be found in government documents.

Parliamentary and State Legislative Documents

Parliamentary and state legislative documents provide a wealth of information and data[38] that are of public interest, in the form of replies to questions by elected representatives, select committees as well as documents that are submitted to these bodies and often also uploaded to respective websites. Additionally the answers provided in parliament will also reference the source government agencies, from which to get additional data from through enquiries or respective websites.

- parliment.gov.my
- pardocs.sinarproject.org

Government Reports

A lot of statistics are published as non-machine readable data in various government reports. Reports that provide a lot of information and data include but not limited to:

- Annual Reports
- Auditor General Reports
- Financial Statements
- Environmental Impact Assessment Reports
- Circulars

In addition to web search, many of these documents are also searchable at govdocs.sinarproject.org

TIPS: Look for indirect data

Search for direct terms may not return any results. Terms and conditions of government agreements are often unavailable under the Official Secrets Act. Try searching for indirect data.

Example:
Toll and other Concessions Agreements.
The agreement may not be available, but data such as government expenditure may be found in Parliamentary Documents or in Auditor General Financial Statements for Federal and State.

Securities Commissions

The Malaysian government holds a substantial stake in a lot of key public listed companies, many providing essential services. The annual reports, financial statements and offer documents are publicly available and provide additional information in the sectors and markets these companies are involved in.

In addition the corporate websites, public disclosures and reports of public listed companies can be search using search engines with the following parameters:

keywords site:disclosure.bursamalaysia.com

TIPS: Extract Tables from PDFs with Tabula

Data is often found as tables in reports and documents. Quickly extract and export them with Tabula software https://tabula.technology

Investigative Journalism Resources

Finding data in Malaysia is a challenging process. Many of the techniques shared require innovative and creative ways of finding data, which are often the same methods used by investigative journalists. In addition to the methods covered in this report, many more investigative methods can be found at the Global Investigative Journalism Network (GIJN) website, which will be essential for Malaysian data journalists.

GIJN Reporting Tips and Tools

https://helpdesk.gijn.org/support/solutions/articles/14000036502-reporting-tips-and-tools

Given potential risks faced by journalists in Malaysia in finding and reporting data, it is recommended that they familiarize themselves with the safety tips from the resources, including protecting sources (see whistleblowing[39]), along with some security basics[40].

Biodata of Author

Khairil Yusof is an investigative data journalist and researcher working on applying innovative methods of open data and standards, for transparency and anti-corruption. In addition to developing and supporting journalists on investigative methods on corruption, he is also an experienced digital security trainer.

He is the founder of Sinar Project, an organisation that collates patchy government statistics and turns them into usable data for the public and journalists.

He has over 15 years of cross-practice and cross-sector experience implementing programmes for UN agencies, governments and civil society in Asia-Pacific including digital rights, human rights, labour rights, and environment.

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