



DATASHIFT



A deeper understanding of the dynamics that are driving the trends.

MINING CITIZEN FEEDBACK DATA FOR ENHANCED LOCAL GOVERNMENT DECISION-MAKING

SUMBAWA
LAPE

to support the targeting of policy interventions.

Existing information management systems used to verify the information, where possible.

ACTION

Policymakers can be more responsive to citizens' needs (should they wish).

CASE STUDY

INITIATIVE NAME:
MINING CITIZEN FEEDBACK DATA FOR ENHANCED LOCAL GOVERNMENT DECISION-MAKING

ONLINE PRESENCE:
WWW.UNGLOBPULSE.ORG/PROJECTS/CITIZEN-FEEDBACK-DATA-LOCAL-GOVERNMENT-DECISION-MAKING

GEOGRAPHICAL SCOPE:
NUSA TENGGARA BARAT, INDONESIA

An initiative of Pulse Lab Jakarta in partnership with various Indonesian governmental agencies, Mining Citizen Feedback Data for Enhanced Local Government Decision-Making combines various sources of citizen-generated data - from local and national complaint systems to informal Twitter comments - in order to better inform policy decisions. Piloted in Nusa Tenggara Barat, one of the poorest provinces of Indonesia, the topics of analysis were guided by the national priorities of development, including food sufficiency, energy, education, health and poverty alleviation.

With responsibilities and fiscal resources increasing, government in Indonesia is looking for better evidence to inform its policy decisions. Both central and local governments are looking for ways to collect and understand citizens' opinions on public services and development.

Local governments have been looking for ways to better reach their citizens, understand their complaints, and take steps towards solving them through policy. In addition to formal citizen feedback mechanisms such as LAPOR! and other provincial and local systems, government is exploring social media platforms, as they “contain vibrant discussions within and between communities on issues of concern” and provide an opportunity “to supplement formal feedback with the passive feedback contained within public discourse on Twitter”.¹

Internet usage in Indonesia²

Estimates indicate there are now over 74 million internet users in Indonesia, with numbers forecast to reach at least 100 million in 2015.³ A report by SemioCast in 2013 showed Jakartans were the most active Twitter users and posted 2 percent of the 10.6 billion tweets worldwide.⁴

MINING CITIZEN FEEDBACK DATA FOR ENHANCED LOCAL GOVERNMENT DECISION-MAKING

Given this context, Pulse Lab Jakarta designed Mining Citizen Feedback Data for Enhanced Local Government Decision-Making,⁵ a project that combines data on citizens' opinions from multiple sources - including LAPOR!, a local feedback mechanism - in order to provide structured insights for local decision-makers. The project highlights the potential of existing datasets, but also the need to integrate new information management systems into national and local governance.

Geographically, the focus of this project was on Nusa Tenggara Barat province, one of Indonesia's poorest. The province was of particular interest because of the provincial

1 UN Global Pulse, “Mining Citizen Feedback Data for Enhanced Local Government Decision-Making”, Global Pulse Project Series 16, 2015.

2 <http://www.unglobalpulse.org/jakarta>

3 <http://www.slideshare.net/OnDevice/indonesia-the-social-media-capital-of-the-world>

4 Ibid.

5 UN Global Pulse, “Mining Citizen Feedback Data for Enhanced Local Government Decision-Making”, Global Pulse Project Series 16, 2015.

administration's interest in new approaches to public governance.

The organisation behind the project, Pulse Lab Jakarta, is “the first innovation lab of its kind in Asia”.⁶ It brings together experts from UN agencies, the Indonesian government, non-governmental organisations and the private sector to research and facilitate the adoption of new data sources and real-time analysis for social development. Its numerous projects⁷ explore the utility of analysing social media and other sources of digital data. Pulse Lab Jakarta's annual research agenda is based on national development priorities,⁸ in consultation with the government of Indonesia and the UN Country Team. Its multidisciplinary team⁹ conducts applied research projects and makes the results available in ways that can inform policy-makers and UN agencies' work.¹⁰

THE DATA

The objective of the Mining Citizen Feedback Data for Enhanced Local Government Decision-Making project is to obtain a deeper understanding of public opinion for decision-makers. In order to do this, Pulse Lab Jakarta decided to draw data from three sources: two datasets from active citizen feedback platforms at the national and provincial level; and public posts on Twitter.

For local governments, two citizen feedback systems exist – one managed by the central government and the other initiated by subnational administrations. LAPOR!¹¹ is the national system to which a citizen can report any complaint in Indonesian, either by SMS, on its website, through its mobile app or by Twitter.¹² LAPOR! gets 535 complaints a day on average. As of November this year, 65% of the reports in its system had been resolved, 20% had not yet been responded to and 15% were

6 Pulse Lab Jakarta was established in late 2012 through a partnership between the UN and the Ministry of National Development and Planning (Bappenas): <http://www.unglobalpulse.org/jakarta>

7 See all of Pulse Lab Jakarta's projects here: <http://www.unglobalpulse.org/taxonomy/term/897>

8 These priorities include areas such as changes in food prices, fuel prices, employment and urban poverty, and identifying what issues are important to ordinary Indonesians to help shape the post-2015 priorities: <http://www.unglobalpulse.org/jakarta>

9 To see more about the team, click here: <http://www.unglobalpulse.org/meet-pulse-lab-jakarta>

10 For more on the Jakarta location, see here: <http://www.unglobalpulse.org/jakarta>

11 For more information, go to their website: www.lapor.go.id

12 The citizen gets a unique tracking ID for each report and a notification when an official responds. Agencies are supposed to respond within five working days. If a citizen does not get a response within five working days, LAPOR!'s team calls the agency's liaison officer. If a week later there is still no progress, it sends a report to a senior official. This includes which units in the agency received the most complaints and how they were managed. In Head of LAPOR! Gibran Sesunan's experience, this usually pushes agencies to be more responsive. Finally, if this doesn't work, the agency can be reported to the Ombudsman of Indonesia, which will investigate the case and give a binding order to the agency: <https://govinsider.asia/innovation/inside-lapor-indonesias-complaints-unit/>

in progress.¹³ According to Associate Director at Indonesia's Office of Presidential Staff and Head of LAPOR! Gibran Sesunan, "While it has seen success in the central government, more progress is needed in provinces and cities. Only 6 out of over 500 local governments are using the service."¹⁴

The differences in the perspectives from the three data sources can be seen in the example concerning electric power continuity, a major development issue in Nusa Tenggara Barat province.¹⁵

- **From Twitter:** "The power outage happened at dawn, electricity was restored at 2pm and yet now the outage happens again, PLN [the electricity company in Indonesia] does not understand."
- **From LAPOR!:** "The power outage happens six times a day in Mataram, Nusa Tenggara Barat. Although the duration of the power outage is less than a minute, it is really disturbing our activities and might break our house appliances. Need PT PLN attention to solve this problem."
- **From SMS Gateway:** "Why do power outages frequently happen after the change of the Regent?"

Particularly innovative is the use of Twitter as a data source. The first step for Pulse Lab Jakarta is to select relevant messages by geolocating each of them in order to determine if a Tweet was posted from Nusa Tenggara Barat province. After removing spam and other irrelevant tweets, the remaining 92,000 messages have been structured using 1,600 filtering rules with over 350 keywords, which were informed by the 10 national development priorities.¹⁶

ANALYSING THE DATA FOR POLICY PURPOSES

Having gathered sufficient data from these three sources, the next step is visualising the changing trends. Given the volume of messages, visualisations provide an easy way to understand popular priorities and concerns in near real-time. For example, in June and July of 2013, there was a spike in comments and messages about poverty alleviation, in particular regarding the unequal distribution of a social protection programme. The geolocation of the users in the province proved particularly useful to the Nusa Tenggara Barat administration in planning its response.

13 <https://govinsider.asia/innovation/inside-lapor-indonesias-complaints-unit/>

14 Jakarta, Bandung, Indragiri Hulu, Bojonegoro, Gorontalo and Parigi Moutong: <https://govinsider.asia/innovation/inside-lapor-indonesias-complaints-unit/>

15 Ibid.

16 These are food sufficiency, energy, maritime development, infrastructure and transportation, education, health, poverty alleviation, bureaucratic reform, tourism and industry. UN Global Pulse, "Mining Citizen Feedback Data for Enhanced Local Government Decision-Making", Global Pulse Project Series 16, 2015.

The amount of data analysed helps draw a better, more complete, picture:

A volume analysis gives a good snapshot of current issues raised by citizens, but when the volume of messages is high across many issue areas policy-makers cannot easily determine which issues to prioritise. A simple but automatic anomaly detection method based on a dynamic threshold value was applied to the database in order to identify automatically sudden spikes. For instance, a sudden volume change on Government Aid (“Bantuan Pemerintah”) was identified ... enabling prioritisation by decision-makers.¹⁷

Some issues are inherently coupled, requiring multiple authorities to investigate and respond. The dashboard used word co-occurrence analysis to identify linked problems. In one instance, “food sufficiency” and “energy security” were identified as linked concepts on Twitter: “The brown rice and broccoli prices go up following the increase in fuel price.”¹⁸ In another example, the concepts of “health” and “poverty alleviation” co-occurred in LAPOR! reports: “Dear health minister, I have suffered heart disease for 14 years. Is there any way for poor people to receive free surgery? Is there any possibility that the surgery will be free in future?”¹⁹

The team at Pulse Lab Jakarta identified a series of implications and recommendations based on their experience with Mining Citizen Feedback Data for Enhanced Local Government Decision-Making:²⁰

- *Social media captures a richer array of issues than formal complaint mechanisms and should be considered an essential source of citizen feedback.*
- *It is advisable that provincial administrations consider integrating real-time data from their formal feedback systems into the dashboard, as opposed to mining historical data.*
- *The integration of additional data sources should also be considered when designing dashboards.*
- *Whenever possible, provincial administrations should publish this type of citizen feedback dashboard in order to enhance transparency and help constituents understand how their feedback is processed.*

17 Ibid.

18 Ibid.

19 Ibid.

20 Ibid.

CONTACT POINT

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DataShift is a multi-stakeholder, demand-driven initiative that builds the capacity and confidence of civil society to produce and use citizen-generated data to monitor sustainable development progress, demand accountability and campaign for transformative change. Ultimately, our vision is a world where people-powered accountability drives progress on sustainable development.

DataShift is an initiative of **CIVICUS**, in partnership with **the engine room** and **Wingu**. For more information, visit www.thedatashift.org or contact datashift@civicus.org.

