

The Impact of Covid-19 Pandemic on the Global Economy

The Covid-19
Pandemic

The level of GDPCAP,
HDI and STI

The level of TC and TD

Pair plots for my
variables

Cluster Analysis

The Analysis Results

Fin
Re



Loredana Mot Pribac

Pandemic on the Global Economy

Why?

The Global COVID-19 pandemic has infected millions of the world's population at a shocking speed.

Objective:

The study aims to assess the pandemic effects on the global economy.

How strong is the correlation between TC and TD?
How strong is the correlation between HDI and GDPCAP?

About data set:

A panel of 170 countries was sampled from 31/12/2020 to 19/10/2020, for the pandemic impact variables (stringency index, total cases, and total deaths) and the data on economic growth (gross domestic product per capita) and poverty alleviation (human development index).

Open data on www.kaggle.com

Dickey-Fuller Stationarity Test.

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Data Source:

- Open data on www.kaggle.com , European Union open data, World Development Indicators - World Bank, United Nations Development Programmes - UNDP, United Nations and OurWorldinData.com open data.
- Sources: <https://www.kaggle.com/shashwatwork/impact-of-covid19-pandemic-on-the-global-economy>
- www.OurWorldinData.com
- <https://data.europa.eu/euodp/en/data>
- <https://www.ecdc.europa.eu/en>
- <https://databank.worldbank.org/source/world-development-indicators>
- <https://www.undp.org/content/undp/en/home.html>

Python Skills:

- Importing libraries
- Importing and exporting datasets
- Descriptive analysis
- Data wrangling
- Data merging
- Grouping data
- Aggregating data
- Visualizations with Python libraries

Challenges:

1. While working with large sets of data Jupyter Notebook slowed a lot.

After doing some research and talking with my tutor, I had to reinstall all the tools.

2. I had errors when I write the code, but I managed to find the solutions. Sometime I was helped by the tutor, but not all the time.

⌚ Duration	👤 Role	🔧 Tools
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2 weeks

Data Analyst (solo)

Python

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GDPCAP (Gross domestic product per capita at constant prices 2011 International dollars) - World Development Indicators - World Bank



SUM(Gdpcap)
• 0
• 1,000
• 2,000
• 3,431

Human Development Index - composite measure of education, life expectancy at birth, and per capita income indicators - Poverty Alleviation (United Nations Development Programme - UNDP, United Nations)



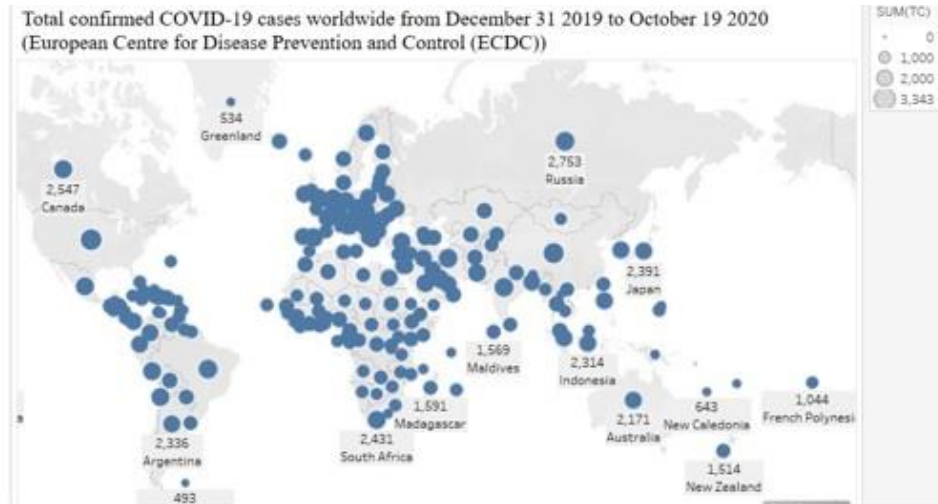
SUM(HDI)
• 0.0
• 100.0
• 200.0
• 280.2

The level of GDPCAP and HDI

HDI (Human Development Index) have small values for poor countries and big values for countries with **GDPCAP** with big values. This connection is important because covid 2019 had bring a lot of changes in all the countries, specially on the poor ones.

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<	The Covid-19 Pandemic	The level of GDPCAP, HDI and STI	The level of TC and TD	Pair plots for my variables	Cluster Analysis	The Analysis Results	Fin Re >
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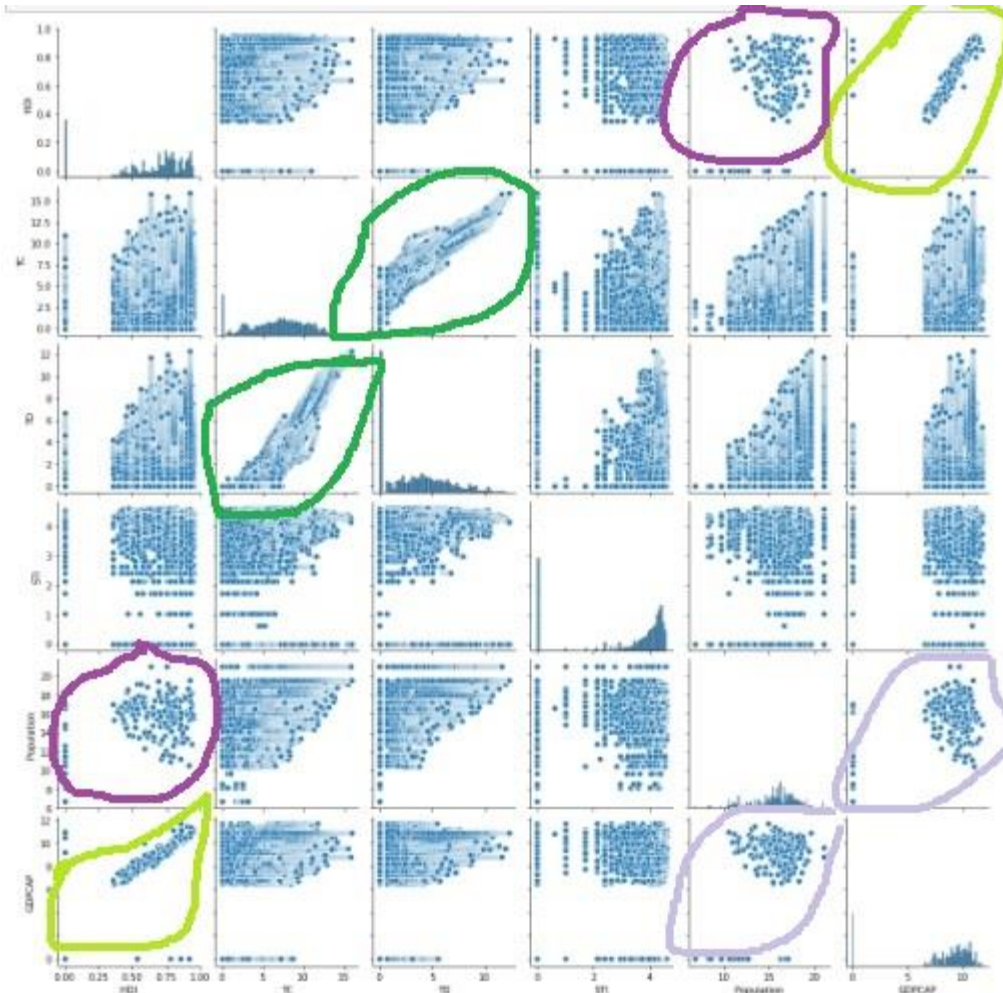
The level of TC and TD

TC (Total confirmed COVID-19) and TD (Total deaths) had grow a lot in only a few months and this big number of TD had impact on economy in each country.



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Pair plots for my variables:

- TC and TD have a strong positive correlation (green)
- HDI and GDP CAP have a positive correlation (light green)
- Population with HDI (purple) and Population with GDPCAP (light purple) have a moderate relationship.

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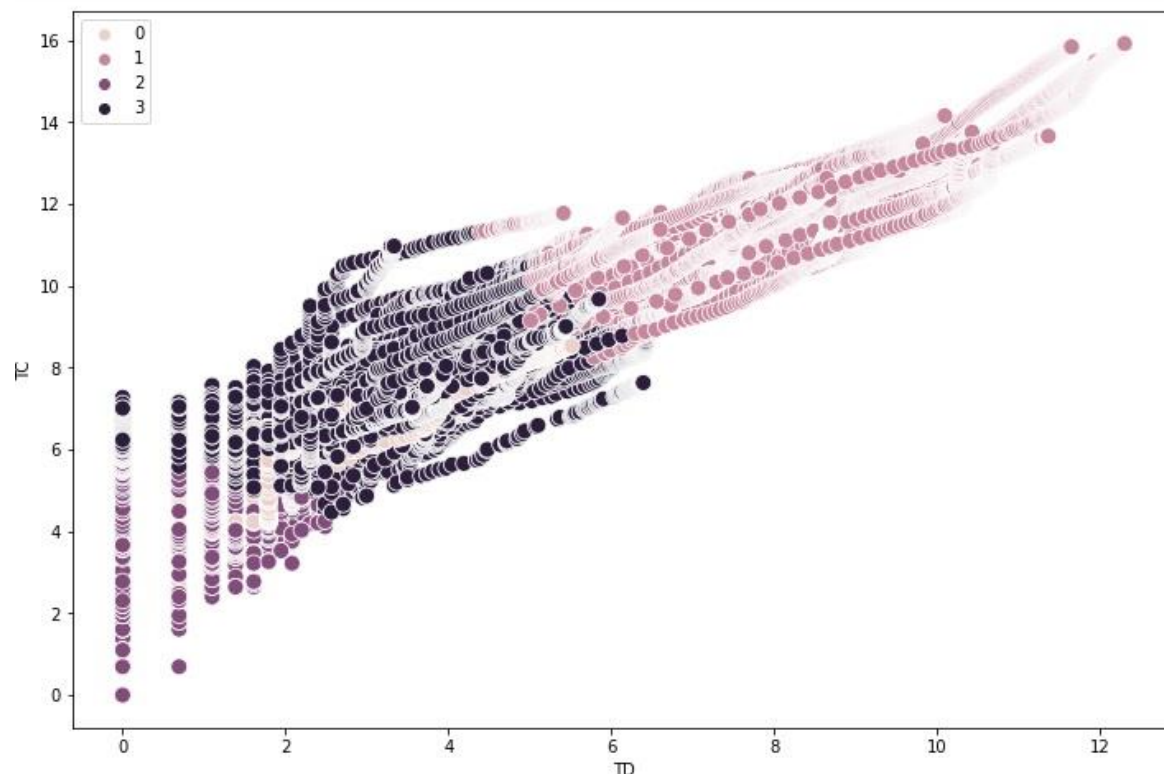
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variables

Cluster Analysis

The Analysis Results

Fin
Re



Cluster Analysis

The results show us this:

-HDI mean and median: This variable is big in the purple, pink and light pink clusters. In the cluster dark purple are very poor countries, no human development.

-STI mean and median: This variable is big in the purple, pink and light pink clusters. This is a composite measure based on nine response indicators, including school closures, workplace closures, and travel bans. In the very poor countries is small the value because they don't have a lot of this variable.

-GDPCAP mean and median: The values for GDPCAP are the same for 3 from 4 clusters: purple, pink and light pink. And for the dark purple GDPCAP is 0, this means that in that cluster is very poor countries.

-Population mean and median: The value of Population is connected with TC and TD. The biggest values are in clusters, purple, pink and light pink.

-TC mean and median: The purple cluster is the biggest and after that is pink cluster. The number of confirmed infected with covid is big in a lot of countries.

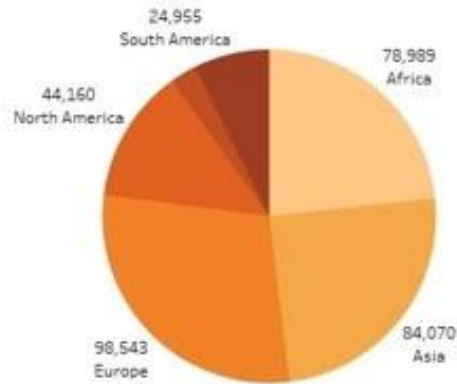
-TD mean and TD median: If the TC is big then TD is bigger, because these variables are connected. The purple and pink clusters are the biggest.

cluster	HDI		STI		GDPCAP		Population		TC		TD	
	mean	median	mean	median	mean	median	mean	median	mean	median	mean	median
dark purple	0.123816	0.000	1.778119	0.000000	0.000000	0.000000	11.694021	11.113224	4.386416	4.406719	1.145131	0.000000
light pink	0.679916	0.736	2.498820	3.218876	9.377566	9.492126	15.139842	15.436418	2.639945	2.890372	0.253608	0.000000
pink	0.662723	0.702	3.698240	4.127779	9.085250	9.189712	15.691634	15.733109	7.758135	7.716461	3.724579	3.828641
purple	0.781898	0.798	3.936242	4.220390	9.814219	9.856533	17.303761	17.424008	11.258971	11.089729	7.739090	7.434257

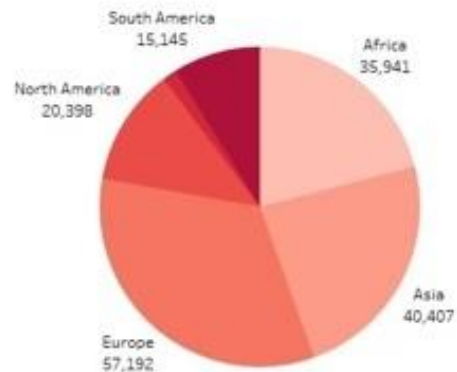
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Continents TC



Continents TD



The Analysis Results

TC regarding continents looks like this: In first place is Europe, after that very close is Asia and then Africa. North America and South America together are equal with Africa.

For TD the values are less than for TC. The top is the same: Europe, Asia and Africa.

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<	The Covid-19 Pandemic	The level of GDPCAP, HDI and STI	The level of TC and TD	Pair plots for my variables	Cluster Analysis	The Analysis Results	Fin Rev >
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Top 10 EU: TC



Top 10 EU: TD



The Analysis Results

Top 10 countries from EU - TC show like this: Italy, Spain, Germany and France had values very close and the biggest.

Top 10 countries from EU - TD show like this: Italy, Spain and France, they had the biggest values.

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The Covid-19 Pandemic	The level of GDPCAP, HDI and STI	The level of TC and TD	Pair plots for my variables	Cluster Analysis	The Analysis Results	Fin Rev
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Top 10 countries TC



Top 10 countries TD

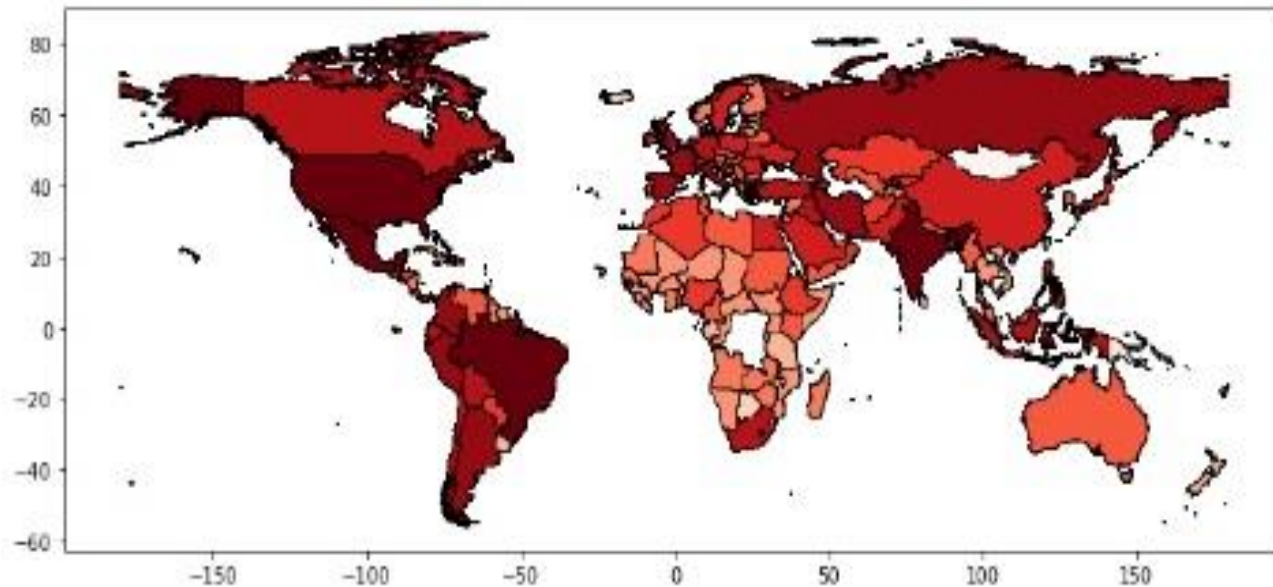


The Analysis Results

Top 10 countries TC and TD show us that the biggest values had United State of America, China and Brazil. Because TC is correlated with TD the results confirm that thing.

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Final Results and Recommendations

Conclusions:

The number of total deaths is big. In some countries it is too big. Because of this the countries that were affected the most didn't continue to invest in HDI, so the number for HDI in this country is smaller.

The real impact of covid 2019 on economic growth, we will see when the pandemic is over.

Limitation of the case study:

The data set contained a limited number of variables upon which to conduct the analysis.

Next steps:

- Gather more variables.
- Analyze the impact of additional variables on the economic growth.

Activate Window

Thank you!