

Diversity Impact on Vaccine Equity (DIVE) in Sri Lanka

November 2021

Research overview and context

- Minority Rights Group International commissioned Verité Research to monitor social media to track and understand content shared about Covid-19 vaccine confidence, uptake, and access across Tamil, Muslim, and Sinhala ethno-religious groups in Sri Lanka. Comprising 74.9% of the population, the Sinhala community forms the ethnic majority and Sinhala is considered their first language. The Tamil and Muslim ethno-religious minorities together comprise 24.8% of the population.¹ Tamil is considered to be the first language of the Tamil community as well as a majority of the Muslim community of Sri Lanka. English, a link language in Sri Lanka, is also used by 22% of Sri Lankans.²
- The findings of this study are specific to the social media monitoring conducted on Facebook, and Twitter for the period 1 January to 31 October 2021. The social media listening and social media monitoring tools (e.g., CrowdTangle) were used to extract data, based on a tried and tested set of keywords.
- For this report, a sample of n=1,276 Facebook comments and tweets (including replies to tweets) were analysed with respect to their sentiment on: (1) Covid-19 vaccine confidence, (2) reservations towards the vaccine, (3) access to vaccines, and (4) distrust in health and other government authorities regarding the administration and dissemination of information related to the vaccine.
- Facebook comments and tweets were selected for evaluation on the basis of two criteria: (1) evidence of sentiment relating to the factors mentioned above, and (2) ability to identify the ethnicity of the author of the comment/tweet. This report, therefore, limits its insights to the distribution of Facebook comments and tweets among Tamil, Muslim, and Sinhala social media users and is not representative of the communities as a whole.
- The sampling method also does not guarantee an unbiased representation of social media users. It is likely that those with higher levels of confidence were less likely to comment on posts and would therefore be under-represented in the sample.
- However, the analysis needs to assume only that the tendency to be active on social media and comment is not biased by the ethnicity of the user. In which case, the ethnic differences in the sentiments expressed in the sample can be evaluated to reflect differences in sentiment by ethnicity within the wider population.
- Sri Lanka commenced its Covid-19 vaccination drive on 29 January 2021.³ At the time of writing this report, according to official statistics, 84% of the population over 16 years of age had received two doses of the vaccine.⁴ Sri Lankan health authorities have also recently commenced administering the

1 Department of Census and Statistics, 'Census of Population and Housing 2012 - Final Report', available at <http://www.statistics.gov.lk/Population/StaticInformation/CPH2011/CensusPopulation-Housing2012-FinalReport> [last accessed 8 December 2021].

2 Ashani Abayasekara, 'Building a More English-Literate Sri Lanka: The Need to Combat Inequities', 23 April, 2018, available at <https://www.ips.lk/talkingeconomics/2018/04/23/building-a-more-english-literate-sri-lanka-the-need-to-combat-inequities/> [last accessed 8 December 2021].

3 State Intelligence Service, 'Covid-19 Vaccination Sri Lankan Approach', Presidential Secretariat of Sri Lanka, 24 August 2021, available at http://www.presidentsoffice.gov.lk/Documents/Concept%20Paper-COVID%2019_Vaccination-Sri_Lankan_Approach.pdf [last accessed 29 November 2021].

4 Official website for Sri Lanka's Operation Freedom Immunizing Sri Lanka, 'Vaccination Statistics' available at <https://covid19.gov.lk/vaccination-statistics.html> [last accessed 29 November 2021].

booster vaccine (third dose) to frontline workers, and to those aged 60 and above.⁵

Summary of key findings

1. **Concerns relating to Covid-19 vaccine confidence dominated online conversations across the sample of Tamil, Muslim, and Sinhala social media users while the degree to which these ethnic groups had concerns varied. Meanwhile, issues of access to vaccines, and distrust in authorities received marginal traction.**
 - Of the total sample comments and tweets analysed (n=1,276), 85% of the sample comments and tweets were related to conversations on Covid-19 vaccine confidence, 36% on access to vaccines, and 29% related to distrust in health and other government authorities.⁶
2. **In comparison to Sinhala social media users, Muslim and Tamil social media users are more likely to have low to no confidence in Covid-19 vaccines.**
3. **Doubts over vaccine safety dominated conversations among those with low confidence in the Covid-19 vaccine.**
4. **Of the sample, Muslim social media users expressed the most concern over the safety of Covid-19 vaccines.**
5. **Sinhala, Tamil, and Muslim social media users show more confidence in the Pfizer-BioNTech and/or Moderna vaccines than in the Sinopharm vaccine.**

Ethnicity is a statistically significant factor affecting the level of confidence in Covid-19 vaccines in Sri Lanka

- Of the sample Facebook comments and tweets (n = 1,081) assessed for Covid-19 vaccine confidence, only 28% expressed high confidence, and a little more than half expressed low to no confidence⁷ (48%) in the Covid-19 vaccine across the three ethnic groups monitored.⁸
- The Pearson's Chi-squared test was used to determine whether ethnicity is a statistically significant factor affecting confidence in the Covid-19 vaccine. The test results (p value = $1.212e-08$) indicated that there is strong evidence to suggest that the level of confidence in the vaccine is dependent on the ethnicity of the social media user.
- Both Muslim (49%) and Tamil (36%) social media users were more likely to have low confidence compared to Sinhala (24%) users. Thus, low confidence levels were higher among social media users belonging to ethnic minority communities, while a high level of vaccine confidence was more prevalent among social media users belonging to the majority Sinhala community (42%) (see Exhibit 1).
- Meanwhile, the three ethnic groups—Sinhala, Muslim, and Tamil—had similar distributions of comments, which expressed 'no confidence' in the Covid-19 vaccine.

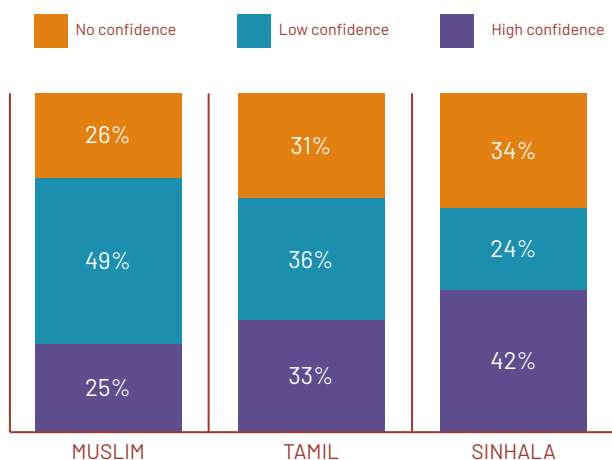
5 'Booster dose from November 01...', October 2021, Presidential Secretariat of Sri Lanka, available at <https://www.presidentsoffice.gov.lk/index.php/2021/10/22/booster-dose-from-november-01/> [last accessed 29 November 2021].

6 Note: A single comment and/or tweet could be assessed for more than one of the targeted areas of the study—i.e., for vaccine confidence, access to vaccines or distrust in authorities. Therefore, the total comments/tweets calculated within each category may exceed the total sample of comments and tweets.

7 Low confidence is defined as those who express some distrust or skepticism towards any of the Covid-19 vaccines available. No confidence is defined as those who express complete distrust towards the vaccine and refuses to take/receive any of the Covid-19 vaccines available.

8 Note: Comments and tweets that could not be assessed for confidence in vaccines were not considered in the above analysis.

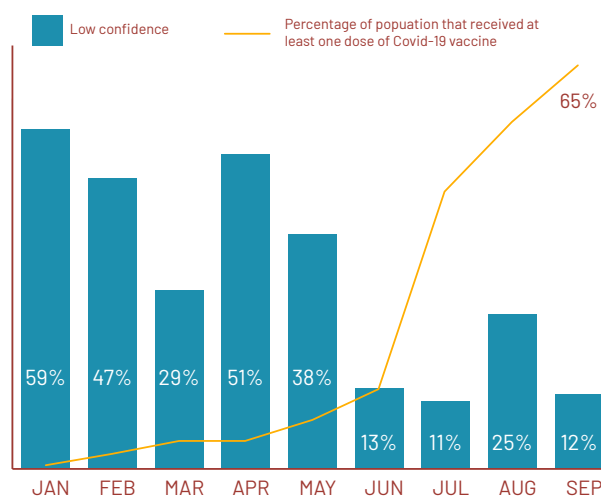
Exhibit 1: Breakdown of vaccine confidence based on ethnicity



Downward trend in low confidence, continuous trend in no confidence

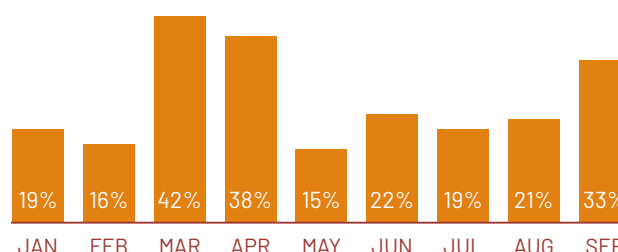
- Since the commencement of Sri Lanka’s Covid-19 vaccination drive in January 2021, there has been a decrease in ‘low confidence’ levels across social media users belonging to the three ethnic groups (see Exhibit 2). This finding was consistent with Sri Lanka’s accelerated rate of vaccination for the period ending September 2021.⁹
- Meanwhile, social media users that expressed ‘no confidence’ in the Covid-19 vaccine remained largely constant with some significant spikes in March, April and September 2021 (see Exhibit 3). Although Sri Lanka’s vaccination rollout commenced in January, 2021, vaccination of the public commenced largely in March 2021. Hence, it is probable that the spike seen in March-April corresponds to the new conversations that emerged around this milestone.¹⁰ Sri Lanka commenced vaccinating its 20-30 year-old population in September 2021 and the spike in September could correspond to higher levels of vaccine hesitancy observed in this age group.¹¹

Exhibit 2: Low confidence in Covid-19 vaccines across time January to September 2021



Note: Exhibit 2 also shows the percentage of the Sri Lankan population that received at least one dose of Covid-19 vaccine during January to September 2021 (Source: Official website of the Epidemiology Unit of the Ministry of Health, Sri Lanka; available at <https://www.epid.gov.lk/>)

Exhibit 3: No confidence in Covid-19 vaccines across time January to September 2021



Note: The study was conducted between 1 January and 31 October 2021. While vaccine rates have since increased, the results demonstrate the aforementioned trends in the level of confidence among social media users at that point in time. Furthermore, data for the month of October 2021 has been omitted due to its relatively small sample size.

9 See Verité Research’s Covid-19 Vaccination Scoreboard as of 27 September 2021 at <https://twitter.com/factchecklka/status/1442492284428189701?s=20>.
 10 Dilan Udayanga, ‘Getting Vaccinated against COVID-19 in Sri Lanka: All You Need to Know’, 8 April 2021, available at: <https://www.durdans.com/getting-vaccinated-against-covid-19-in-sri-lanka-all-you-need-to-know/> [last accessed 8 December 2021].
 11 Chanka Jayasinghe, ‘Sri Lanka health authorities plead with young people to get vaccinated’, 22 September 2021, available at: <https://economynext.com/sri-lanka-health-authorities-plead-with-young-people-to-get-vaccinated-86359/> [last accessed 29 November 2021].

Doubts over vaccine safety dominated conversations among those with low confidence in the Covid-19 vaccine

- ‘Low confidence’ levels were highest among the sample of social media users who expressed reservations over vaccine safety (64%) across the three ethnic groups (see Exhibit 4). Rapid development of vaccines, fear of side effects and fear of the vaccine composition fueled safety concerns over the Covid-19 vaccine across the ethnic groups (see relevant qualitative findings).
- Reservations on ‘doubt over vaccine safety’ was also dominant among those who expressed ‘no confidence’ in the Covid-19 vaccine (44%). However, those who showed ‘no confidence’ in the vaccine also appeared to be influenced more by their conspiracy related fears (20%), preference for traditional medicine (ayurvedic and home remedies) (12%), and trust in natural immunity (3%), unlike those with ‘low confidence’.

Relevant qualitative findings (quotes from comments/tweets):

“இந்த வக்சீனின் மூலப் பொருள் என்ன? இதன் பின்னணி என்ன? இதை போடுவதால் ஏற்படும் விளைவுகள் என்ன? இப்படி அறிவுள்ள சமூகமாக கேள்வி கேட்டு விளங்க வேண்டும். முட்டாள்களைப் போல எல்லாவற்றுக்கும் தலையாட்டிக் கொண்டு செல்ல கூடாது

[Translation: What is the source material of this vaccine? What is the background of this? What are the consequences of getting these? We as an intelligent society need to ask questions and understand it. We should not be like fools and nod our heads for everything.]

– Muslim Facebook user

“එන්නත තුළ ද ඇත්තේ වෙරස් එකක් මම නම් විදින්නේ නෑ

[Translation: The vaccine itself contains a virus; (hence) I for one will not take it]

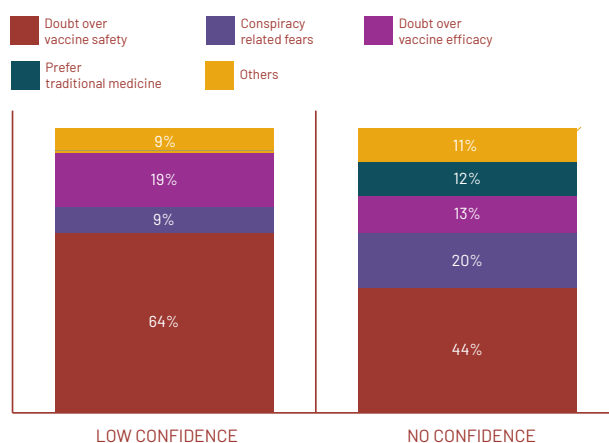
– Sinhalese Facebook user

“இப்பதானா ஆய்வு செய்றிங்கோ... முடிவு பண்ணிட்டுங்க சாகடிக்க

[Translation: Are you only researching now?... You have decided to kill/let us die]

– Tamil Facebook user

Exhibit 4: Reservations towards Covid-19 vaccines by ‘low’ or ‘no’ confidence level



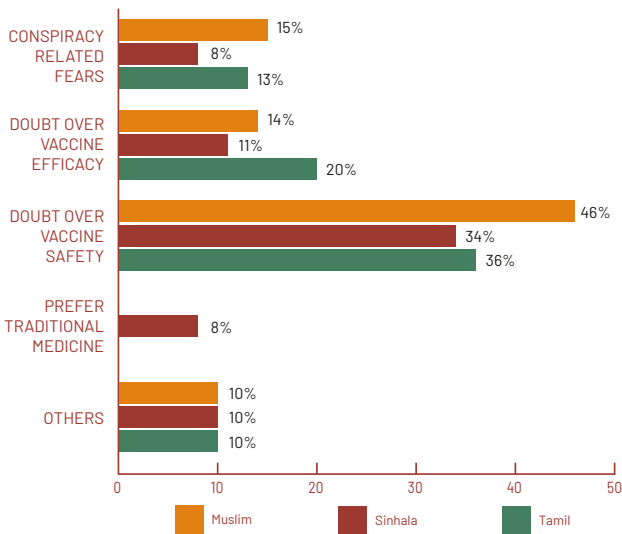
Note: The reservation type ‘Others’ for the ‘low confidence’ group also includes the reservation types ‘Unsafe for pregnant mothers’ and ‘Prefer traditional medicine’ as only less than 5% of the comments expressed these two reservations. The reservation type ‘Others’ under the ‘no confidence’ group includes the reservation types of ‘Affect fertility/sexual functioning’, ‘Religious reasons’ and ‘Trust in natural immunity’ as these reservations were expressed in less than 5% of the comments.

Muslim social media users expressed most concern over the safety of Covid-19 vaccines

- The distribution of comments and tweets expressing reservations towards the Covid-19 vaccine are relatively similar among the three ethnic groups. However, Muslim social media users expressed the most doubt over vaccine safety (46%) in proportion to Tamil (36%) and Sinhala (34%) social media users (see Exhibit 5).

- Notably, Sinhala social media users advocated the most for using traditional medicine (ayurvedic and home remedies) instead of obtaining the Covid-19 vaccine (see Exhibit 5). Similar conversations were absent among Tamil social media users despite the tendency to use traditional folk medicinal treatments within their culture.

Exhibit 5: Reservations towards Covid-19 vaccines by ethnicity



Note: The category 'Others' includes the categories of 'Unsafe for pregnant mothers', 'Affect fertility/sexual functioning', 'Religious reasons' and 'Trust in natural immunity' as only 2% of the comments or less, expressed these reservations. Additionally, the preference for Pfizer over Sinopharm was also evaluated as a category under reservations. As such, 18% of the comments by Muslim social media users, 20% of the comments by Tamil social media users and 29% of the comments by Sinhala social media users expressed a preference for Pfizer over Sinopharm. However, these values have not been included in Exhibit 5 as they are analysed separately under the section on 'selective confidence/preference'.

Relevant qualitative findings (quotes from comments/tweets):

“Lab rats! 🐭 Anyone know about the side effects of the vaccine after few years later? 🧐🖋️
 – Muslim Facebook user

“මම නම් විදිදෙ නෑ වදින්නේ නෑ මට කොරොනා නැදිලා අදට දවස් 12 යි කිසිම අමාරුවක් නෑ සිංහල බෙහෙත් බිච්චා හෙමිබිරිස්සාවක් නැදුණු තරමට වත් අමාරුවක් නෑ තවම ගඳ සුවඳ දැනෙන්නේ නෑ චීව්චරයි
 [Translation: I didn't get the vaccine and will never get the vaccine. It's 12 days now since I got Covid, and I have no complications. I used Ayurvedic meds and didn't even feel as ill as I would have had I got a cold. I still can't sense any smells, but that's it.]
 – Sinhalese Facebook user

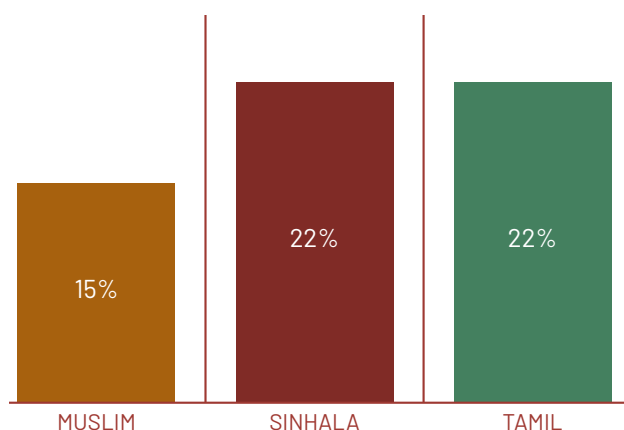
“இந்த தடுப்பூசி நல்லதோ கெட்டதோ இனி தெரியவரும். எலிக்கு பாசோதித்த மாதிரி போட்டாச்சு
 [Translation: Whether the vaccine is good or bad will be known in the future. We were vaccinated like being tested on rats.]
 – Tamil Facebook user

Sinhala, Tamil, and Muslim social media users show more preference/confidence in Pfizer-BioNTech and/or Moderna vaccines than in the Sinopharm vaccine

- Although the distribution of comments and tweets expressing 'selective preference/confidence'¹² are relatively similar among the three ethnic groups (see Exhibit 6), Sinhala and Tamil social media users appeared to feel more strongly in comparison to Muslim social media users on their preferred brand of Covid-19 vaccine.

12 Selective preference/confidence is defined as those who express some willingness to take/receive the Covid-19 vaccine, however, has a preference over which vaccine they are willing to take/receive.

Exhibit 6: Breakdown of selective preference/confidence in Pfizer and/or Moderna vaccines by ethnicity



- Social media data indicates that 'selective preference/confidence' levels are highest among users who preferred Pfizer and/or Moderna vaccines produced by US companies over the China-manufactured Sinopharm vaccine (73%), which was widely administered in Sri Lanka. This was evident across the ethnic groups. Accordingly, of the comments that expressed 'selective confidence/preference', 74% of Muslim social media users, 72% of Sinhala social media users and 55% of Tamil social media users indicated their preference for Pfizer and/or Moderna over Sinopharm. (Note: The remaining 27% of comments that expressed 'selective preference/confidence' indicated reasons other than a preference for Pfizer and/or Moderna vaccines).
- Overall, the refusal to accept and/or lack of trust in the safety and efficacy of the Sinopharm vaccine stemmed from three main factors: (1) fears over the quality of the Chinese manufactured vaccine, (2) Sinopharm's low rate of approval for global travel, and (3) China's growing economic and political presence in Sri Lanka (see relevant qualitative findings).

Relevant qualitative findings (quotes from comments/tweets):

“#Pfizer is only for VIP? Is (it) possible to vaccinate the public? Would prefer to have #Pfizer will it be able to vaccinate?

- Muslim Twitter user

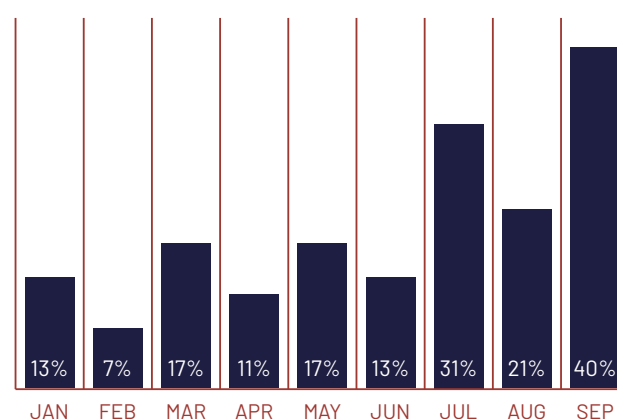
“බාල බඩු වල නිලක් ඇතේ කිව්වේ කට කහනවට නෙලෙයි. චීනේට ඔනේ වැඩක් නැති බෙහෙත් අපිට දිලා මිනිස්සු මරලා රට අස්ථාවර කරලා ණය වලින්ම අපේ රට අල්ල ගන්න [Translation: What China wants to do is to take over the country with debt by giving us useless meds to destabilise the country by killing people]

- Sinhalese Facebook user

“சீனாக்காரன் எங்கடா உங்களுக்கு மருந்து தந்தான் அது வெறும் மழைத்தண்ணிதான் [Translation: When did the Chinese ever give you medicine, that (what they gave as vaccines) is just rainwater]

- Tamil Facebook user

Exhibit 7: Selective preference/confidence in Pfizer and/or Moderna vaccines across time January to September 2021



Note: The study was conducted between 1 January and 31 October 2021. While vaccine rates have since increased, the results demonstrate the aforementioned trends in the level of confidence among social media users at that point in time. Furthermore, data for the month of October 2021 has been omitted due to its relatively small sample size.

- Exhibit 7 points to an upward trend in the level of selective preference/confidence in Pfizer and/or Moderna vaccines among social media users during the period under review. Notably, this finding coincides with Sri Lankan health authorities' decision to commence Covid-19 vaccination among those aged 20 and above.¹³ Sri Lankan health authorities have expressed concern that the youth in Sri Lanka (across ethnic groups) tend to show a preference for the Pfizer-BioNTech vaccine due to a belief that it has the highest efficacy.¹⁴

Acknowledgments

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- 13 'Vaccination of children aged 18 and 19 from October 21', Presidential Secretariat of Sri Lanka, September 2021, available at: <https://www.presidentsoffice.gov.lk/index.php/2021/10/08/vaccination-of-children-aged-18-and-19-from-october-21/> [last accessed 29 November 2021].
- 14 Chanka Jayasinghe, 'Sri Lanka health authorities pled with young people to get vaccinated', 22 September 2021, available at: <https://economynext.com/sri-lanka-health-authorities-plead-with-young-people-to-get-vaccinated-86359/> [last accessed 29 November 2021].