



COVID VACCINATION 2021

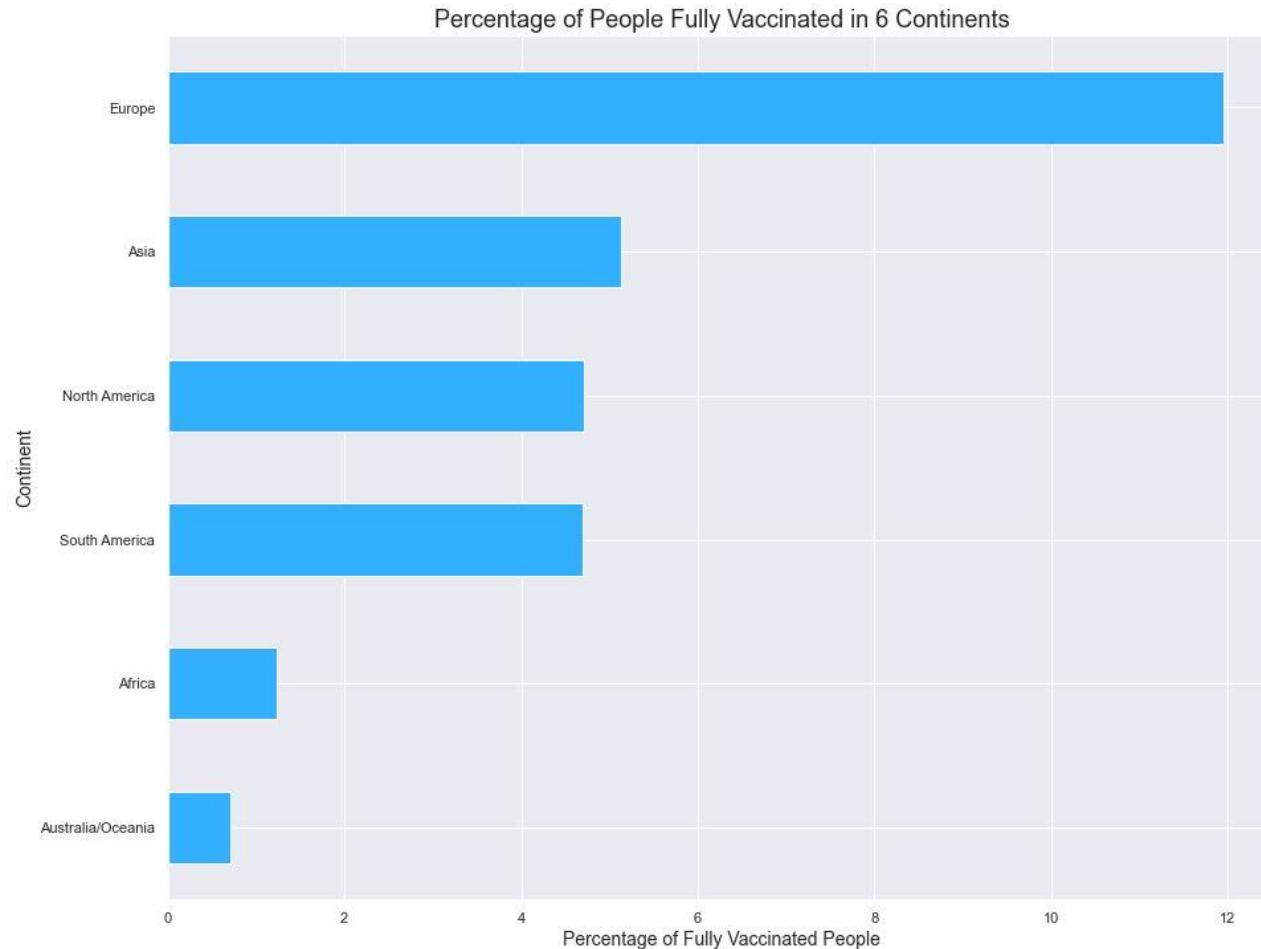
Dataset source:

<https://www.kaggle.com/gpreda/covid-world-vaccination-progress>

Kmeans Classifier (unsupervised learning)

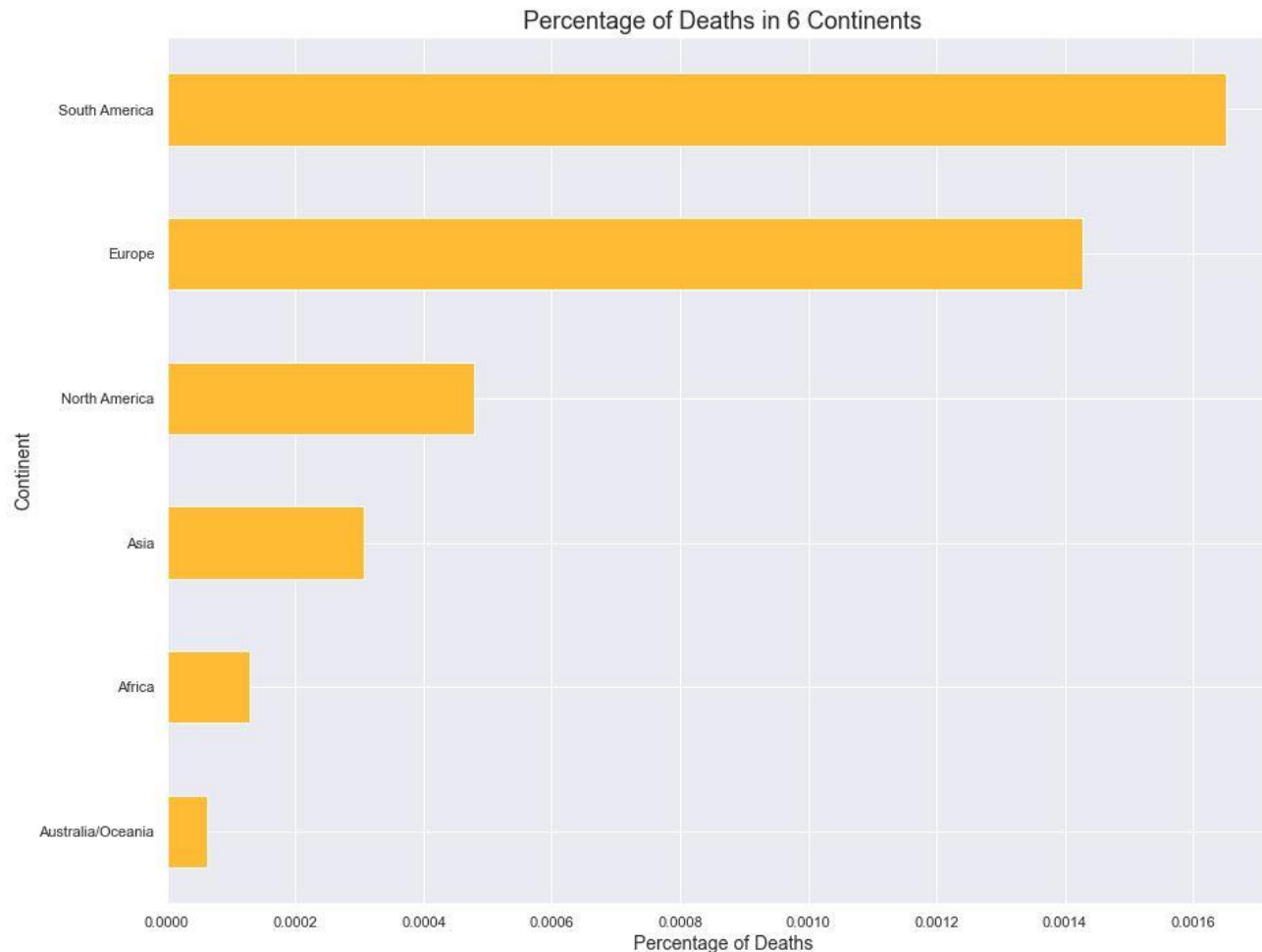
HOW IS THE PROGRESS OF THE VACCINATION CAMPAIGN?

WHICH COUNTRY SHOULD I AVOID?



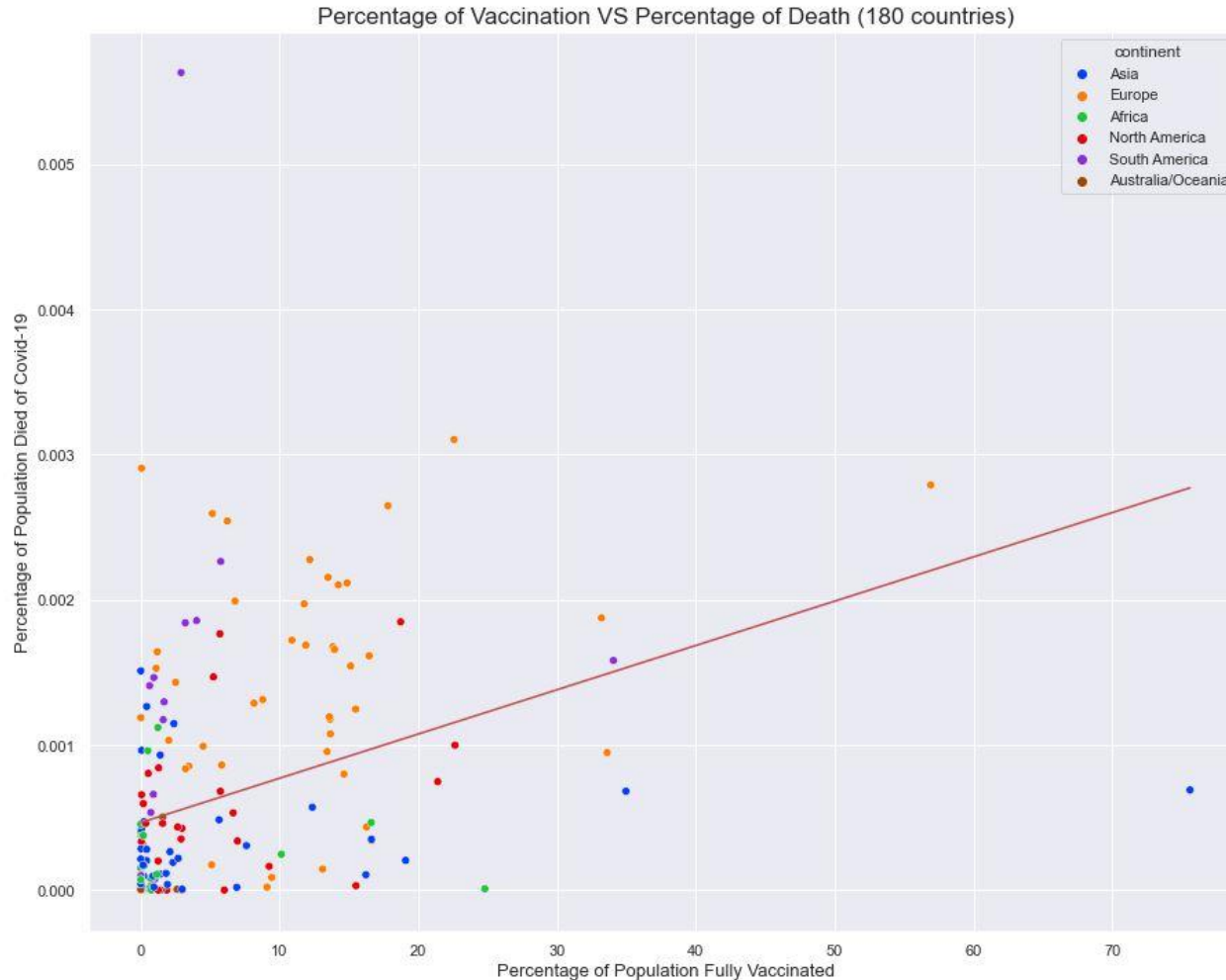
- Europe is vaccinated 7 times over.
- Asia is 5 times.
- North and South America is more than 4 times over.
- Africa, Australia and Oceania is around 1 time or less.
- The vaccination campaign is a success globally.
- But I should avoid Africa and Australia for the time being.

ARE WE OVER REACTING TO THE PANDEMIC ?



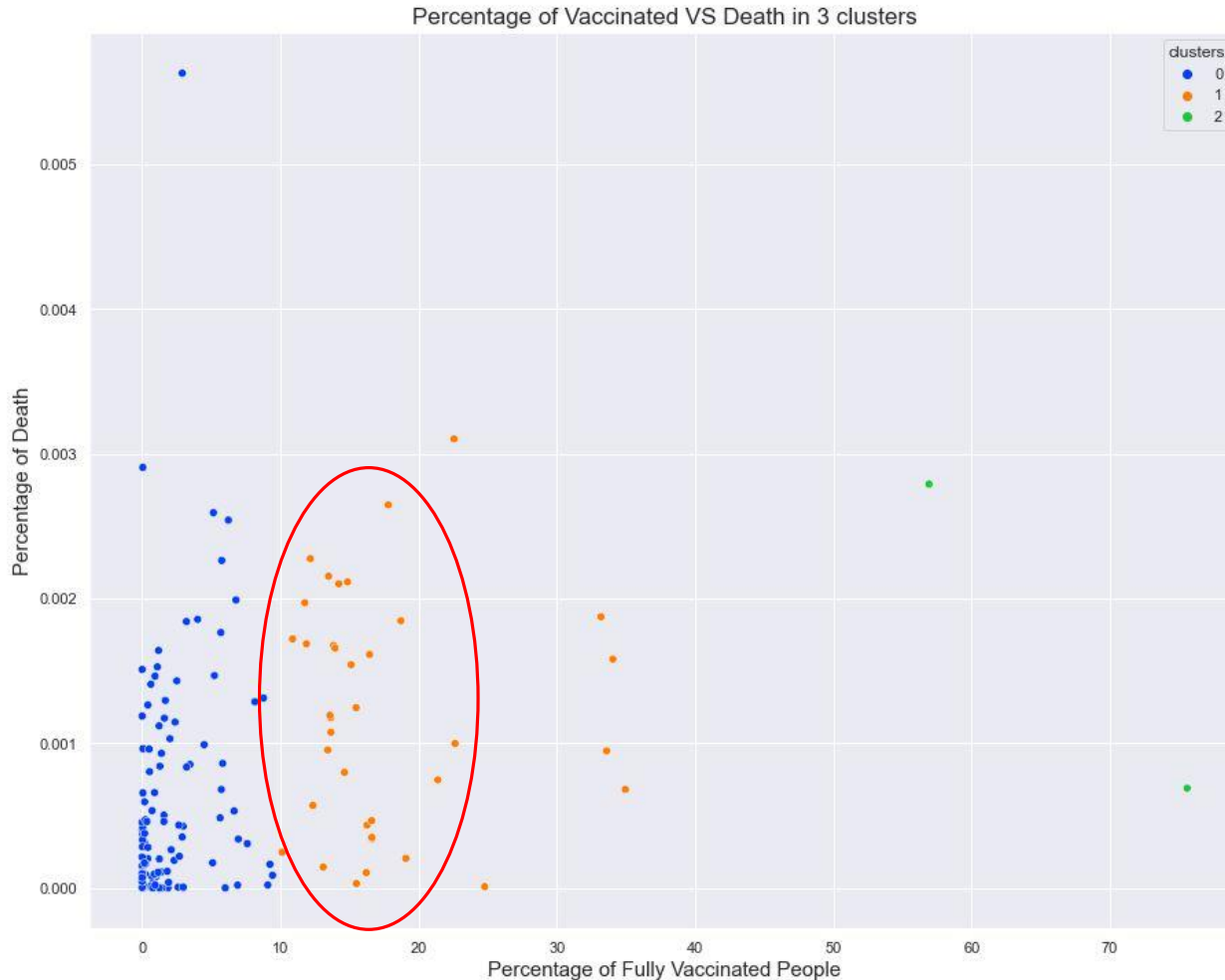
- The death rate in South America is the most however only 2 out of very 1000 people.
 - Follow by Europe despite high vaccination rates.
 - Australia is 3.5 out of every 100,000 people
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- No big deal in Australia. I think it is pretty safe to go there.
 - Could it be the global vaccination drive is working?

DOES VACCINATION REALLY WORK ?



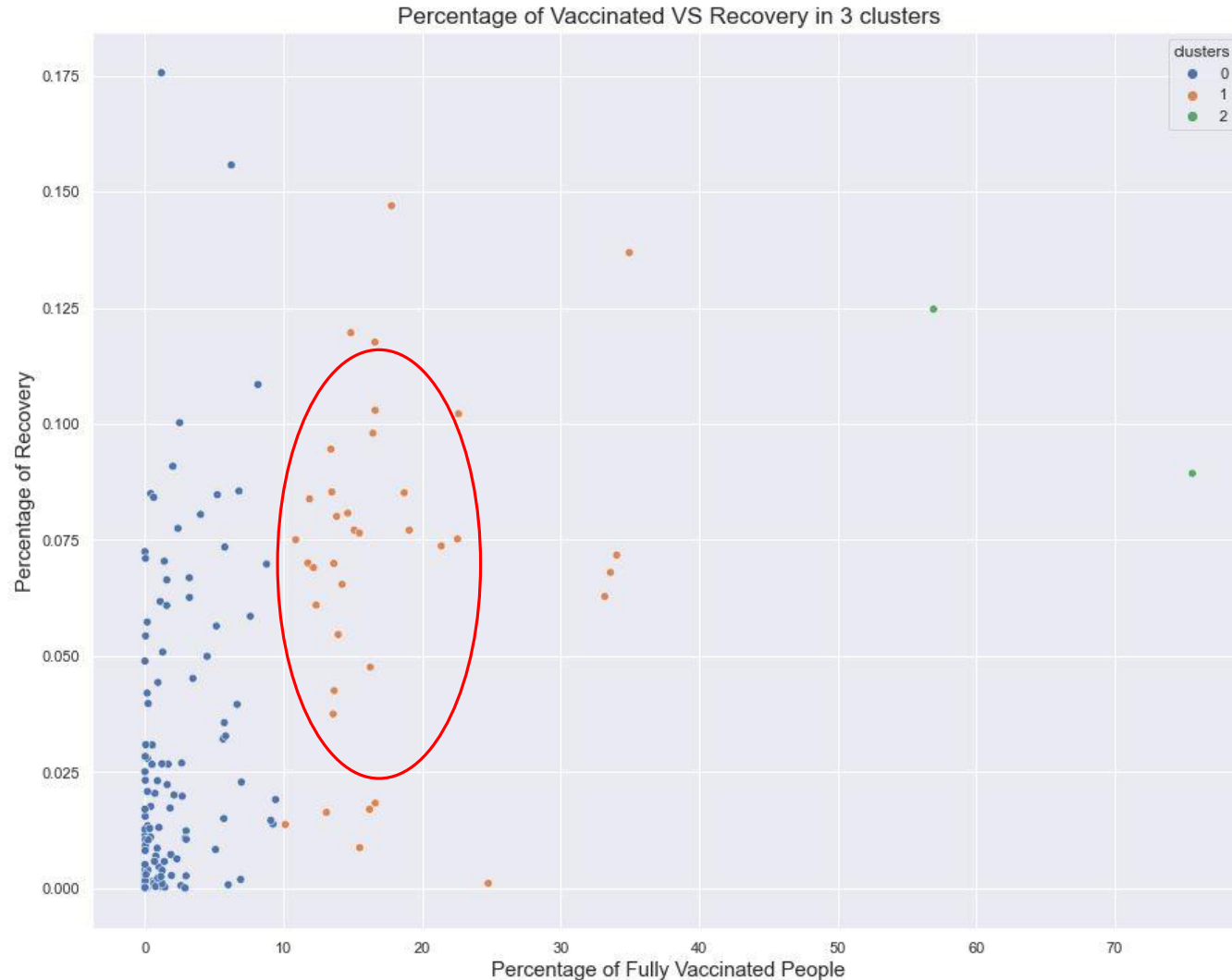
- Looks like South America is the most vaccinated.
- Follow by Europe represented by yellow dots.
- However death rates remain relatively high in Europe.
- Regression also indicates that as **vaccination increases, death also increase.**
- Can we look deeper?

ON A CLOSER LOOK, WE CAN SEE 3 GROUPS OF COUNTRIES WITH SIMILAR CHARACTERISTICS.....



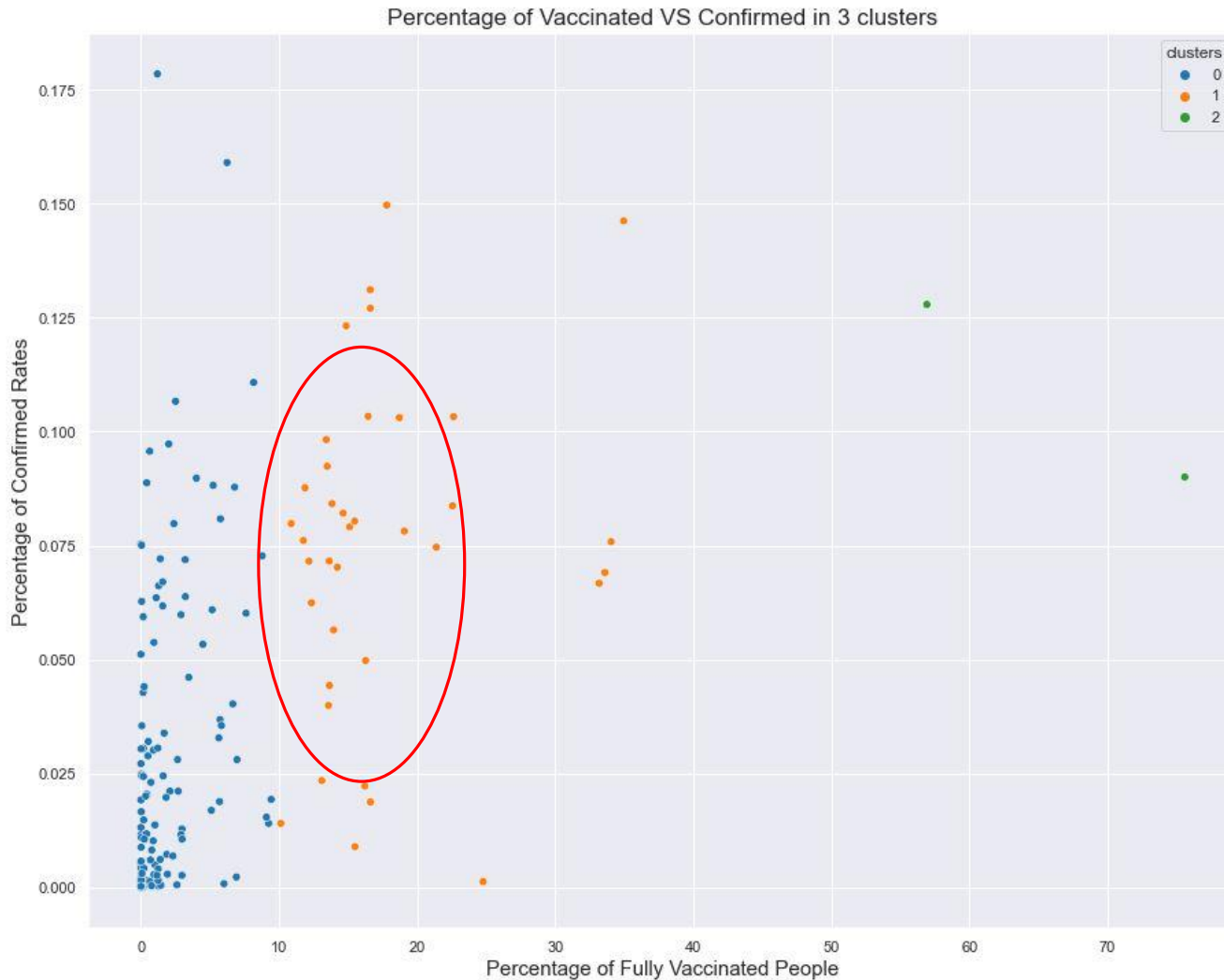
- Let's look at the yellow group (red circle).
- Since vaccination rates for yellow are higher than the blue, death rates for the yellow should be lower. Isn't it? Or worst case, there should not be any difference between the 2.
- However average death rates for the yellow has been significantly higher than blue group by 7 points. This is done by statistical calculations.
- This shows that vaccination **alone** has not succeeded in suppressing death rates.
- What about recovery rates for who are vaccinated?

IF I AM VACCINATED, WILL I RECOVER FASTER SHOULD I BE INFECTED?



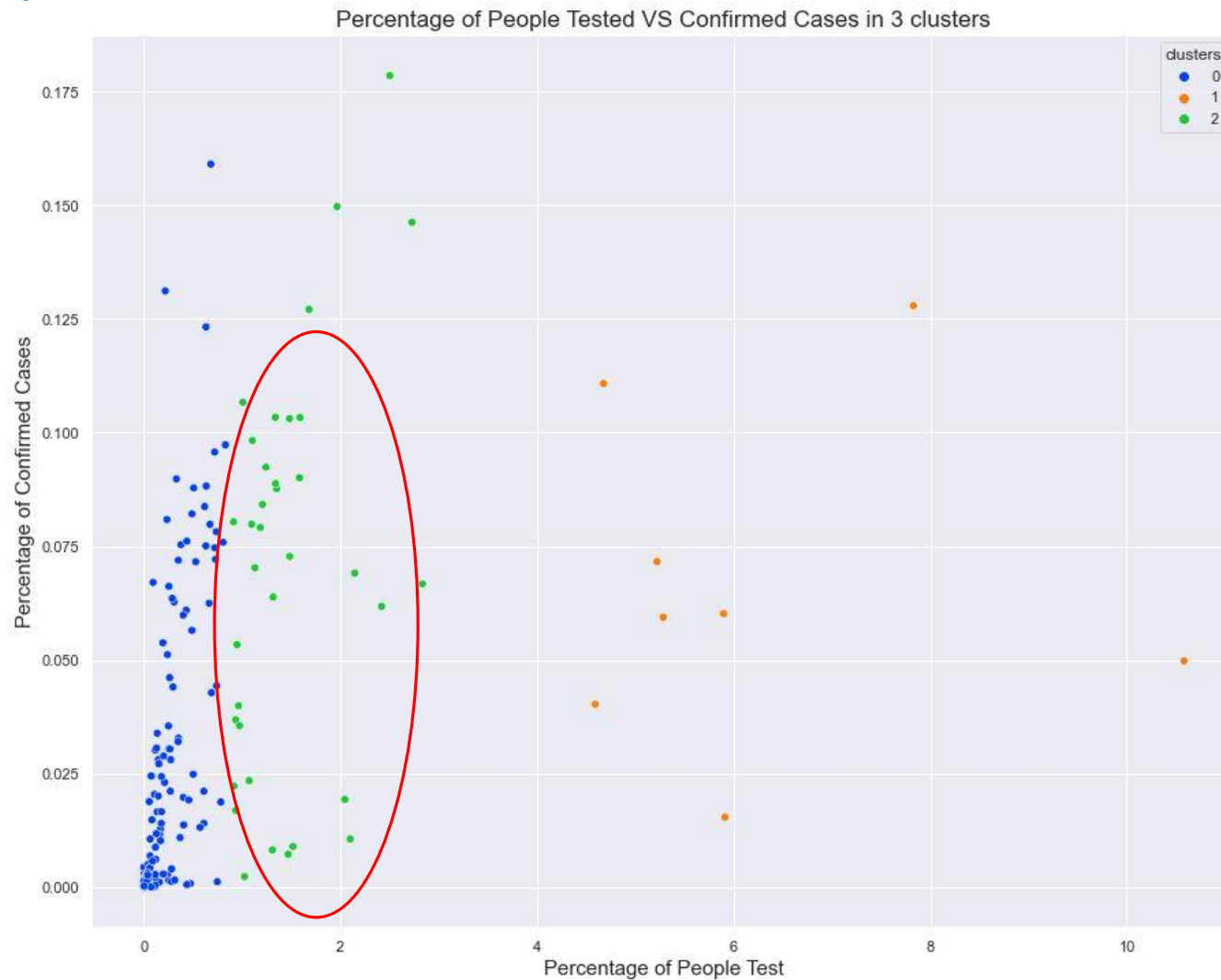
- Let's look at the yellow group again (red circle).
- Since vaccination rates for the yellow are higher than the blue, are the recovery rates higher than the blue?
- Yes indeed!!!
- This shows that vaccination has resulted in higher recovery rates.
- But does vaccination prevent me from being infected by covid-19 virus?

IF I AM VACCINATED, WILL I STILL BE INFECTED AGAIN?



- Let's look at the yellow group again (red circle).
- Since vaccination rates for yellow are higher than the blue, is percentage of confirmed cases (for the yellow) higher than the blue?.
- Yes it is.
- This shows that vaccination has resulted in higher percentage of confirmed cases in the population.
- In this case, how can we slow down infections? Will increase in testing the population for infections decrease the infection rates, thus death rates?

WILL IT HELP IF WE INCREASE TESTING OF THE POPULATION?



- Let's look at the green group again (red circle).
- Since there are significantly more people being tested, has this resulted in lower percentage of confirmed cases?
- The answer is no.
- This shows that extensive testing might not result in less confirmed cases.

FINDINGS & CONCLUSION

Findings:

More tests does not help reduce infection rates

Vaccination alone does not help to reduce covid deaths

Vaccination results in higher recovery rates of covid patients

Vaccination alone does not help to slow down new infections

Conclusion:

Vaccination has to be used to compliment other measures to curb infections and reduce covid deaths, but cannot relied as an only measure. However vaccination will result in higher recovery rates of the patients who are infected.