

UN YOUTH HACKATON 2021

DATA SCIENCE | INTERMEDIATE LEVEL

TEAM DATA DIVERS

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THE IMPACT ON SUSTAINABLE DEVELOPMENT GOALS

BY



WHAT WE FOUND

USED DATASETS

Data on COVID-19 (coronavirus) by Our World in Data (owid-covid-data.csv)

DATA-PREPROCESSING

Remove the missing values

STATISTICAL SOFTWARE

R software



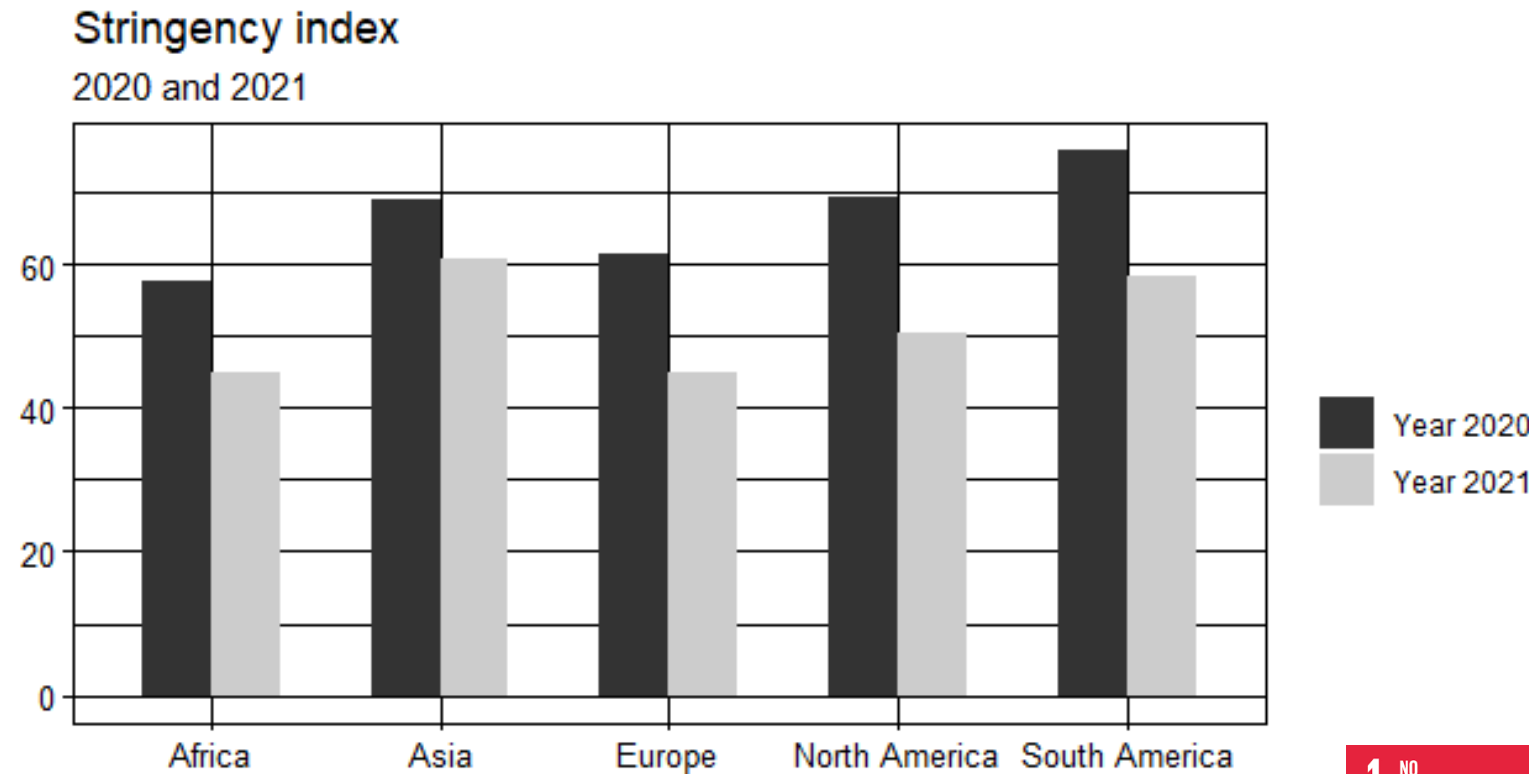
WHAT WE FOUND

How does covid-19 affect the *stringency index*?

At the beginning of the pandemic (year 2020), countries have taken rapidly different measure to fight against the covid-19.

The *higher overall response* was recorded in *America* followed by *Asia*. Whereas Africa recorded the lowest SI.

The higher values of SI around the world revealed that the covid-19 was impacting negatively and needed some actions.



data:: <https://covid.ourworldindata.org/>

1 NO POVERTY



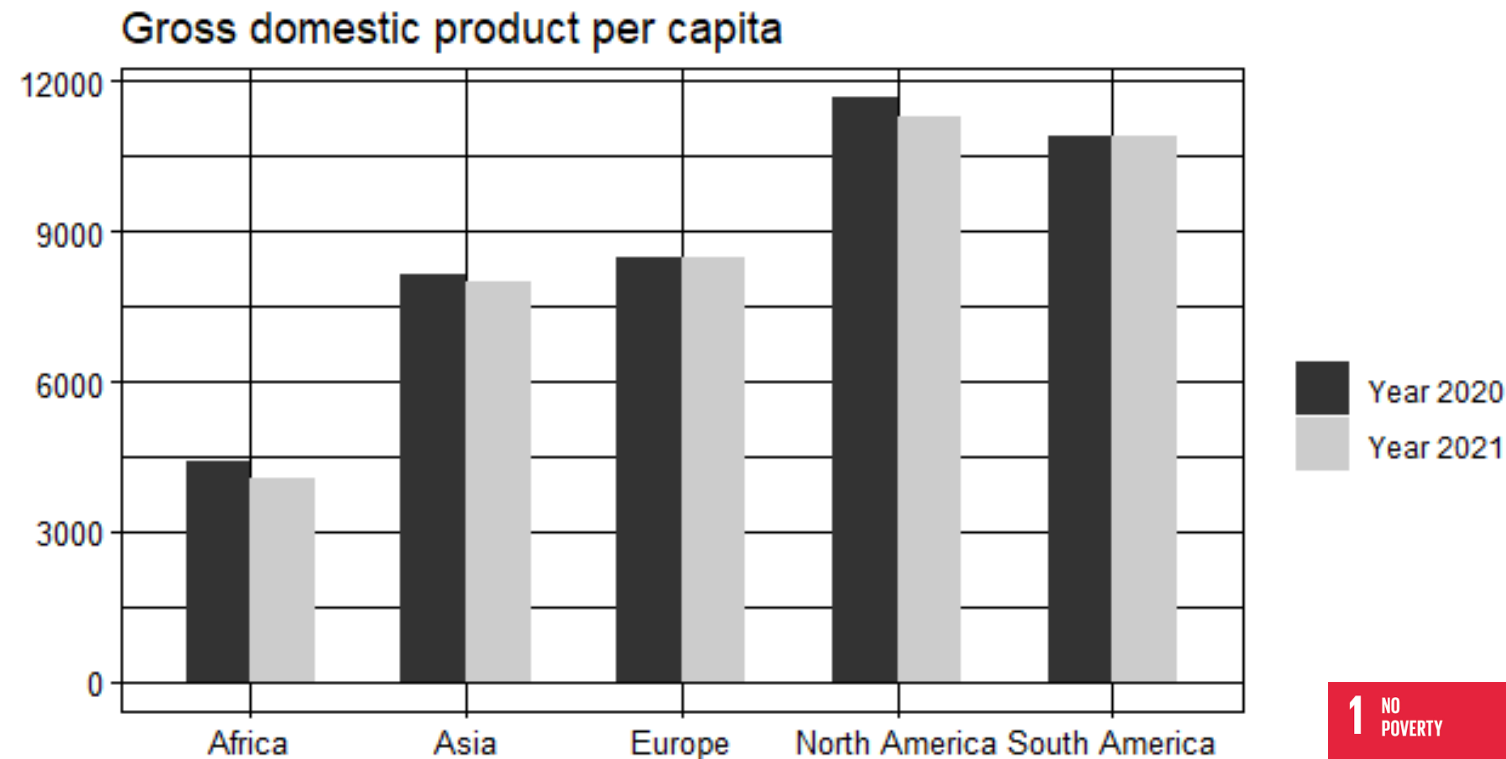
WHAT WE FOUND

How does covid-19 affect the *GDP per capita*?

Growth in the production of goods and services is a basic determinant of how the economy fares.

The *contribution per head of the population* irrespective to the continents decreases from 2020 to 2021 that is to say from the beginning of the coronavirus to the current situation.

The *highest impact* was recorded in *Africa*.

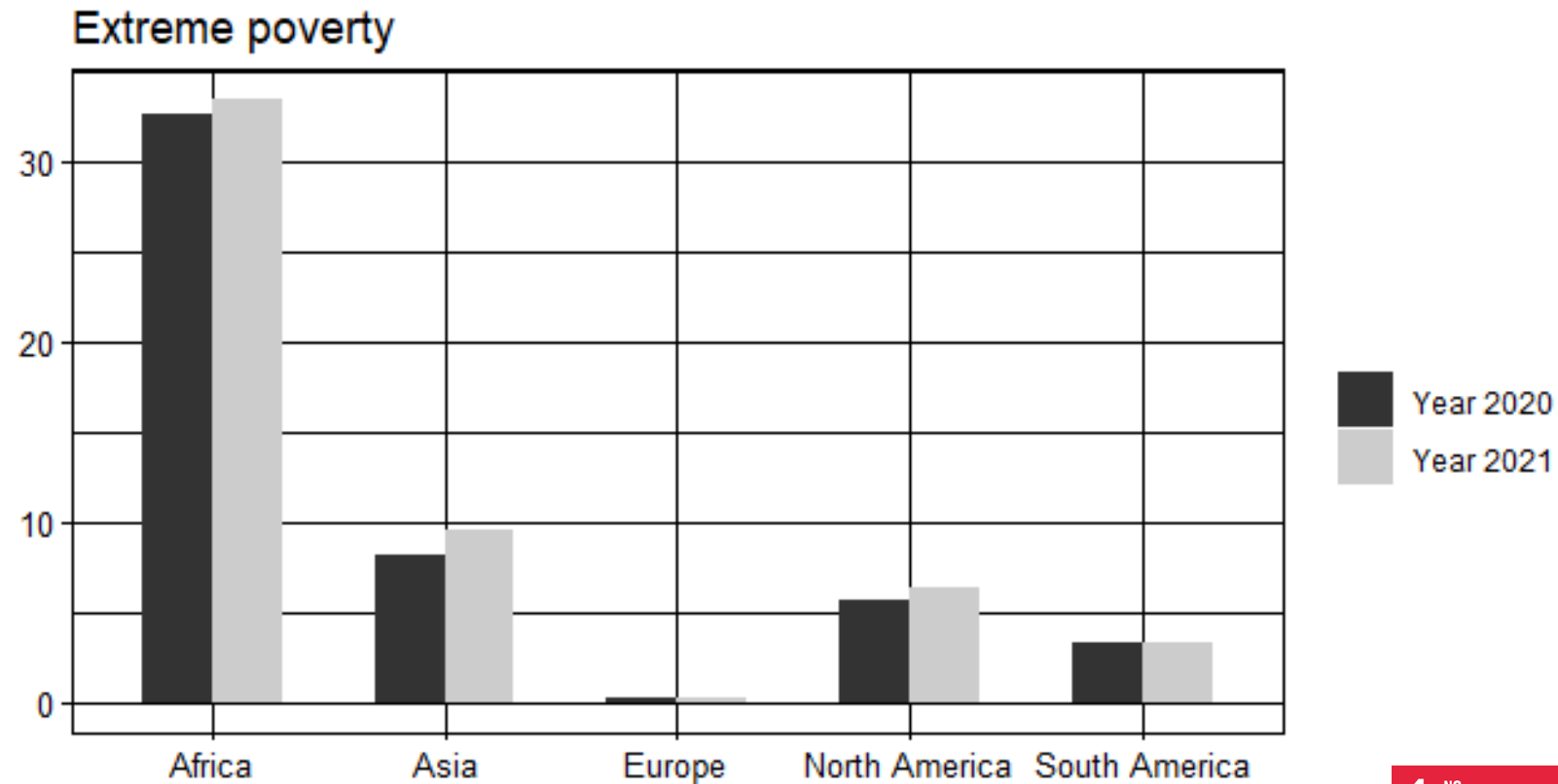


WHAT WE FOUND

How does covid-19 affect the *extreme poverty*?

The negative impact led to *aggravate* the situation of the *extreme poverty* in the world.

From the beginning of the covid-19 in 2019 to 2020, the proportion of *people below the international poverty line* has *increased* namely in *Africa, in Asia and and America* (precisely North America).



data.: <https://covid.ourworldindata.org/>



WHAT WE FOUND

USED DATASETS

COVID-19 vaccination data by WHO (vaccination-data.csv)

Data on COVID-19 (coronavirus) by Our World in Data (owid-covid-data.csv)

DATA-PREPROCESSING

Remove the missing values

Merge the two datasets on the countries

STATISTICAL SOFTWARE

Python



WHAT WE FOUND

Is there a relationship between the *number of available vaccines per country* and the *number of vaccinated persons*?

There is a weak significant correlation between the number of available vaccines and the number of vaccinated persons (fully vaccinated [ρ_1] and those who receive one or more doses [ρ_2]).

Since the countries haven't the same population, it would be wise to consider the vaccination rate.

$$\rho_1 = .209 \quad \rho_2 = .207$$

WHAT WE FOUND

Is there a relationship between the *number of available vaccines per country* and the *rate of vaccination*?

The correlation analysis between the vaccination rate and the number of available vaccines per country reveals that there is no significant correlation between those variables.

Increasing the number of vaccines per country will not necessarily increase the number of vaccinated persons.

To make good decision about the policy of vaccination, other surveys should be conducted to investigate the reasons why people agree to be vaccinated or not.

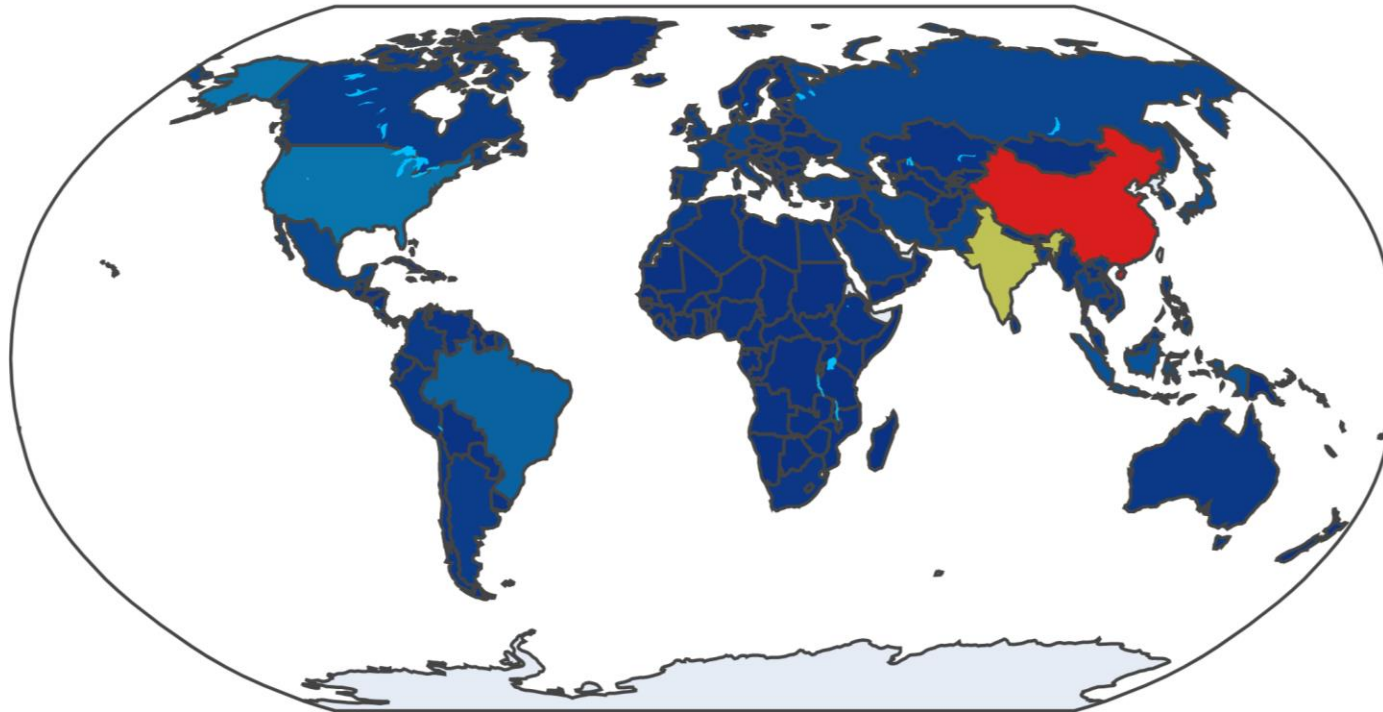
$$\rho = .124 \quad p - \text{value} = 0.1 > 5\%$$

WHAT WE FOUND

What is the *spatial distribution* of *fully vaccinated persons*?

Across the world *two countries* have highest fully vaccinated persons

Persons fully vaccinated

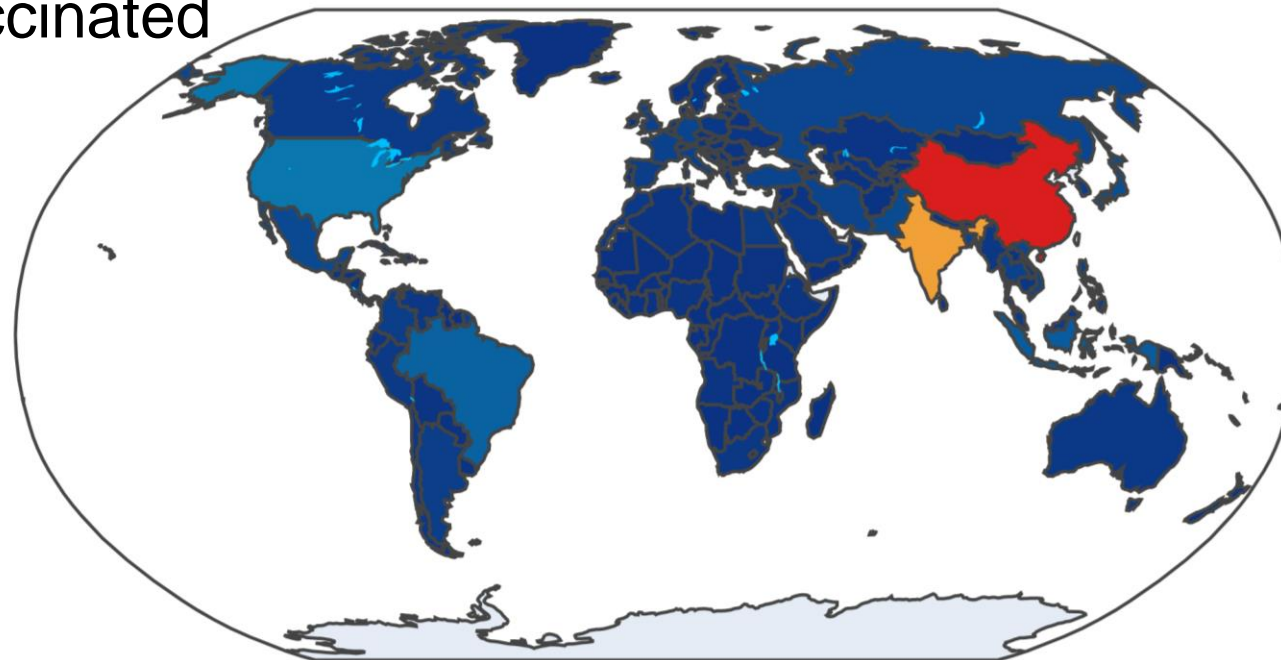


CHINA: >1 Billion
INDIA: >450 Millions

WHAT WE FOUND

What is the *spatial distribution* of *1+ dose vaccinated persons*?

The *same trend* could be observed with the distribution of 1+ dose vaccinated



Persons 1+ dose vaccinated

1B

0.8B

0.6B

0.4B

0.2B

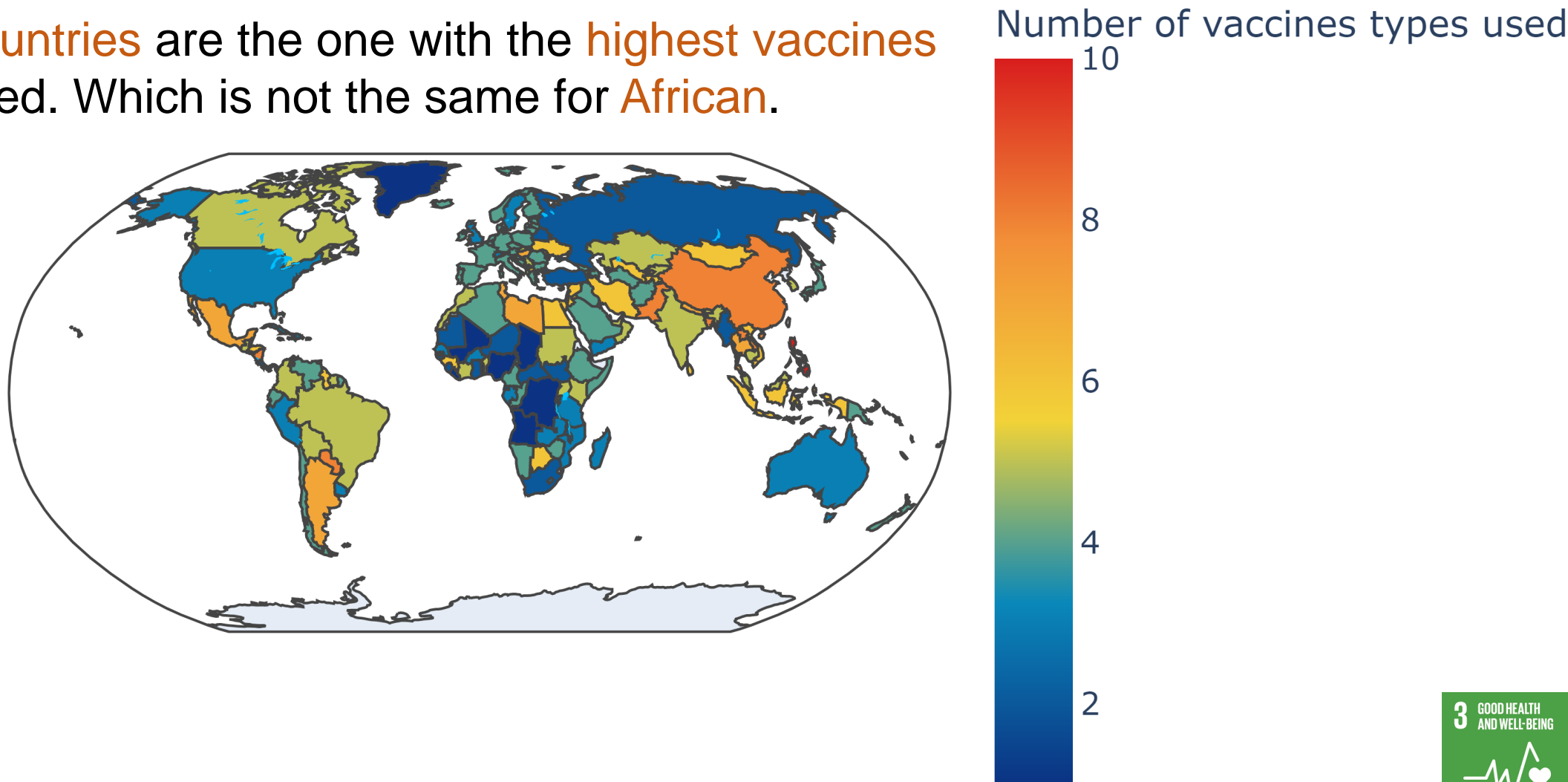
0

CHINA: >1.1 Billion
INDIA: >750 Millions

WHAT WE FOUND

What is the *spatial distribution* of the *types of vaccines*?

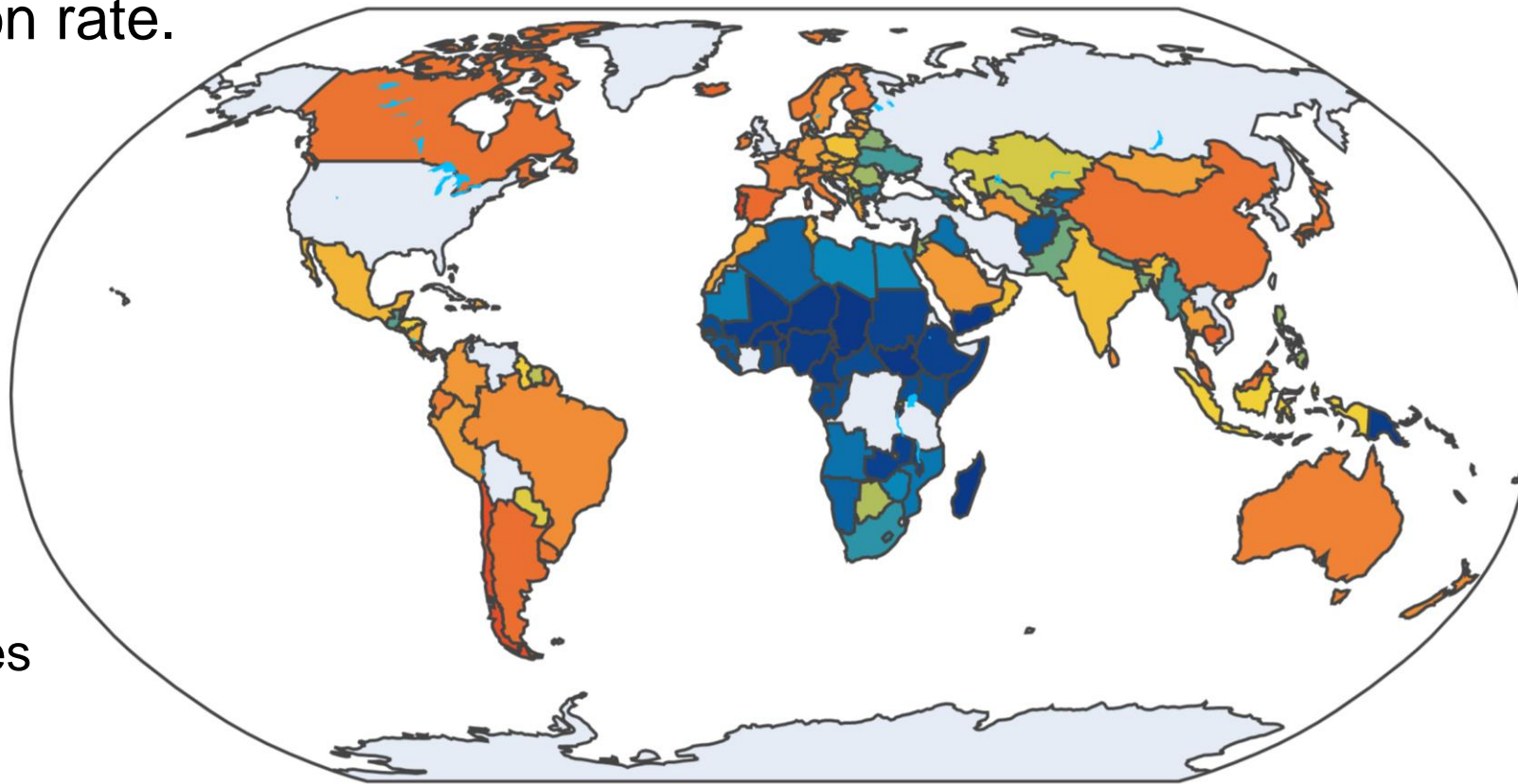
Asian countries are the one with the *highest vaccines* types used. Which is not the same for *African*.



WHAT WE FOUND

What is the *spatial distribution* of *vaccination rate*?

Across the world, *African countries* are the one with the less vaccination rate.



Vaccination rate

80

60

40

20

0

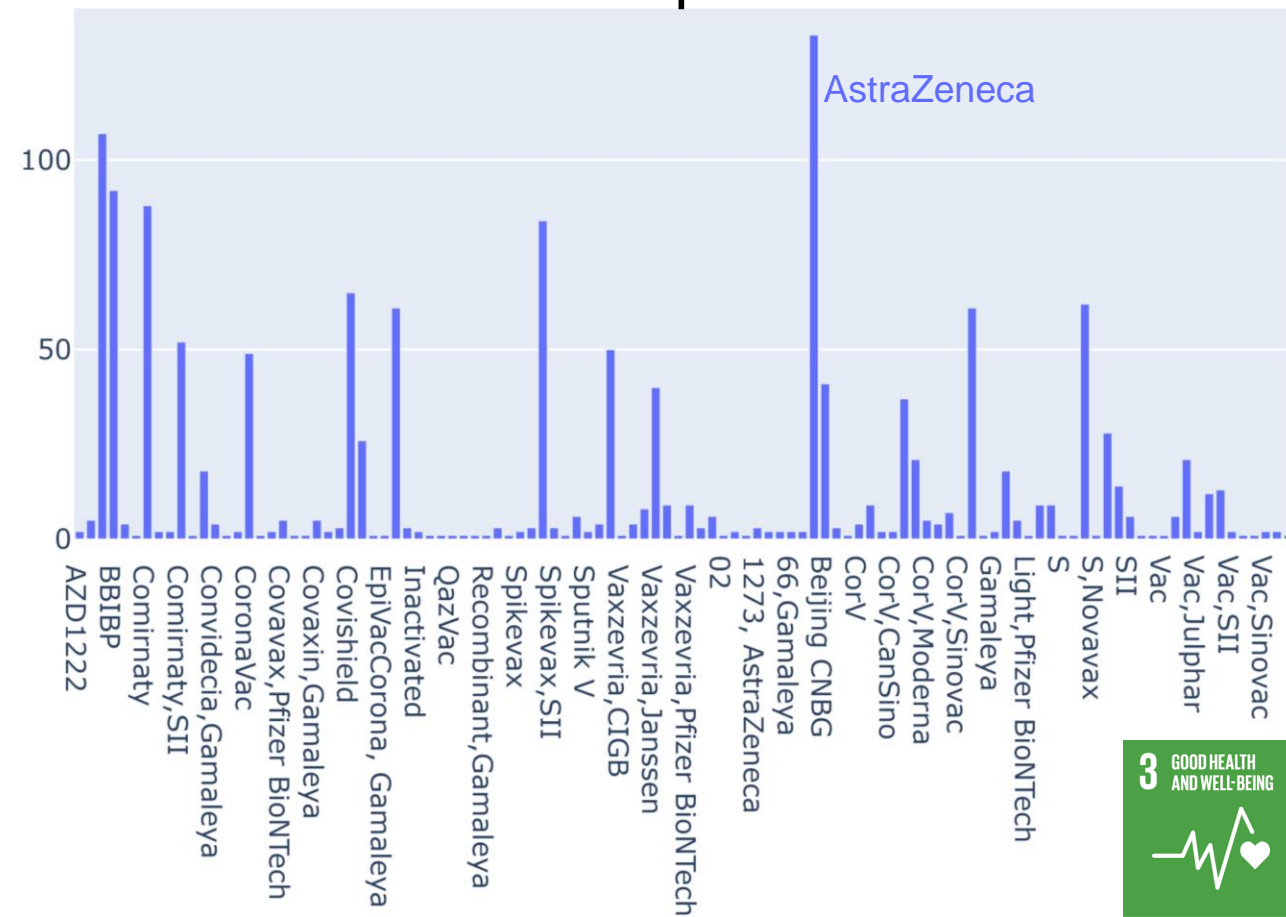
American countries
are the countries
with the highest
vaccination rate.

WHAT WE FOUND

What is the most used types of vaccines?

108 types of vaccines are used in the world. Those vaccines are defined by their own names and in additional the name of the firm which produce it.

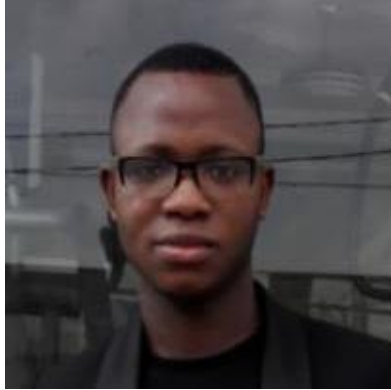
AstraZeneca is the most used vaccines in the world (in more than 130 countries)
Behind its, there is Ad26.COv2 and BBIBP.



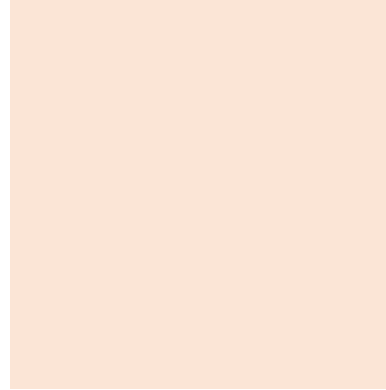
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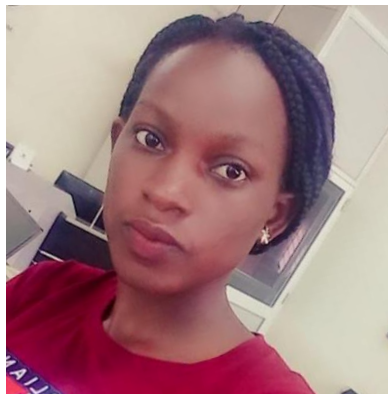
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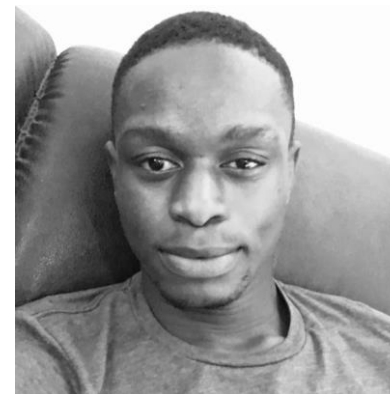
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