

Covid-19 Vaccine Analysis

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Introduction

Many vaccines have been introduced so far to fight covid-19. No vaccine has guaranteed 100% accuracy so far, but most manufacturing companies claim their vaccine is not 100% accurate, but still, it will save your life by giving you immunity.

Thus, each country tries to vaccinate a large part of its population so as not to depend on a single vaccine. That's what I'm going to analyze in this article, which is how many vaccines each country is using to fight covid-19. In the section below, I will take you through a data science tutorial on Covid-19 vaccines analysis with Python.

Need of Python in Covid-19 vaccine analysis

There was a time when Covid-19 got out of hand. Even after the lockdown, this still resulted in a rapid increase in cases as in some countries cases were brought under control but the economy was sacrificed. In such a situation, only vaccines are seen as the only tool that can help the world fight covid-19. In this article, I will walk you through the task of Covid-19 vaccines analysis with Python.

Programs What we use in this?

The dataset that I will be using here for the task of covid-19 vaccines analysis is taken from Kaggle. Let's start by importing the necessary Python libraries and the dataset:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
data = pd.read_csv("country_vaccinations.csv")
data.head()
```

	country	iso_code	date	total_vaccinations	people_vaccinated	people_fully_vaccinated	daily_vaccinations_raw	daily_vaccinations
0	Afghanistan	AFG	2021-02-22	0.0	0.0	NaN	NaN	NaN
1	Afghanistan	AFG	2021-02-23	NaN	NaN	NaN	NaN	1367.0
2	Afghanistan	AFG	2021-02-24	NaN	NaN	NaN	NaN	1367.0
3	Afghanistan	AFG	2021-02-25	NaN	NaN	NaN	NaN	1367.0
4	Afghanistan	AFG	2021-02-26	NaN	NaN	NaN	NaN	1367.0

	total_vaccinations	people_vaccinated	people_fully_vaccinated	daily_vaccinations_raw	daily_vaccinations	total_vaccinations_per_hundred
count	6.575000e+03	5.926000e+03	4.223000e+03	5.507000e+03	1.069500e+04	6575.000000
mean	3.630372e+06	2.585810e+06	1.175809e+06	1.192650e+05	7.048124e+04	12.295927
std	1.396665e+07	9.013711e+06	4.860110e+06	4.420816e+05	2.988761e+05	20.384869
min	0.000000e+00	0.000000e+00	1.000000e+00	-2.928600e+04	0.000000e+00	0.000000
25%	5.159850e+04	4.880650e+04	2.208100e+04	3.171500e+03	9.875000e+02	0.970000
50%	3.459940e+05	2.925895e+05	1.474380e+05	1.530100e+04	6.001000e+03	4.720000
75%	1.605542e+06	1.199198e+06	5.776635e+05	5.960150e+04	2.799800e+04	14.615000
max	1.834677e+08	1.171429e+08	7.069264e+07	7.185000e+06	5.190143e+06	188.990000

```
pd.to_datetime(data.date)
data.country.value_counts()
data = data[data.country.apply(lambda x: x not in ["England", "Scotland", "Wales", "Northern
Ireland"])]
data.country.value_counts()
data.vaccines.value_counts()
```

```
df = data[["vaccines", "country"]]
df.head()
```

```
dict_ = {}
```

```
for i in df.vaccines.unique():
```

```
dict_[i] = [df["country"][j] for j in df[df["vaccines"]==i].index]
```

```
vaccines = {}
```

```
for key, value in dict_.items():
```

```
vaccines[key] = set(value)
```

```
for i, j in vaccines.items():
```

```
print(f"{i}:>>{j}")
```



vaccines

country

0 Oxford/AstraZeneca Afghanistan

1 Oxford/AstraZeneca Afghanistan

2 Oxford/AstraZeneca Afghanistan

3 Oxford/AstraZeneca Afghanistan

4 Oxford/AstraZeneca Afghanistan


```
import plotly.express as px

import plotly.offline as py

vaccine_map = px.choropleth(data, locations =

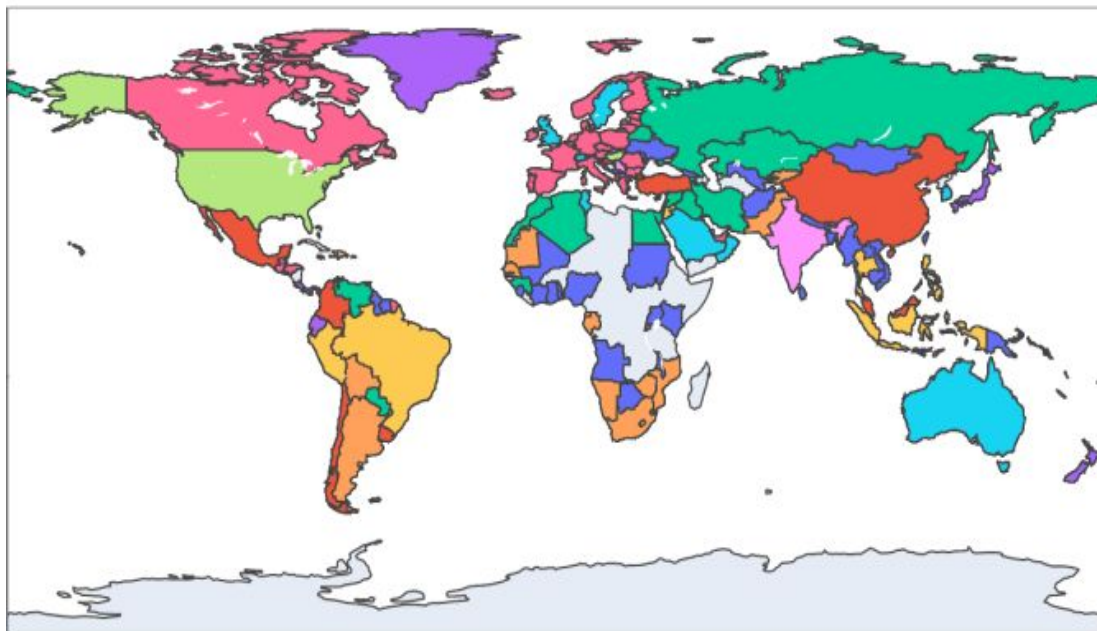
'iso_code', color = 'vaccines')

vaccine_map.update_layout(height=300,

margin={"r":0,"t":0,"l":0,"b":0})

vaccine_map.show()
```

Map



vaccines

- Oxford/AstraZeneca
- Pfizer/BioNTech, Sinovac
- Sputnik V
- Pfizer/BioNTech
- Oxford/AstraZeneca, Sinopharm/Beijir
- Oxford/AstraZeneca, Pfizer/BioNTech
- Moderna, Oxford/AstraZeneca, Pfizer/
- Sinovac
- Oxford/AstraZeneca, Pfizer/BioNTech,
- Oxford/AstraZeneca, Sinovac
- Oxford/AstraZeneca, Sinopharm/Beijir
- Sinopharm/Beijing, Sinopharm/Wuhar
- Oxford/AstraZeneca, Sinopharm/Beijir
- Oxford/AstraZeneca, Pfizer/BioNTech,
- Sinopharm/Beijir

Summary

So this is how we can analyze the type of vaccines taken by each country today. You can explore more insights from this dataset as there is a lot that you can do with this data. I hope you liked this article on Covid-19 Vaccines analysis using Python. Feel free to ask your valuable questions in the comments section below.