**COVID-19 Policy Implementation Report- Team 3**

**Introduction**

We have been tasked with providing advice to Caladan, a midsized 3.2 million population country, in preventing the spread of Covid-19. We have been given the two policies of no income support and full closure of schools as well as further analysis.

**Data**

Our data came from three sources and was compiled together in parquet files based on likeness. We then cleaned and organized the data before moving it to Synapse to create data tables which we could actively query on. At this point we finally moved the data into Power BI and created our three-level snowflake schema.

**Policy Implementation #1- School Closure**

The scale for school closures ranged from zero (no closure) to three (complete shutdown). We charted these closures against the daily variation in COVID-19 cases worldwide. In April 2020, we observed a gradual increase in case numbers, coinciding with an uptick in school shutdowns. In most countries, the closure level remained at three, but in August 2020, when schools reopened, there was a significant surge in cases, jumping from 10,000 at the time of closure to 200,000. Our analysis suggests that closing schools is a critical preventive measure in curbing the spread of COVID-19.

**Policy Implementation #2- No Income Support**

We plotted income support against the change in confirmed cases but found there to be no relationship in any income support level. The dollar amount stayed pretty constant and increased around the same time as the school closures but even when covid cases skyrocketed the income support did not fluctuate.

**Investment in Healthcare and Vaccines**

We grouped these together under the same umbrella of an overall investment in the country’s health system. First, an investment in the healthcare system demonstrated that as a country increased their spending, their death toll decreased. For example, the UK spent about 400 dollars per death (which accounts to a little over one day in a hospital bed) whereas New Zealand spent about $36,000 per death with significantly less deaths. Next, the investment in vaccines isn’t nearly as positive as the healthcare system but still provides help. Japan for example, spent about $18 million on vaccines and had about a fifth of the cases per capita as Russia who spent barely $700 thousand.

**Number of Borders and Temperature**

We next looked into the number of land borders a country has and found there to be a direct positive relationship between the number of borders and the amount of covid cases. This paired with the also direct relationship in increasing travel controls illustrated the necessity to close off borders and reduce movement. Second, the average temperature appears to have no relationship and the line of best fit is almost horizontal, but once the island countries are removed then it becomes another direct relationship. Although a lot of these are out of the control of Caladan we recommend increasing spending on healthcare and decreasing the travel in and out of the country to reduce the effects of Covid-19.