APBD Monitoring Dashboard

Exploration of Local Government Budget Realization and Local Development Performance Metrics

Prepared by Team 1

Raphael Gunawan | Agita Sesara | Maju Sumanto | Indra Pratama

Brief Overview

Problem Statement and Intended Impact

Problem Statement

What issue is identified from the dataset?

After evaluating the dataset, it was clear that due to the nature of the data input, it is currently difficult for decision makers to combine the data and gain insights from it as part of decision making and policy making.

The main challenges are listed below:

1. The values of different columns were found to be not standardized
2. Dataset is limited to only realization of budget, and to only two (2) time frames, i.e. 2018 and 2019
3. Dataset doesn't have enough variables internally
4. Limited available external dataset with the same region level

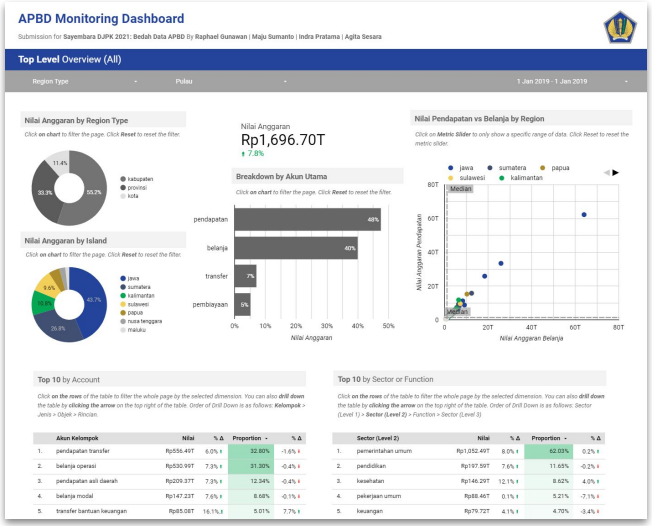
Intended Impact

What impact could be felt if the issues are tackled?

By using APBD Monitoring Dashboard, decision makers can be empowered to quickly evaluate past budget allocations on different region levels, and strategize for next year's budget planning based on the insights.

APBD Monitoring Dashboard

Finalized APBD Monitoring Dashboard that can be utilized by decision makers for evaluation and policy making strategy

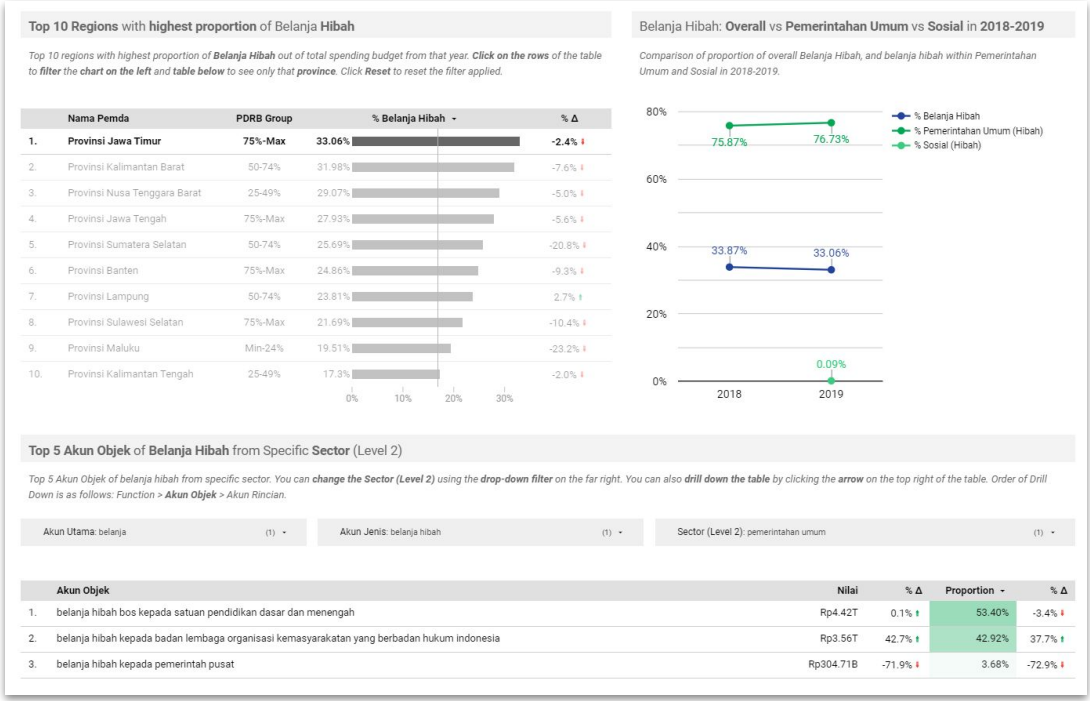


See the Live Dashboard

Intended Impact:

Identifying & Solving Problems Efficiently

Having readily available data in a more accessible presentation or visualizations will empower decision makers to identify problems early, and developing policy actions to solve the problems more efficiently.



Top 10 Regions with **highest proportion** of Belanja **Hibah**

*Top 10 regions with highest proportion of **Belanja Hibah** out of total spending budget from that year. **Click on the rows** of the table to **filter** the **chart on the left** and **table below** to see only that **province**. Click **Reset** to reset the filter applied.*

	Nama Pemda	PDRB Group	% Belanja Hibah	% Δ
1.	Provinsi Jawa Timur	75%-Max	33.06%	-2.4%
2.	Provinsi Kalimantan Barat	50-74%	31.98%	-7.6%
3.	Provinsi Nusa Tenggara Barat	25-49%	29.07%	-5.0%
4.	Provinsi Jawa Tengah	75%-Max	27.93%	-5.6%
5.	Provinsi Sumatera Selatan	50-74%	25.69%	-20.8%
6.	Provinsi Banten	75%-Max	24.86%	-9.3%
7.	Provinsi Lampung	50-74%	23.81%	2.7%
8.	Provinsi Sulawesi Selatan	75%-Max	21.69%	-10.4%
9.	Provinsi Maluku	Min-24%	19.51%	-23.2%
10.	Provinsi Kalimantan Tengah	25-49%	17.3%	-2.0%

0% 10% 20% 30%

Belanja Hibah: **Overall** vs **Pemerintahan Umum** vs **Sosial** in **2018-2019**

Comparison of proportion of overall Belanja Hibah, and belanja hibah within Pemerintahan Umum and Sosial in 2018-2019.

Top 5 Akun Objek of **Belanja Hibah** from Specific **Sector** (Level 2)

*Top 5 Akun Objek of belanja hibah from specific sector. You can **change the Sector (Level 2)** using the **drop-down filter** on the far right. You can also **drill down the table** by clicking the **arrow** on the top right of the table. Order of Drill Down is as follows: Function > **Akun Objek** > Akun Rincian.*

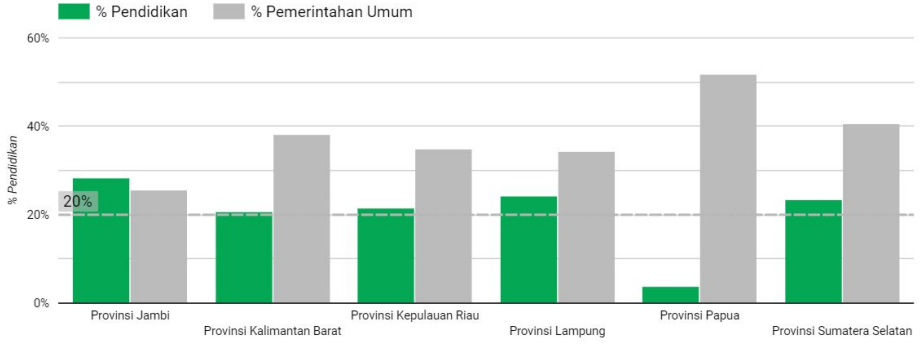
Akun Utama: belanja (1) | Akun Jenis: belanja hibah (1) | Sector (Level 2): pemerintahan umum (1)

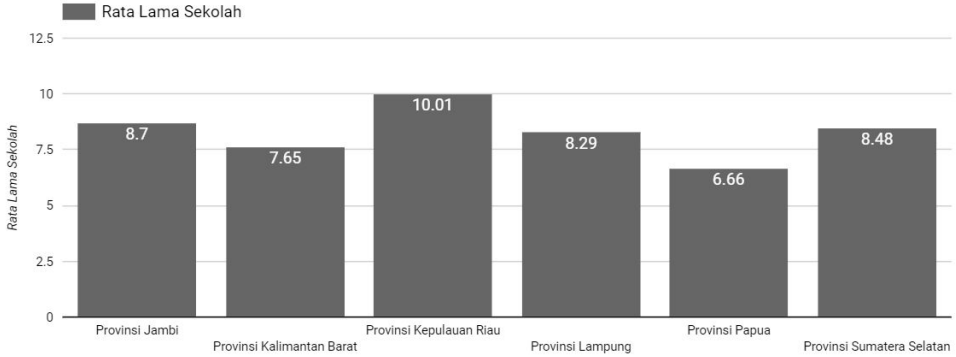
	Akun Objek	Nilai	% Δ	Proportion	% Δ
1.	belanja hibah bos kepada satuan pendidikan dasar dan menengah	Rp4.42T	0.1%	53.40%	-3.4%
2.	belanja hibah kepada badan lembaga organisasi kemasyarakatan yang berbadan hukum indonesia	Rp3.56T	42.7%	42.92%	37.7%
3.	belanja hibah kepada pemerintah pusat	Rp304.71B	-71.9%	3.68%	-72.9%

Intended Impact:

Data-driven Policy Making

Enriching APBD data with key performance indicators can assist Decision-makers in evaluating the impact of spending of different regions more holistically and enable them to perform a more data-driven policy making process.





Intended Impact:

Budget Absorption Evaluation

If the planned budget data is also available, we can evaluate planning versus actualizations of budget to see which region **has a challenge in absorbing their budget efficiently**.

Region: Kabupaten ABC

Planned Budget	Realized Budget	% Diff	Budget Absorption
10.3 T	**8.07 T**	-21.6%	**POOR**
⬆ 15.7%	⬇ 35.6%		

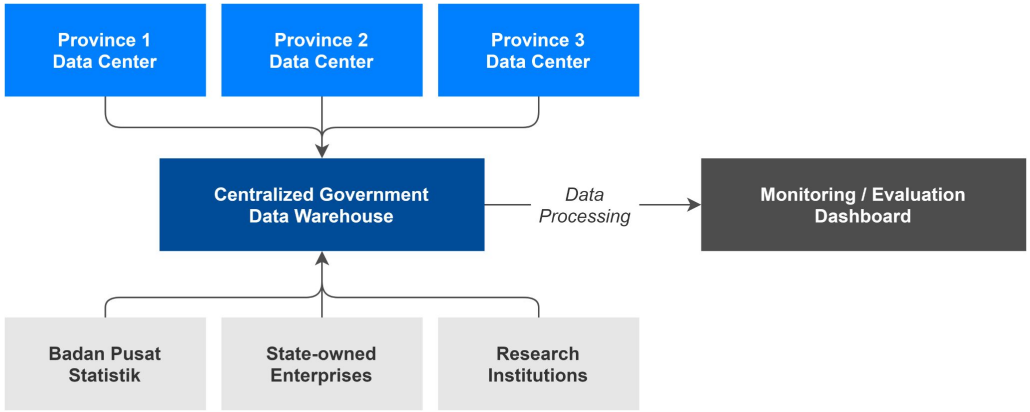
Region: Kabupaten XYZ

Planned Budget	Realized Budget	% Diff	Budget Absorption
15.1 T	**14.89 T**	-2.1%	**EFFICIENT**
⬆ 5.7%	⬆ 14.6%		

Intended Impact:

Automated process for Evaluation Dashboard

To improve data freshness, we can automate the process of data ingestion and processing so that the monitoring dashboard can be populated with new data points as soon as they are available



Next Steps

Conclusion and Recommendation

Conclusion

What impact could be felt if the issues are tackled?

In conclusion, developing a dashboard to visualize the dataset is the best way to help find insights and intuitions given the limitation of this dataset and its inconsistency in naming its variables.

The dashboard should be able to narrow down the scope of evaluation needed when evaluating policy for local government budget allocation. Thus, it shall shorten and make public policy making processes which aim to produce more timely policy actions.

That said, having standardized names and having more comprehensive datasets would alleviate the limitation to further the research and gain a deeper knowledge.

To solve those limitations, we provide several recommendations for Direktorat Jenderal Perimbangan Keuangan (DJPK) to consider in the next section.

What's Next?

Recommendations to achieve the intended impact

We have two (2) general recommendations in order to achieve the intended impact that we detailed in the beginning:

Standardization of Data Input

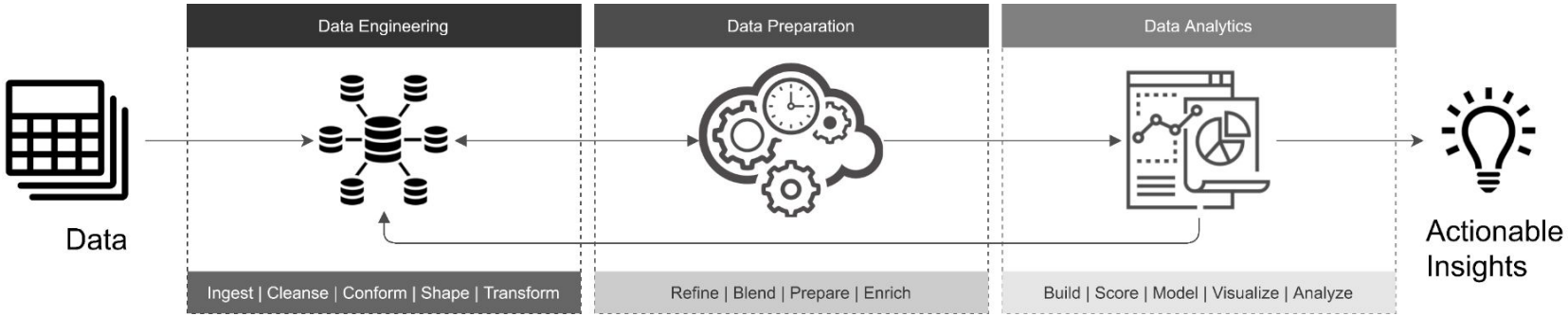
As the lowest hanging fruit, improving the data input can already ease data analysis and provide a substantial impact once implemented.

Data to Actionable Insights

Ideally, policy makers should have top-level visibility of the budget allocation, realization, and impact of budget realization to empower their decision making process. However, data readiness is currently the biggest hurdle due to the nature of the data. This recommendation focused on getting from data to actionable insights.

Data to Actionable Insights

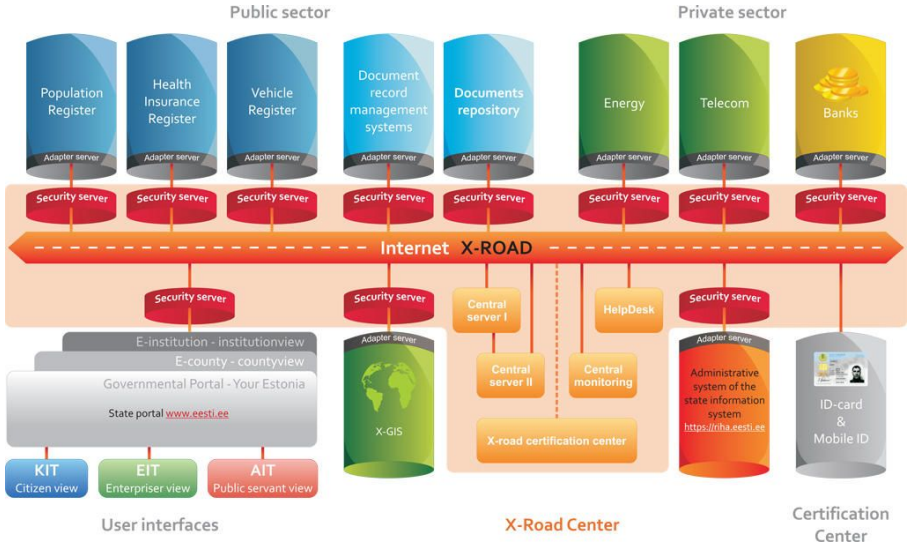
Brief Overview



Ideally, the central government should have full control of how data from different sectors and regions should be collected, stored, processed, and visualized by establishing a clear data pipeline that is fully or at least partially automated. The output of this implementation can be a centralized government data warehouse that can be a source of truth to be used by decision makers across sectors.

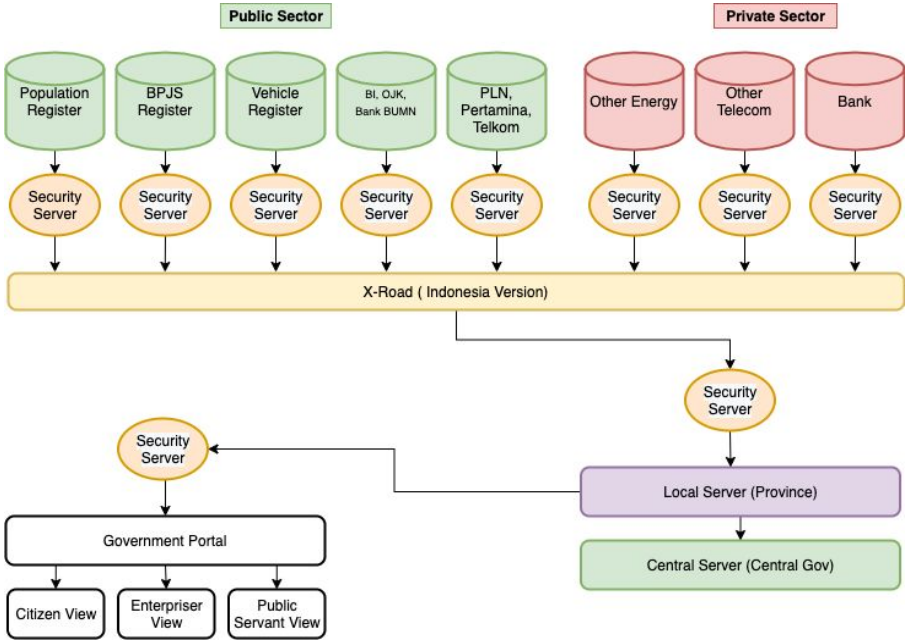
Data to Actionable Insights

Case Study: Estonia Information System



Instead of using machine learning for the data cleansing, they improve the data collection process so that the data is well standardized

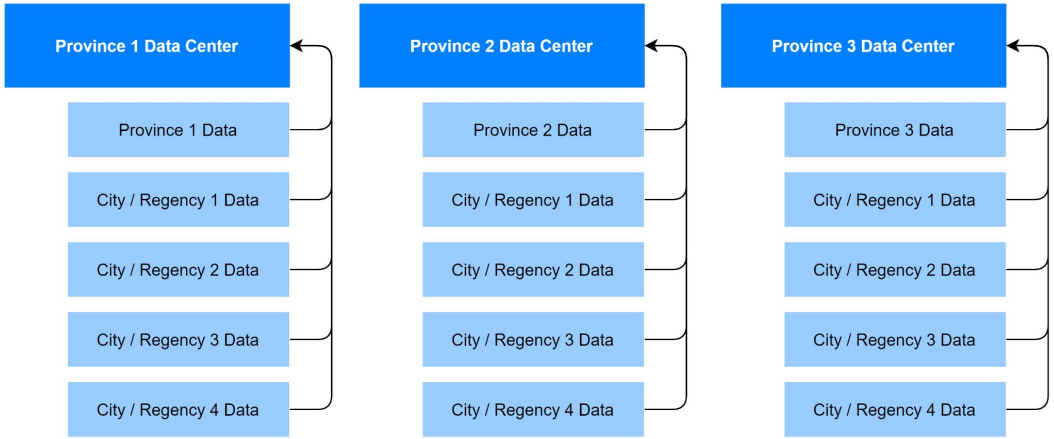
Recommendation: Modification for Indonesia Case



The data of each institution is stored in their respective storage/server then the stored data is sent to the central government through a secure internet-based data exchange layer that enables state's different information systems to communicate and exchange data with each other.

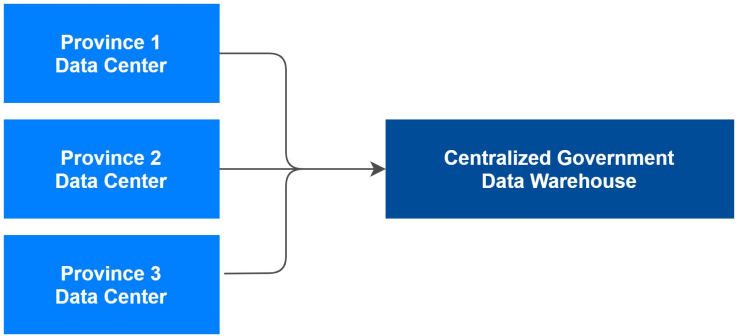
Data to Actionable Insights

Establish Local Government Data Centers



The first step of developing a data pipeline is establishing the data sources through data collection and consolidation. Data collection should start with the smallest unit, the local government bodies.

Establish Centralized Government Data Warehouse



Once data centers for each province have been established, all data from each data center should be streamed to the centralized government data warehouse to be consolidated. This will be the source of truth that later can be processed into different data products.

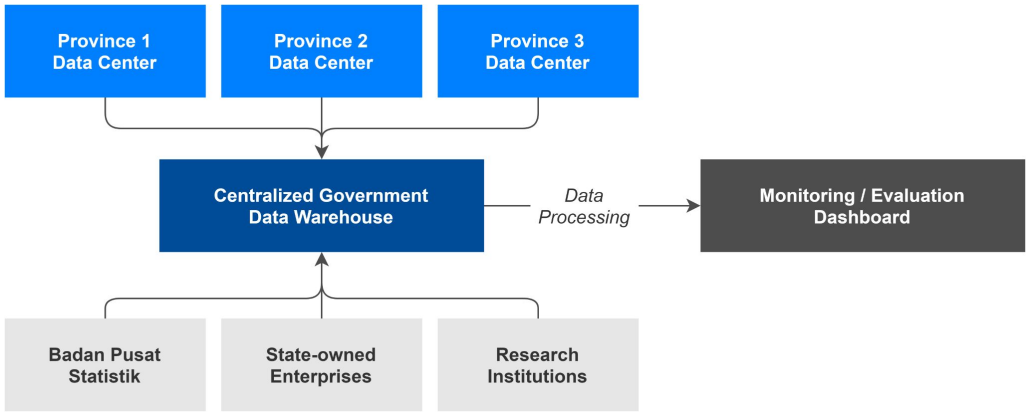
Data to Actionable Insights

Data Enrichment

Data enrichment can be achieved through formal cooperation with Badan Pusat Statistik and other credible institutions, government, state-owned enterprises, or research institutions, to provide / generate quarterly, semesterly and annually data on provinces and city/regency levels that could be used to provide better metrics to identify insights on impact of spendings and incomes of local governments.

Data to Actionable Insights

Developing Monitoring / Evaluation Dashboard



Enriched data from the centralized government data warehouse can now be processed and finally visualized in a Monitoring / Evaluation Dashboard to be used by different sectors within the government body. Impact of utilizing the dashboard includes data-driven decision making for policy makers and providing nationwide transparency and accountability within different level of government bodies.

Thank You!