

# Infodemiological Report about Indonesia

## November 2020

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This note analyses the infodemic trends in Indonesia in the Jan - Nov 2020 period, with reference to Twitter posts in English only. Our analysis cannot be considered representative of infodemic trends related to posts written in Bahasa Indonesia, but its methodology can be extended to multilingual domains with the help of native speaker local analysts. Such content targets the most cosmopolitan and best educated share of the Indonesian population. The infodemic profile might be very different in principle for contents in the local mother tongue.

- **Coverage level: High**

An average of more than 40,000 tweets per day. Between 22nd Jan and 16th Nov 2020: 10.6 million tweets with self-declared location associated with Indonesia, 1.6 million tweets contain URLs linking to news sources, of which 242,000 were successfully identified as either reliable or unreliable by crossing the URL domain with our database of news domain reliability, none of which were written in Bahasa Indonesia.

- **Infodemic Risk: Low - Decreasing**

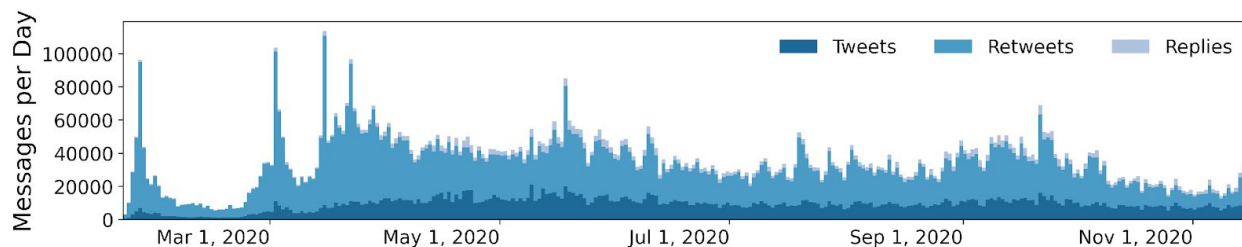
A low average *IRI*, measuring the infodemic risk from an exposure perspective (how many users are potentially exposed to unreliable news?) as 17%, a value which steadily dropped in time from 40% (January) to 11% (November).

A low - low/medium *dynIRI*, a measure of the infodemic risk from social media engagement (how many users are observed propagating unreliable news?), which for Indonesia fluctuates around an average of 25%, corresponding to the 39th percentile worldwide.

The country has a low infodemic risk during the period of observation, and moreover that such risk declines as the pandemic aggravates. This does not imply that infodemic threats are not active, but only that the online conversation in English focuses upon relatively reliable and certified sources. Better understanding the nature and characteristics of existing infodemic threats may be useful to timely anticipate possible future infodemic bursts.

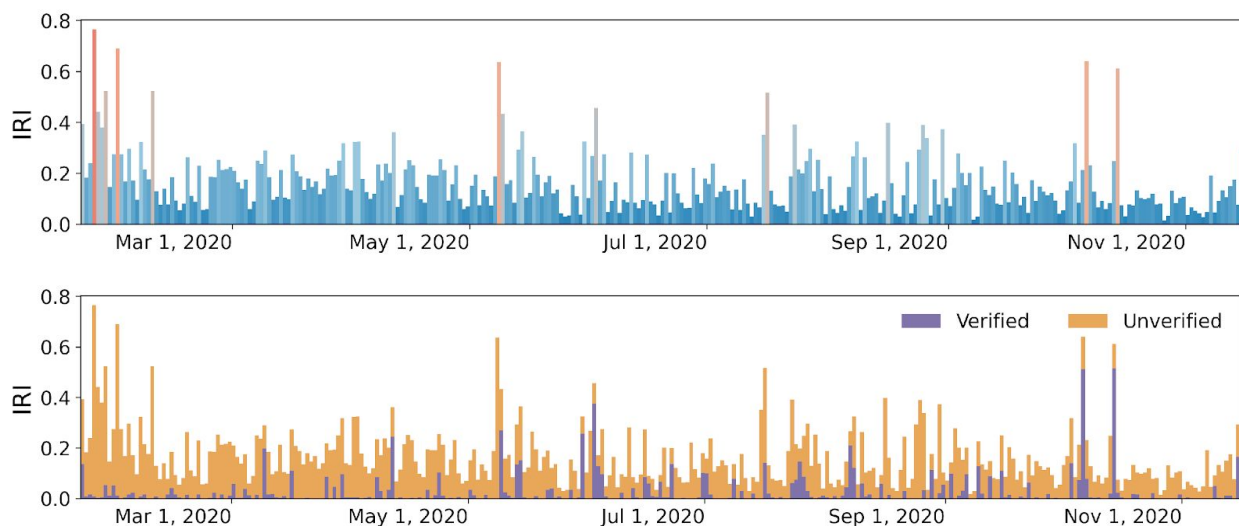
**Policy implication:** the combination of high information flows and low risks makes of Indonesia a country whose current infodemic profile is not critical. However, infodemic risk has to be monitored constantly because the situation might change quickly in a turbulent period such as in the middle of a pandemic crisis.

## Indonesia trends



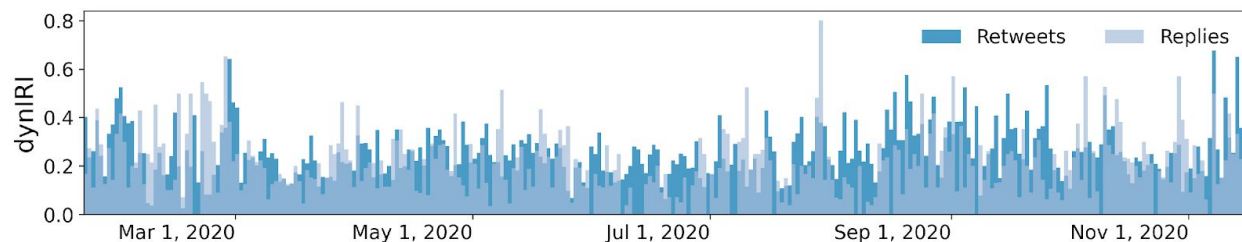
**Number of Tweets per day.** After a first unstable phase characterized by two big bursts of retweets separated by a low activity run throughout the negative sentiment phase in February (see below), the level of activity has been relatively stable with a few isolated spikes. As it can be seen, the main driver of the overall activity is made of retweets, which means that the main conversation is shaped by a relatively small number of influencers whose posts are widely amplified by followers.

**Policy implication:** identifying those influencers and the risk profile of the news they share is important in predicting the evolution of infodemic risk.



**IRI.** The pattern of infodemic risk over time is characterized by sudden and sharp spikes of unreliable information diffusion, often due to the action of single verified influencers with a rather large following, suggesting that the low-risk scenario is not characterized by overall stability but rather by an erratic oscillation between phases of quiet and hyper-activity.

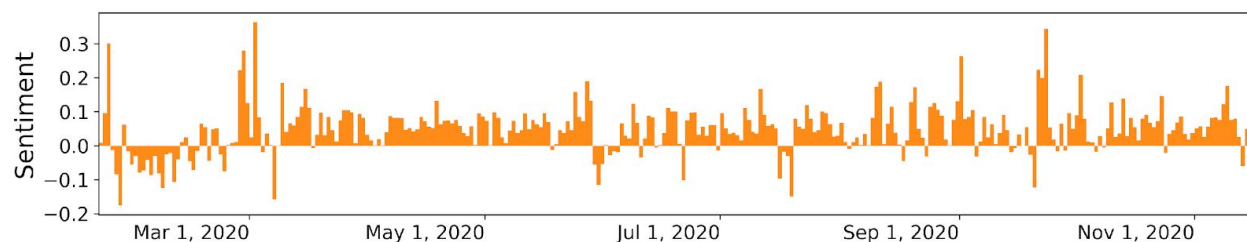
**Policy implication:** although Indonesia is not a critical country in terms of infodemic risk, the sudden spikes of misinformation may have a destabilizing effect. Identifying the influencers that spark them is crucial to develop suitable counter-narratives.



### Dynamic IRI.

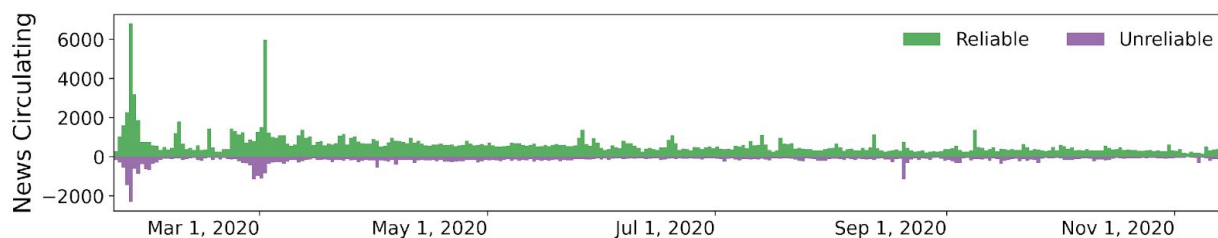
Focusing on the ‘amplification’ dynamics, that is on retweets and replies only, the dynamic pattern of infodemic risk shows substantial variability, further suggesting a far-from-stable situation despite the relatively low infodemic risk profile, which seems to be open to many possible future scenarios. The values of dynIRI suggest a high engagement with misinformation.

**Policy implication:** the DynIRI indicator shows that Indonesia is potentially susceptible to escalating infodemic risk due to high reactivity to misinformation.



**Sentiment.** We automatically measure the average daily sentiment of all tweets written in english using the VADER sentiment algorithm, which projects a message sentiment on a scale between -1 (negative message) and +1 (positive message) with 0 characterizing neutral messages. The resulting sentiment time profile shows occasional, active drops in the negative sphere along what generally is a positive sentiment. Notice also how certain negative sentiment spikes are followed by an even more pronounced ‘bounce back’ effect. The only consistently negative sentiment phase is found at the beginning of the pandemic crisis in February when the China outbreak became publicly known.

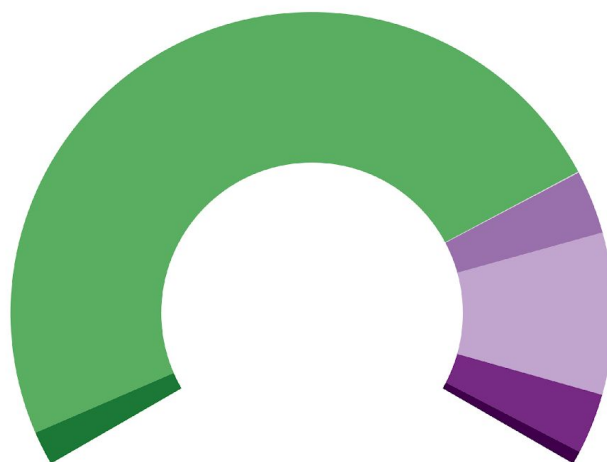
**Policy implication:** the generally positive nature of the sentiment reflects Indonesia’s profile of a low infodemic risk, but the occasional deep spikes of negative sentiment reflect the above evidence that there is a looming instability that needs to be accurately monitored.



**News circulating.** The spikes in the activity are mostly due to bursts of reliable news and are characterized by a larger volume in the earlier days of the epidemics. In recent times, we see two substantial peaks of unreliable news circulating in August and November which deserves further exploration. Overall, the flow of reliable news consistently overcomes that of unreliable ones with the aforementioned exceptions which could also be a ‘test’ by disinformation agents that might prelude to further future crises.

**Policy implication:** The fact that spikes mostly concern reliable sources again confirms the general low-criticality infodemic profile but the occasional spikes of misinformation also confirm that the country is being ‘tested’ by misinformation agents in ways that can become quickly critical under suitable circumstances.

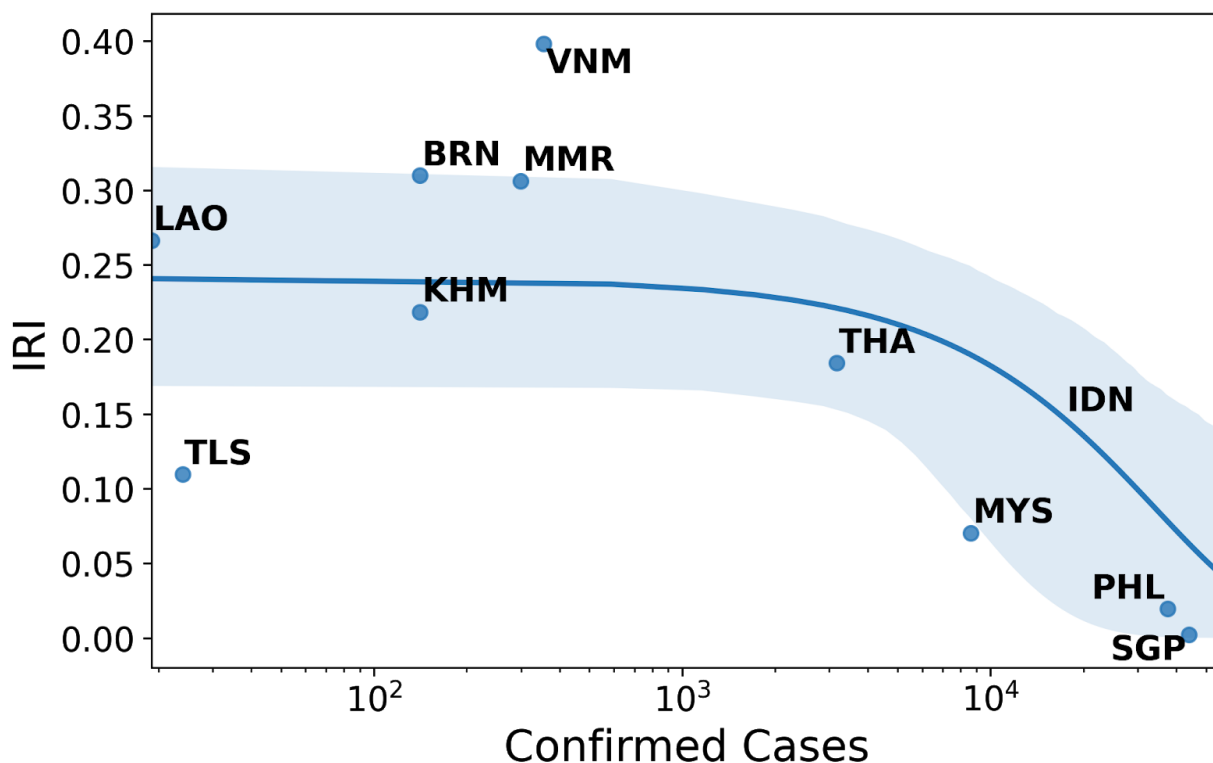
Science MSM Satire Clickbait Political Fake Conspiracy



**Type of news circulating.** The Indonesian media landscape is strongly characterized by the prevalence of mainstream media, with an appreciable component of scientific media, which almost balances in itself the volume of fake content. Conspiracy contents, the ones that contribute the most to the level of infodemic risk, are currently under control, and the by far most relevant share of biased content is linked to politically biased sources. There is also an important component of clickbait sites whereas satire is practically nonexistent. Overall, the

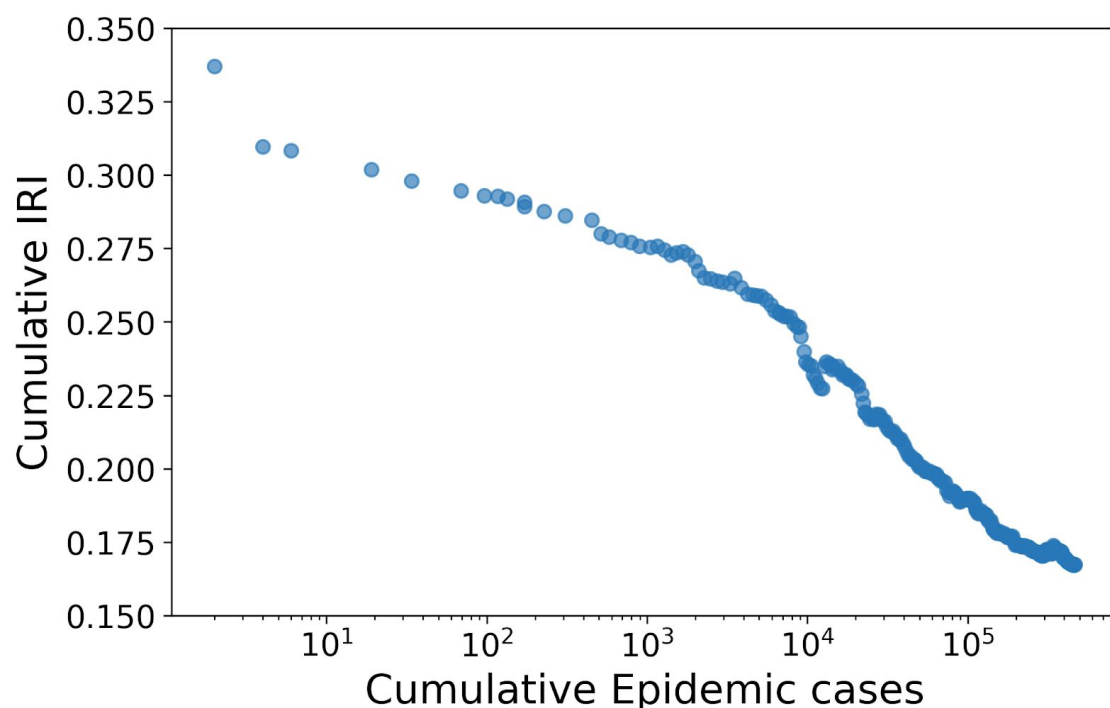
content mix of Indonesian media reflects the one that could be expected from a country with low infodemic risk.

**Policy implication:** the fact that misinformation is mainly linked to politically biased content and not to fake/conspiracy content signals that the stabilization of the Indonesian situation may largely benefit from a policy of national dialogue and unity across political forces in the public interest.



**Anticorrelation of IRI with total epidemic cases in ASEAN countries**, November 2020. Placing Indonesia in the wider context of ASEAN countries, we observe a characteristic and interesting pattern: a strong negative correlation (0.55) between infodemic risk and number of confirmed cases, that is robust to per-capita adjustments. This seems to suggest that the transition from less reliable to more reliable media sources as the pandemic aggravates is a consistent one in the ASEAN region. Notice also how level of infodemic risk is not related to socio-economic conditions, with high income-per capita countries like Brunei topping the ranking of infodemic risk (and other high-income countries like Singapore sitting at the bottom).

**Policy implication:** infodemic risk depends on a multitude of factors and is not directly related to socio-economic development. This also explains why infodemic risk could change quickly under certain circumstances and must be monitored closely.



**In Indonesia, as the epidemic spreads the risk of disinformation drops.** This graph further confirms the trend highlighted above, in this case for the dynamic evolution of the pandemic in Indonesia: infodemic risk goes down as contagion spreads.

**Policy implication:** the Indonesian public opinion seem to be attentive to issues of public responsibility in presence of an aggravating social threat. Strengthening sense of commitment to the common good in official communication might further reinforce this positive social feature.

■ Troll
 ■ Blogger
 ■ News Media
 ■ Physician
 ■ Public Communication
 ■ News Blog
 ■ Politician



**Roles played by all Indonesian community “community hubs”.** We analyze the hubs of the communication communities identified over a snapshot of the network in April 2020. Hubs are identified as the 20 members of the community with the larger number of interactions (retweets and replies). A community among those identified is centered around all Indonesian hubs, but in the chart above we include in the graph all hubs based in Indonesia, belonging or not to the “Indonesian” communication community. It is remarkable that the number of accounts labeled as “trolls” represents the largest fraction of hubs. As can be read below in the details about the Indonesian community, most of these accounts have since been suspended.

### Top 20 users of the Indonesian communication community

user handler	strength	type	role	ideology	url	Description
detikcom	10129	Institution	News Media	--	<a href="https://twitter.com/detikcom">https://twitter.com/detikcom</a>	Digital newspaper (focused on breaking news)
pule_polsek	5563	Bot	Troll	Conspirat ionist	<a href="https://twitter.com/pule_polsek">https://twitter.com/pule_polsek</a>	Suspended Account
Mentimoen	5165	Human	Blogger	--	<a href="https://twitter.com/Mentimoen">https://twitter.com/Mentimoen</a>	Super-producer (politics, music,



						art, covid-19)
KemenkesRI	4254	Institution	Public Communication	--	<a href="https://twitter.com/KemenkesRI">https://twitter.com/KemenkesRI</a>	Health ministry/department page
twitpos	3827	Bot	News Blog	--	<a href="https://twitter.com/twitpos">https://twitter.com/twitpos</a>	clickbait
TirtolD	3693	Institution	News Media	--	<a href="https://twitter.com/TirtolD">https://twitter.com/TirtolD</a>	Digital newspaper (+data journalism)
ZAEffendy	3549	Bot	News Blog	--	<a href="https://twitter.com/ZAEffendy">https://twitter.com/ZAEffendy</a>	clickbait
jokowi	2979	Human	Politician	Far Left	<a href="https://twitter.com/jokowi">https://twitter.com/jokowi</a>	Indonesia's president  <a href="https://en.wikipedia.org/wiki/Joko_Widodo">https://en.wikipedia.org/wiki/Joko_Widodo</a>  <a href="https://en.wikipedia.org/wiki/Indonesian_Democratic_Party_of_Struggle">https://en.wikipedia.org/wiki/Indonesian_Democratic_Party_of_Struggle</a>
dr_koko28	2889	Human	Physician	--	<a href="https://twitter.com/dr_koko28">https://twitter.com/dr_koko28</a>	Mainly covid-19 or related health issue
AlvaroDeBazan2	2719	Bot	Troll	--	<a href="https://twitter.com/AlvaroDeBazan2">https://twitter.com/AlvaroDeBazan2</a>	Suspended account
kompascom	2666	Institution	News Media	--	<a href="https://twitter.com/kompascom">https://twitter.com/kompascom</a>	Digital newspaper (breaking news)
dirgarambe	2465	Human	Physician	--	<a href="https://twitter.com/dirgarambe">https://twitter.com/dirgarambe</a>	Mainly covid-19 or related health issue
asumsico	2388	Institution	News Media	--	<a href="https://twitter.com/asumsico">https://twitter.com/asumsico</a>	Digital newspaper (pop culture+politics+breaking)
ryolandafit	1318	Bot	Troll	Conspirat ionist	<a href="https://twitter.com/ryolandafit">https://twitter.com/ryolandafit</a>	Now it seems to change in a



						newsblog that shares mainstream media news
1trenggalek	1276	Institution	Public Communication	Far Left	<a href="https://twitter.com/1trenggalek">https://twitter.com/1trenggalek</a>	National Police page
berlianidris	1204	Human	Physician	--	<a href="https://twitter.com/berlianidris">https://twitter.com/berlianidris</a>	Mainly covid-19 or related health issue
Usuman77280986	1137	Bot	Troll	--	<a href="https://twitter.com/Usuman77280986">https://twitter.com/Usuman77280986</a>	Suspended account
BintiRizieq	1119	Human	Blogger	Far Left	<a href="https://twitter.com/BintiRizieq">https://twitter.com/BintiRizieq</a>	Mainly politics
Uzumaki57184227	1092	Bot	Troll	--	<a href="https://twitter.com/Uzumaki57184227">https://twitter.com/Uzumaki57184227</a>	Suspended account
aniesbaswedan	1063	Human	Politician	Far Left	<a href="https://twitter.com/aniesbaswedan">https://twitter.com/aniesbaswedan</a>	Jakarta's Governor  <a href="https://en.wikipedia.org/wiki/Anies_Baswedan#Governor_of_Jakarta">https://en.wikipedia.org/wiki/Anies_Baswedan#Governor_of_Jakarta</a>

Several troll accounts among the top influencers; however, all of them are currently suspended - a sign that monitoring is currently active and efficient and that Twitter users also contribute to it by flagging abusive profiles. A few institutional accounts also sit between the top influencers, including those of the country's President, of Jakarta's Governor, of Health Ministry and of National Police. This means that institutions are highly credible and closely heard from the public opinion and may therefore play an important role in counteracting infodemic crises. This is confirmed by the fact that we also find three physicians among the top influencers, and the rest are either mainstream media or bloggers, plus a few news blogs mainly delivering clickbait. The only still active bot top influencer seems to have shifted its content focus from fake to mainstream media over time, again reflecting the general trend.

**Policy implication:** the profile of top influencers shows a stable configuration where reliable and institutional news sources lead the (English-speaking) national conversation. Institutional communications proves to be effective in this phase and a key stabilizing factor from the point of view of infodemic risk.

## Top 100 news

■ Science
 ■ MSM
 ■ Satire
 ■ Clickbait
 ■ Political
 ■ Fake
 ■ Conspiracy



**Top news circulating.** Selecting the 100 pieces of news most shared during the period of analysis, we observe a distribution similar to the general distribution of news displayed above. There is absence of top shared news belonging to the conspiracy category. Conspiratorial thinking seems not to be currently popular in Indonesia and attempts and introducing it should be monitored and controlled with special care.

## Top 10 unreliable news

Fact Type	URL	Domain	count
FAKE/HOAX	<a href="https://www.dailymail.co.uk/health/article-7926243/killer-coronavirus-spread-eyes.html?ito=amp_whatsapp_share-top">https://www.dailymail.co.uk/health/article-7926243/killer-coronavirus-spread-eyes.html?ito=amp_whatsapp_share-top</a>	<a href="https://www.dailymail.co.uk">dailymail.co.uk</a>	1922
POLITICAL	<a href="https://www.vanityfair.com/hollywood/2020/09/09/robert-pattinson-the-batman-coronavirus?mbid=social_twitter&amp;utm_brand=vf&amp;utm_medium=social&amp;utm_social-type=owned&amp;utm_source=twitter">https://www.vanityfair.com/hollywood/2020/09/09/robert-pattinson-the-batman-coronavirus?mbid=social_twitter&amp;utm_brand=vf&amp;utm_medium=social&amp;utm_social-type=owned&amp;utm_source=twitter</a>	<a href="https://www.vanityfair.com">vanityfair.com</a>	438
FAKE/HOAX	<a href="https://n.news.naver.com/entertain/now/article/108/00028882">https://n.news.naver.com/entertain/now/article/108/00028882</a>	<a href="https://n.news.naver.com">n.news.naver.</a>	406

	<a href="#">31</a>	<a href="#">com</a>	
CLICKBAIT	<a href="https://www.soompi.com/article/1385869wpp/pledis-entertainment-denies-rumors-that-nuests-minhyun-was-infected-with-coronavirus">https://www.soompi.com/article/1385869wpp/pledis-entertainment-denies-rumors-that-nuests-minhyun-was-infected-with-coronavirus</a>	<a href="#">soompi.com</a>	363
FAKE/HOAX	<a href="https://mcmnt.com/vatican-confirms-pope-francis-and-two-aides-test-positive-for-coronavirus/">https://mcmnt.com/vatican-confirms-pope-francis-and-two-aides-test-positive-for-coronavirus/</a>	<a href="#">mcmnt.com</a>	360
POLITICAL	<a href="https://news.chosun.com/site/data/html_dir/2020/02/28/2020022802911.html">https://news.chosun.com/site/data/html_dir/2020/02/28/2020022802911.html</a>	<a href="#">news.chosun.com</a>	360
CLICKBAIT	<a href="https://www.soompi.com/article/1380327wpp/more-events-postponed-or-cancelled-in-korea-and-around-asia-due-to-coronavirus-concerns">https://www.soompi.com/article/1380327wpp/more-events-postponed-or-cancelled-in-korea-and-around-asia-due-to-coronavirus-concerns</a>	<a href="#">soompi.com</a>	332
CLICKBAIT	<a href="https://www.mirror.co.uk/news/uk-news/coronavirus-experts-warn-people-stop-21629235">https://www.mirror.co.uk/news/uk-news/coronavirus-experts-warn-people-stop-21629235</a>	<a href="#">mirror.co.uk</a>	326
POLITICAL	<a href="https://gizmodo.com/anti-maskers-forced-to-dig-graves-for-covid-19-victims-1845046526?utm_campaign=Gizmodo&amp;utm_content=&amp;utm_medium=SocialMarketing&amp;utm_source=twitter">https://gizmodo.com/anti-maskers-forced-to-dig-graves-for-covid-19-victims-1845046526?utm_campaign=Gizmodo&amp;utm_content=&amp;utm_medium=SocialMarketing&amp;utm_source=twitter</a>	<a href="#">gizmodo.com</a>	284
FAKE/HOAX	<a href="https://n.news.naver.com/entertain/now/article/018/0004610638">https://n.news.naver.com/entertain/now/article/018/0004610638</a>	<a href="#">n.news.naver.com</a>	277

The list of top 10 unreliable sources is a balanced mix of fake, clickbait and political sources, with modest outreach. The top unreliable source, the only one with a comparable outreach to the top influencers, is a foreign tabloid newspaper.

**Policy implication:** at the moment there is not a key unreliable source to watch.

### Top 10 reliable news

Fact Type	URL	Domain	count
MSM	<a href="https://reut.rs/36kgc5q">https://reut.rs/36kgc5q</a>	<a href="#">reut.rs</a>	4226
MSM	<a href="https://www.forbes.com/sites/tarahaele/2020/02/29/no-you-do-not-need-face-masks-for-coronavirus-they-might-increase-your-infection-risk/amp/?__twitter_impression=true">https://www.forbes.com/sites/tarahaele/2020/02/29/no-you-do-not-need-face-masks-for-coronavirus-they-might-increase-your-infection-risk/amp/?__twitter_impression=true</a>	<a href="#">forbes.com</a>	3831
MSM	<a href="https://bbc.in/2s5acve">https://bbc.in/2s5acve</a>	<a href="#">bbc.in</a>	2432
MSM	<a href="https://bnonews.com/index.php/2020/02/the-latest-coronavirus-cases/">https://bnonews.com/index.php/2020/02/the-latest-coronavirus-cases/</a>	<a href="#">bnonews.com</a>	1887
MSM	<a href="https://foreignpolicy.com/2020/01/25/wuhan-coronavirus-safety-china/">https://foreignpolicy.com/2020/01/25/wuhan-coronavirus-safety-china/</a>	<a href="#">foreignpolicy.com</a>	1640

MSM	<a href="https://www.vanguardngr.com/2020/02/finally-coronavirus-enters-africa-as-egypt-confirms-case/?utm_source=dlvr.it&amp;utm_medium=twitter">https://www.vanguardngr.com/2020/02/finally-coronavirus-enters-africa-as-egypt-confirms-case/?utm_source=dlvr.it&amp;utm_medium=twitter</a>	<a href="https://www.vanguardngr.com">vanguardngr.com</a>	1278
MSM	<a href="http://www.astroawani.com/berita-dunia/vaksin-covid-19-mungkin-tidak-akan-ditemui-saintis-244223">http://www.astroawani.com/berita-dunia/vaksin-covid-19-mungkin-tidak-akan-ditemui-saintis-244223</a>	<a href="https://www.astroawani.com">astroawani.com</a>	1078
SCIENCE	<a href="https://wwwnc.cdc.gov/travel/notices/warning/coronavirus-indonesia">https://wwwnc.cdc.gov/travel/notices/warning/coronavirus-indonesia</a>	<a href="https://wwwnc.cdc.gov">wwwnc.cdc.gov</a>	927
MSM	<a href="http://news.sky.com/story/actor-antonio-banderas-tests-positive-for-coronavirus-12046536">http://news.sky.com/story/actor-antonio-banderas-tests-positive-for-coronavirus-12046536</a>	<a href="https://news.sky.com">news.sky.com</a>	862
MSM	<a href="https://www.reuters.com/article/us-health-coronavirus-indonesia-idUSKCN24J0DY?taid=5f12d638c3d9480001c44161&amp;utm_campaign=trueAnthem%3A+Trending+Content&amp;utm_medium=trueAnthem&amp;utm_source=twitter">https://www.reuters.com/article/us-health-coronavirus-indonesia-idUSKCN24J0DY?taid=5f12d638c3d9480001c44161&amp;utm_campaign=trueAnthem%3A+Trending+Content&amp;utm_medium=trueAnthem&amp;utm_source=twitter</a>	<a href="https://www.reuters.com">reuters.com</a>	851

The top reliable sources have a much bigger outreach than the unreliable one and include several foreign mainstream media sources.

**Policy implication:** the Indonesia public opinion is sensitive to authoritative foreign media sources. Promoting access to such sources and foreign language literacy may implicitly function as a stabilizer of infodemic risk.

## Policy brief

One should not undervalue the potential instability of what appears to be a substantially uncritical situation. Accurately reconstructing and monitoring the most active misinformation influencers and their possible networking is crucial to design countering strategies and to manage crises in a timely way. However, Indonesian public opinion responds to authoritative local institutional sources and foreign media. This is a factor of structural stabilization.

## Limitations

this analysis should be integrated by that on posts written in Bahasa Indonesia. It is possible that the risk profile related to posts in the local language may be different. In this case, a comparative analysis of the two risk profiles should be carried out.