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Data Analytics

Report

The dataframe did have a default index with column names and numbers for each row. After filtering the data to Gilbrator, the count for all four columns, death, cases, recovered and hospitalized were the same, 632. The maximum amount of deaths was 97.000000 deaths out of 5727.000000 cases in total. The maximum recovered was 4670.000000 and the maximum hospitalized was 4907.000000. This shows that almost all that were hospitalized were able to survive. There was some missing data for the United Kingdom. It was from the hospitalized and recovered columns that there was data missing. There was something unusual about the filtered data, it showed that when hospitalization was high, recovery was 0. This was a bit concerning because usually a high hospitalization rate would be accompanied by a high recovery rate as well. However, when I took a look at the descriptive statistics, overall the recovery was a little less than the hospitalization. As shown in the graph, after 4/1/21, even though cases persisted. This could be because, after the peak at 4/1/21, the covid cases did not persist to increase at an increasing rate. The peak vaccination was between 22/3/21 and 22/7/21. This is because people usually take the booster dose 3 months after the first dose. Therefore, between march and September all three doses were administered and therefore there was a peak at that time.

The province/state that has the highest number of individuals who received a first dose but not the second dose is in the United Kingdom (Isle of Man) with a difference of 82541. The number of first doses are 94038, whereas the number of second doses are 11497. Therefore, in total there are only 11497 people who are vaccinated. The smallest number of second doses are in the Province/State- Saint Helena, Ascension and Tristan da Cunha. On the other hand Gilbrater has the highest number of second doses. However, the population of Saint Helena, Ascension and Tristan da Cunha is 5,661. On the other hand, the population of Gibraltar is 33,691. The population of Gibraltar is almost 6 times bigger

than Saint Helena, Ascension and Tristan da Cunha. Therefore, Gibraltar's vaccination rate is also higher. More importantly the difference between the first and second dose is almost the same as 12 percent of those that have taken the first dose also took the second dose for both provinces during the date 2021-03-20. After looking at first and second doses in total after 3 months, the total number of people taking second doses exceeded that of the total number of people taking first doses. Therefore, rather than province driving the difference between first and second dose it is the timing.

March is probably when the first doses were rolled out, and since then the population would have to wait a month for the second dose and 3 months for the booster. Therefore, I looked at the differences in provinces on the date 2021-07-20. Around 24 percent of both Gibraltar and Saint Helena, Ascension and Tristan da Cunha's population that received the first dose had been vaccinated. The percentage had doubled because in July more people were eligible to get the second or third dose as the vaccine rollout for everyone would have started in March. In fact, the differences among all states on the date 2021-07-20 demonstrated that there were more people taking second doses at this time as the rollout for the first doses happened in March. In addition to this, I also looked at recovered and vaccinated people over time (months) and it seemed like as vaccination increased so did the number of recovered people. Therefore, the campaign should be determined based on the state with the lowest recovered people.

I was not able to aggregate the months but I was able to select certain key dates and use that to create a line graph. I created barplots for the vaccination, deaths and hospitalization for the region. It seems like even the barplots show that Gibraltar has the highest amount of deaths, hospitalization and vaccination. Therefore, it is the population that is the driving force behind the number of deaths, hospitalization and vaccination. On the other hand, among the states that had the highest recovery is the Channel Islands and Gibraltar. Despite having a high number of people being hospitalized in Montserrat, the total

number of people that recovered according to the data is 6376, but the total hospitalized was 597486. The recovery by Province/State bar plots give valuable insight on whether hospitalization has been successful in helping patients recover. It seems like certain regions are better equipped in handling the Pandemic than other States. Despite having a larger population, Gilbarator seems to have the highest recovery rate as well. This means that it was not a lack of institutional resources that led to the highest deaths and hospitalization but its population size. Therefore, these visualizations can help the government determine that they should decide based on recoveries as opposed to deaths over time or regions with smaller second doses. They show that across provinces and states deaths, hospitalization and deaths have similar patterns, but recovery does not. To address the underlying problems in states like Montserrat. They should look at the recovery by regions instead of deaths over time, or vaccination by region.

Out of the 3960 rows 2986 rows had sources that were from twitter. Therefore, nearly 75 percent of social media exposure came from twitter. There were only 25 tweets about vaccination. I also included a boxplot to demonstrate the count of retweets for the phrase's coronavirus and vaccination. There was only one tweet that had 1565 retweets and most of the other tweets were not retweeted. Around 67 percent of the tweets that were about Covid were from Twitter (230/340). Posts made with the word Vaccination were sourced from Twitter. The count plots show which device was used to access the source as well. In conclusion, there seems to be quite a bit of awareness amongst twitter users.