

Misunderstood Information: Measuring the Effect of Socioeconomic Inequality on Vaccine Hesitancy, A Malaysian Case Study

Problem: What are the reasons for vaccine hesitancies in some Malaysian states?

Vaccine rates can be used to measure “trust” in public health and healthcare systems. Vaccines are public goods and vaccine hesitancy pose an interesting manifestation of the free rider problem.

Hypothesis: There is a connection between socioeconomic inequality and vaccine hesitancy within the Malaysian context. Unequal access to healthcare might be a factor behind mistrust of health and scientific professionals

Four paradigms of Malaysian public health: Colonial (late 19th century - 1957), pre-New Economic Program (NEP) (1957- 1969), NEP (1969-1980s), privatization and corporatization (1980s-present)

Current observation and process:

1. Collected data from the Ministry of Health and demographic census from Dept of Statistics
2. Performed exploratory data analysis
3. Districts that have low vaccination rates are not necessarily the poorest, but those that have wide ethnic disparities in vaccine uptake

Next steps:

1. Finalize candidate statistical measure of vaccine inequality, either Gini (Lorenz curve) or generalized entropy based (Atkinson or Theil).
2. Identify all relevant variables (age, ethnicity, gender, death rates, etc.)
3. OLS pipeline: variable selection -> perform OLS -> regression diagnostics

Appendix: Data Results

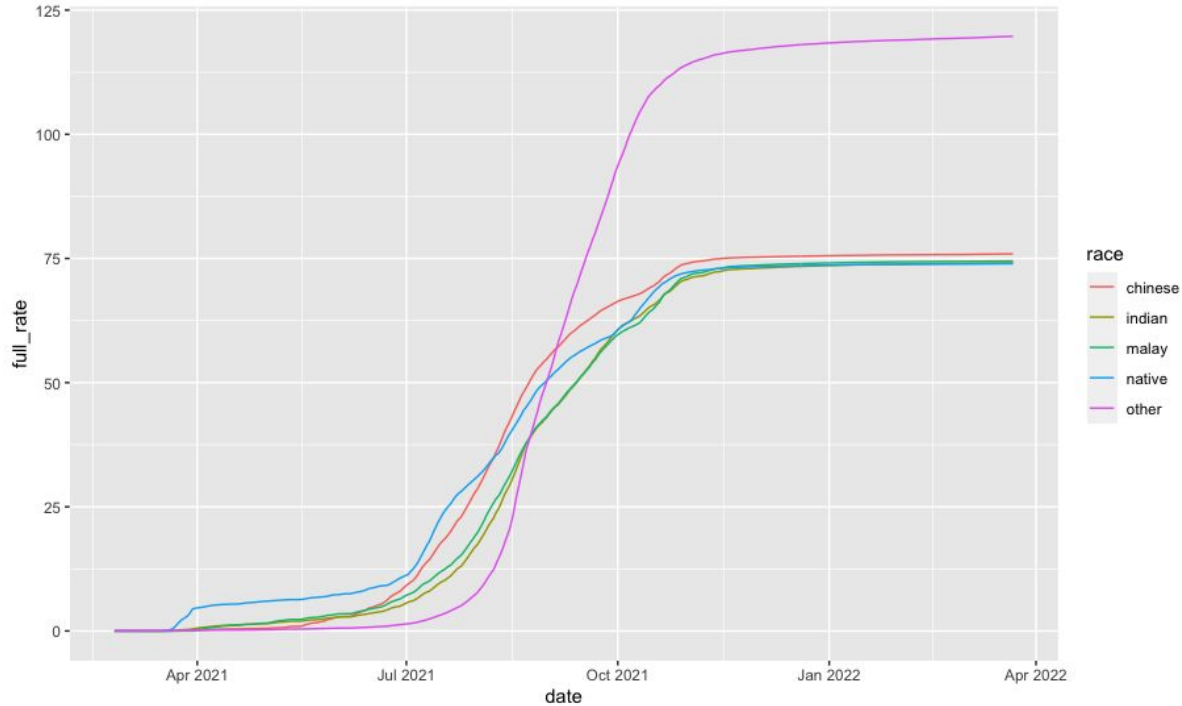


Diagram 1: National Full Vaccination Rate by Ethnicity

Appendix: Data Results

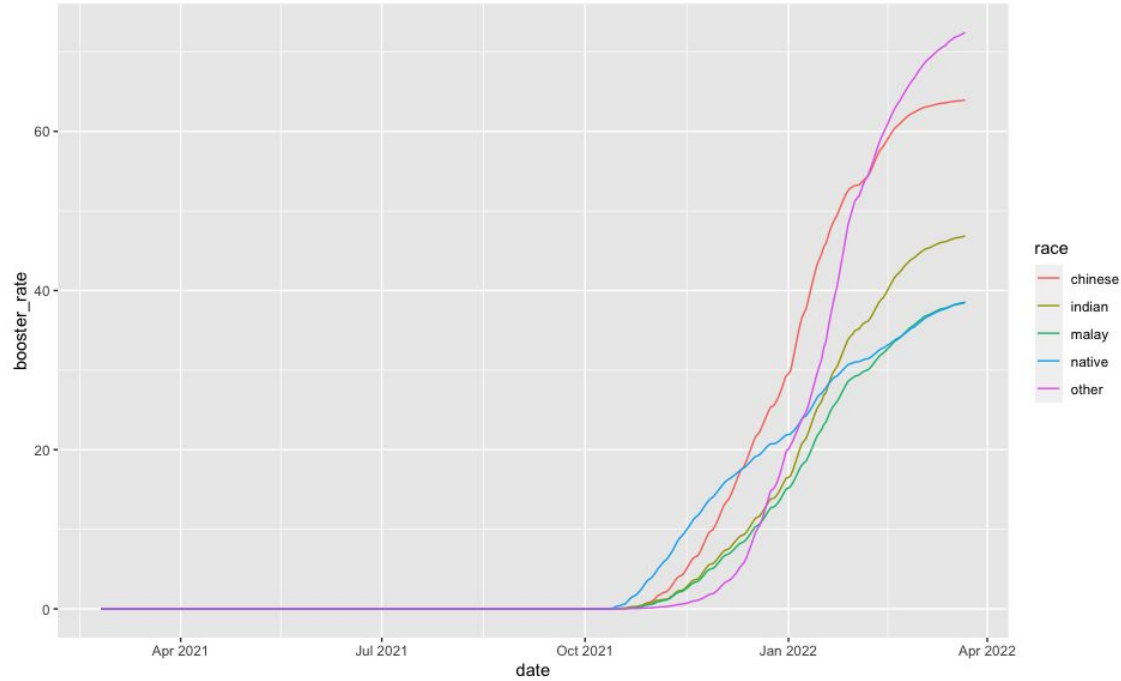


Diagram 2: Booster rates by Ethnicity

Appendix: Data Results

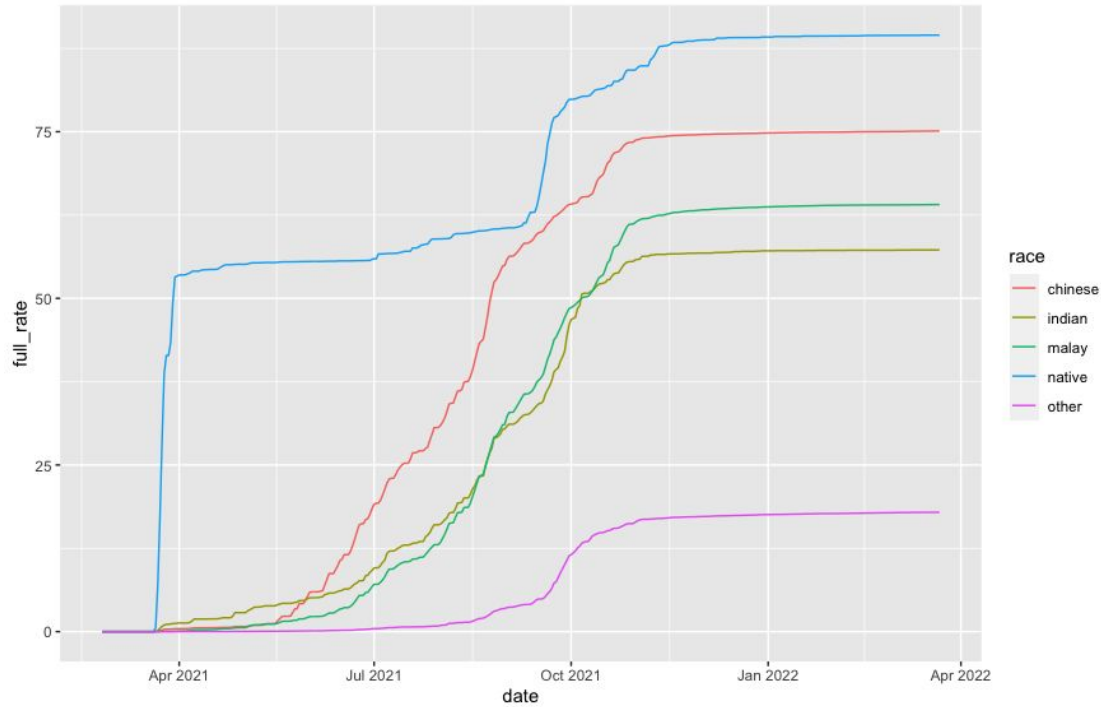


Diagram 3: Full Vaccination rate by Ethnicity in Kelantan (lowest vaccination rate)

Appendix: Data Results

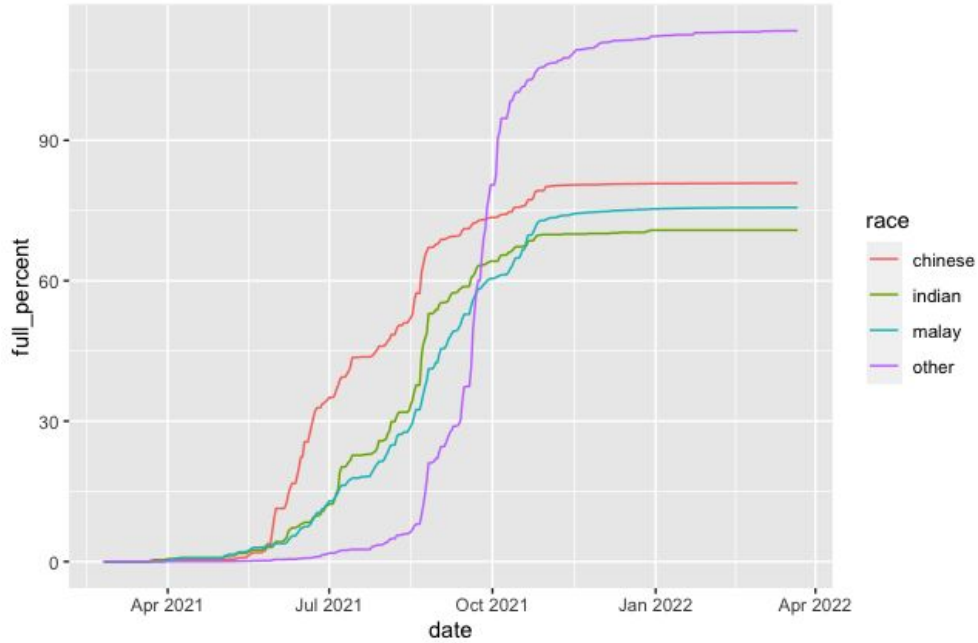


Diagram 4: Best Performing District in Kelantan (Kuala Krai)

Appendix: Data Results

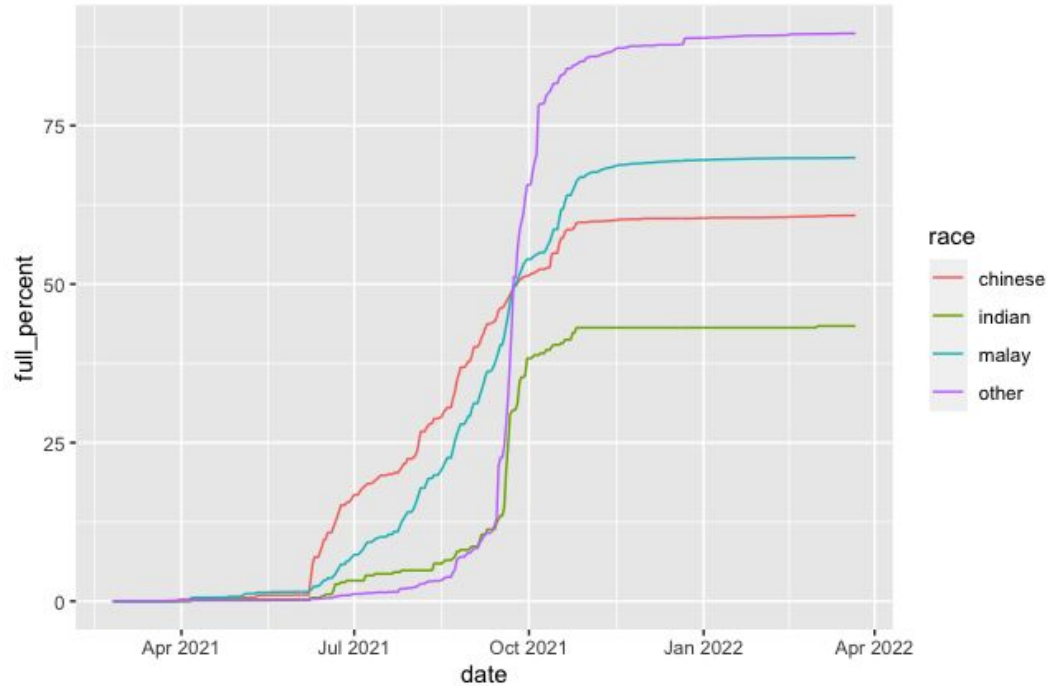


Diagram 5: Worst Performing District in Kelantan (Tanah Merah)

Appendix: Data Results

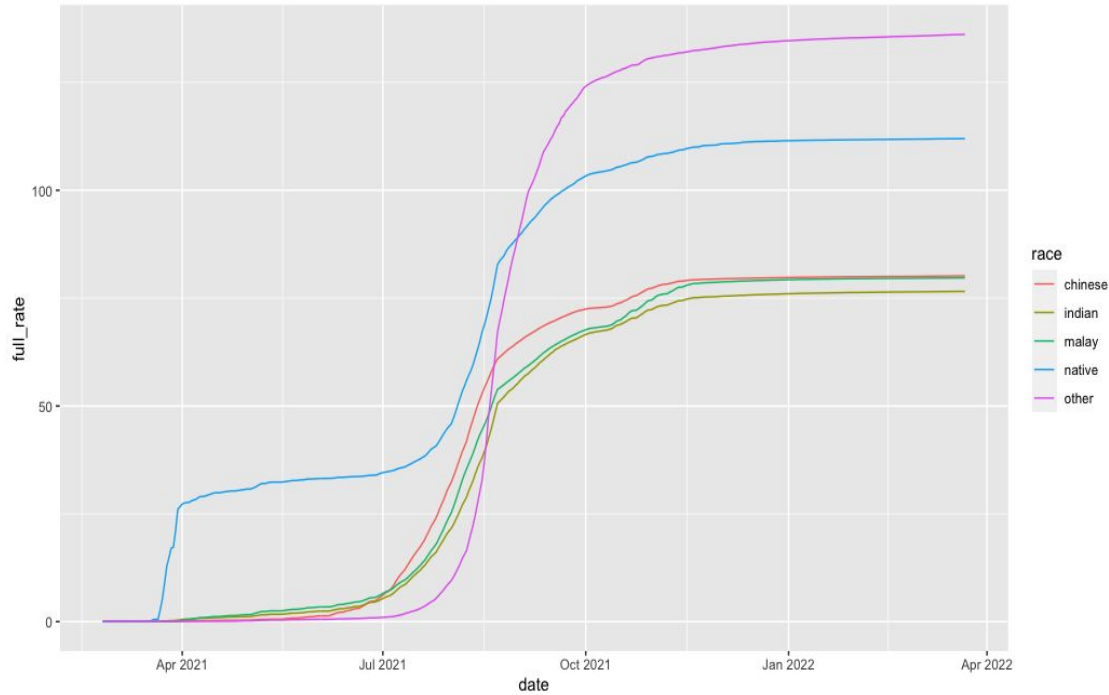


Diagram 6: Full Vaccination Rate by Ethnicity, Klang Valley (highest vaccination rate)

Appendix: Data Results

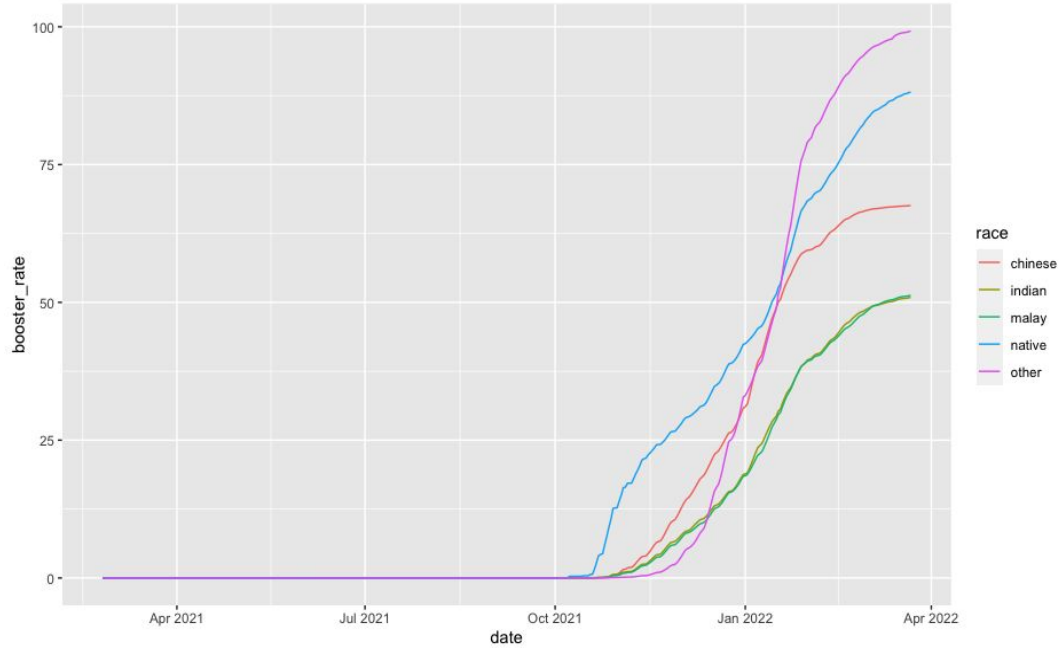


Diagram 7: Booster Rates for Klang Valley by Ethnicity