DAV PROJECT REPORT

Suicide Rate Analysis

Introduction:

Every year, there are more than 800,000 people who take their own life, and many more suicides are attempted. In other words, there is one suicide in the world every 40 seconds. Suicide happens globally across ages and genders with different rates. It is the second leading cause of death for people aged 15-29, and the tenth leading cause of death for all ages. Suicide is a serious problem worldwide, but it is the most preventable when comparing to other leading causes of death. The first-ever Mental Health Action Plan of the World Health Organization was conducted in May 2013. The goal is to reduce the suicide rate by 10% by 2020 in nations.

Here, I analyze suicide rates across the world. The goal is to provide an insight into this topic and hope this data can be used to prevent suicides in the future.

Data:

Most of the data used in this analysis were obtained from the World Health Organization.

Data Cleaning Notes

- Seven countries removed (<= 3 years of data total)
- 2016 data was deleted (few countries had any, those that did often had data missing)
- HDI was removed due to 2/3 missing data
- Generation variable has problems, detailed in 2.11
- The continent was added to the dataset using the country code package
- Africa has very few countries providing suicide data.
- Variables, Dimensions, and Measures of the data.

Serial No	Variables	Description	Data Type
1	Country	Gives country name	Object
2	Year	Gives year	int64
3	Sex	Males/Females	Object
4	Age	Age of individuals	Object
5	Suicide No	Total number of suicides	int64

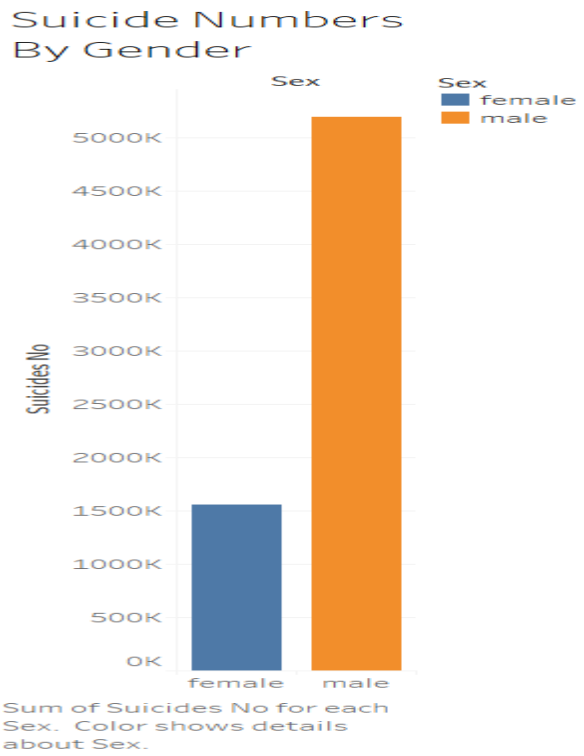
6	Population	Total number of population	int64
7	Suicide/100k pop	Suicide rate per 100k population	float64
8	Country-Year	Gives country and year	Object
9	HDI for year	Gives Health Development Index per year	float64
10	GDP for year	Gives Gross Domestic Product	Object
11	GDP per capita	GDP for no of people	int64
12	Generation	Generation of people	Object

Dimensions	Measures
Age	GDP per capita
Country	HDI for year
Country-Year	Population
GDP for year ($)	Suicides Number
Generation	Suicides/100K population
Sex	Latitude (generated)
Year	Longitude (generated)
Measure Names	Number of records
	Measure Values

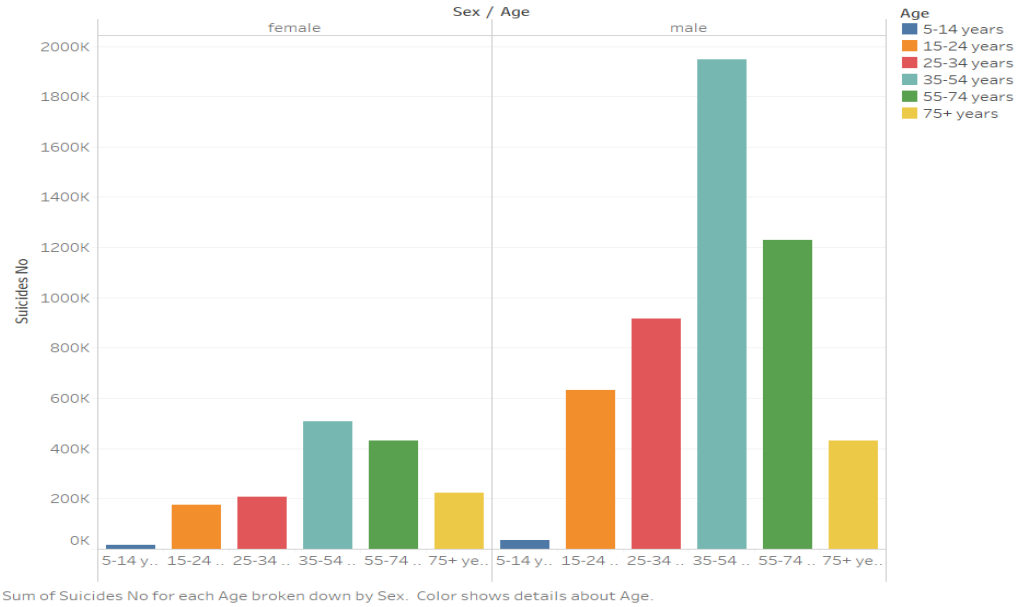
Critical Insights into the project:

- Suicide rates are decreasing globally.
- Of those countries that show clear linear trendover time, 2/3 are decreasing.
- On average, the suicide rate increases with age.
- This remains true when controlling for the continent in the Americas, Asia & Europe, but not for Africa & Oceania.
- There is a *weak* positive relationship between a countries GDP (per capita) and suicide rate.
- The highest suicide rate ever recorded in a demographic (for one year) is 225 (per 100k population).
- There is an overrepresentation of men in suicide deaths at every level of analysis (globally, at a continent and country-level). Globally, the male rate is ~3.5x higher.

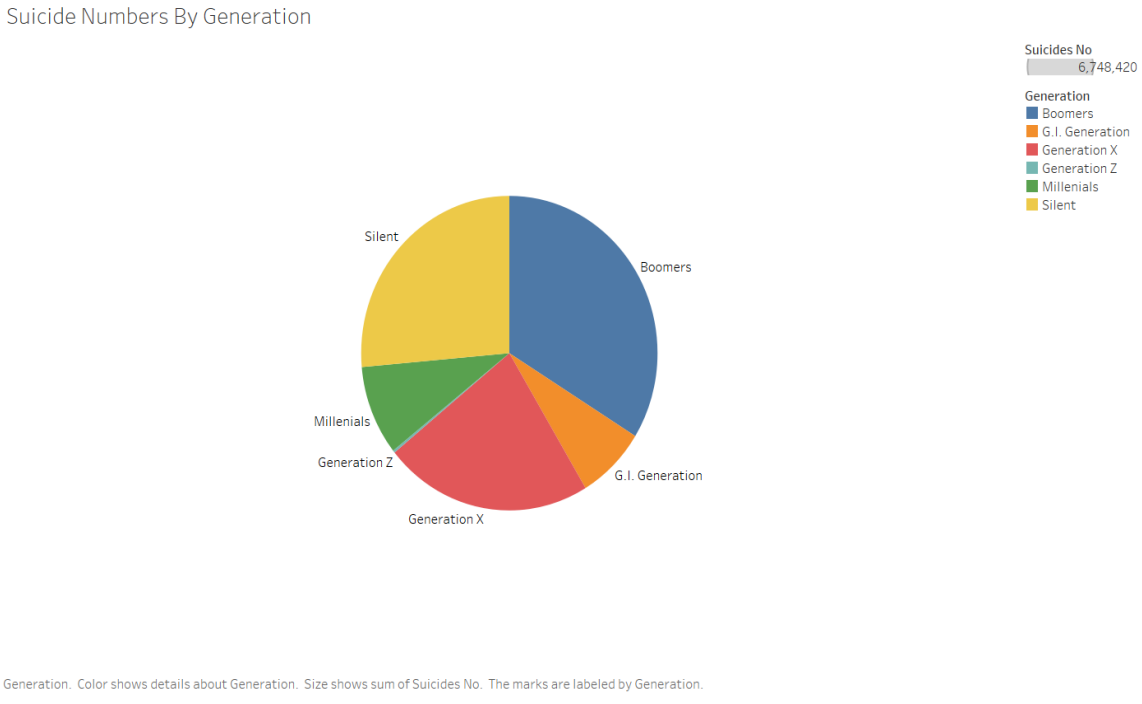
Findings and Visualization:



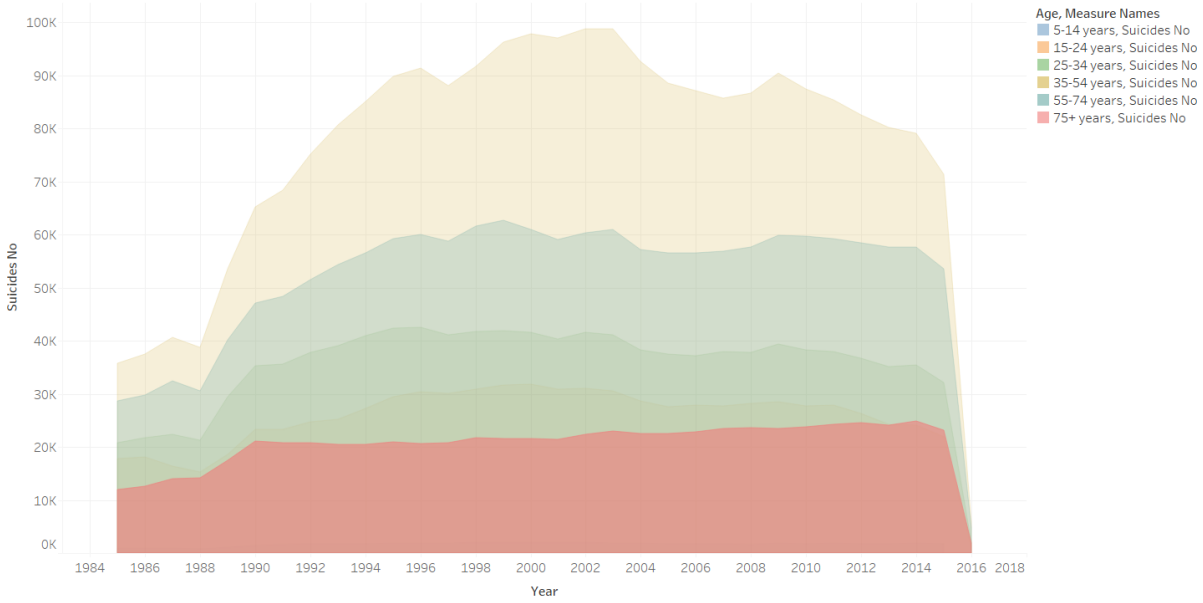
In this visualization, I have analyzed suicide numbers according to gender, and I have used filtration on gender and concluded that suicide numbers in the male category are more than thrice the female group.



In this visualization, I have analyzed suicide numbers in both male and female groups according to the age groups. This visualization shows that the age group of 35-54 years shows the higher number of suicide counts in both groups, and the age group of 5-14 years shows the lowest quantity of suicide counts for both gender groups.

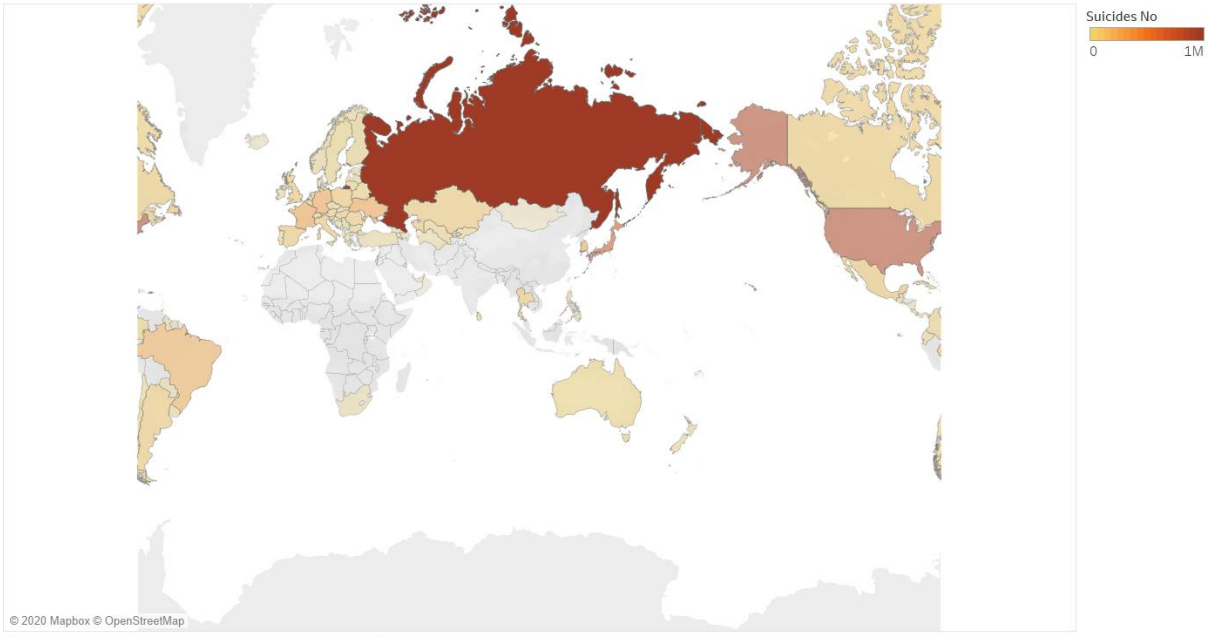


The generation is another qualitative data that helps me to find more interesting discoveries among those six countries. The dataset divides the population into the six-generation groups: Boomers, G.I. Generation X, Generation Z, Millennial's, and Silent. I use the area percentage chart to visualize those data. It is obvious that Boomers and Silent generation have more suicide populations than others that reveals there must be some potential problems cause this phenomenon.



The plot of Suicides No for Year. Color shows details about Age and Suicides No.

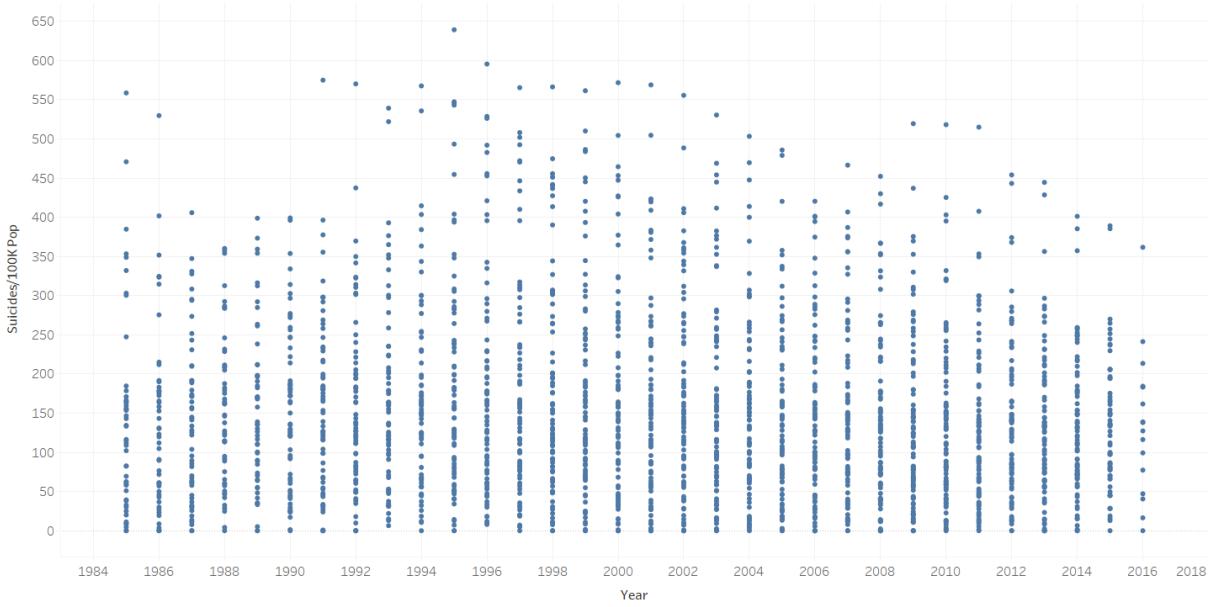
In this visualization I have analyzed suicides rated over the year according to age groups using area graph. The conclusion of this visualization is that age group of 35-54 years has the highest suicide rate and on the other hand the age group of 75+ years has lower suicide rate compared to all other age groups.



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Suicides No. Details are shown for Country.

In this visualization I have analyzed the suicides rate across the globe from 1985-2016. The finding of this visualization is darker the shade of the color, higher the numbers of suicides are committed. The Russia Federation has highest number of suicides and Oman has the lowest number of suicides.

Suicides/100k Pop By Year



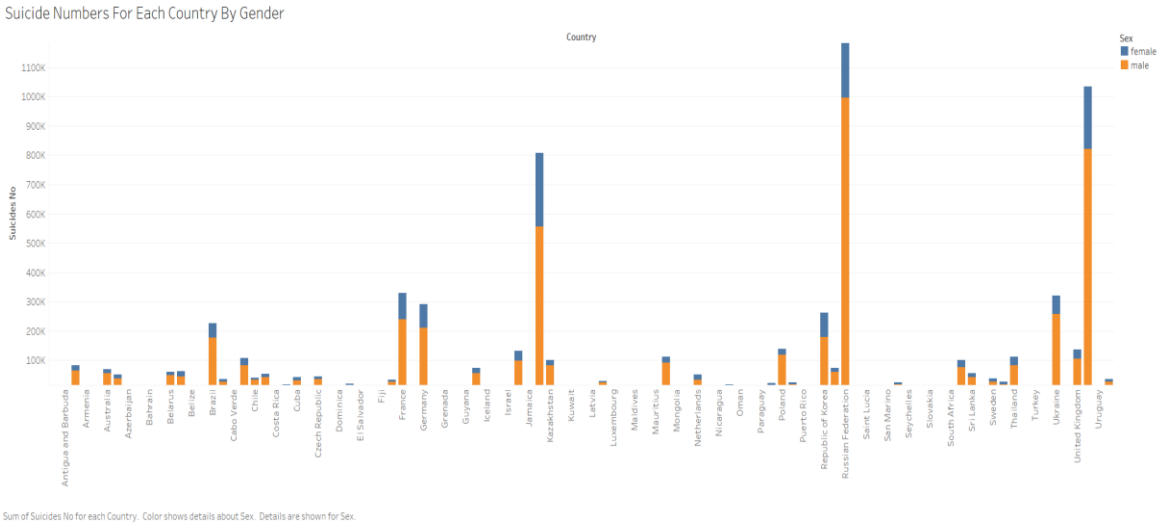
The trend of sum of Suicides/100K Pop for Year. Details are shown for Gdp For Year ($).

This visualization shows the suicides per 100k population across the world over the years. The result of this conclusion is that suicides per 100k population for the year 1995 was the highest and lowest for the year 2016.

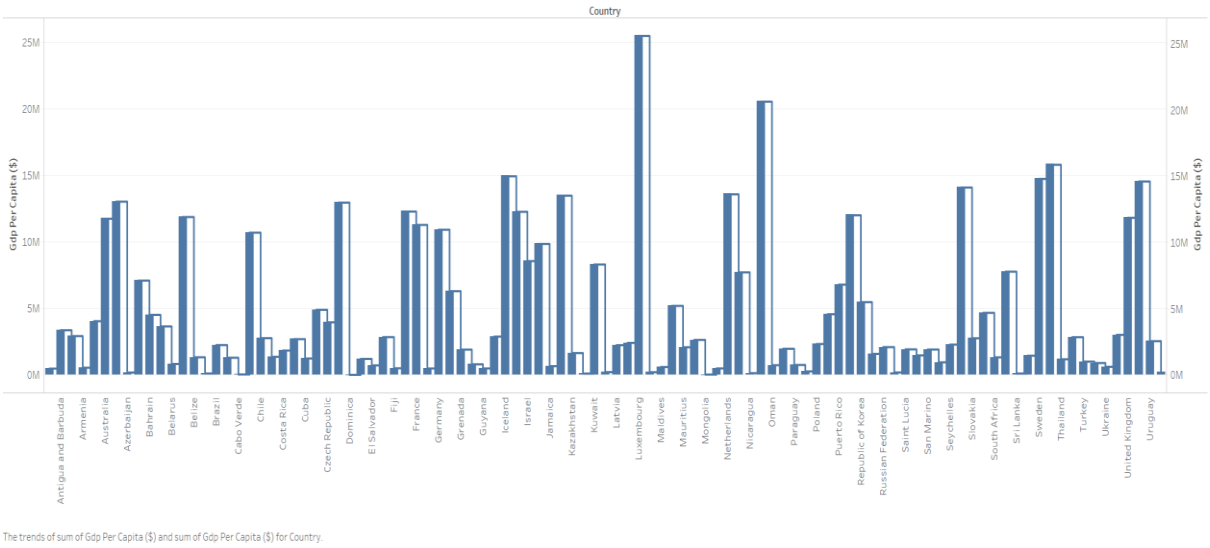
Suicide/100k Pop For Each Country

Map based on Longitude (generated) and Latitude (generated). Details are shown for Country.

In this visualization I have analyzed the suicides per 100k population across the world. The result of this visualization is that Russia Federation has the highest number of suicides per 100k population whereas Dominica has zero suicides per 100k population and United Arab Emirates has the lowest number of suicides per 100k population.



In this visualization I have analyzed suicides number for each country according to the gender. I have concluded that Russia Federation has the highest number of suicides in male group whereas Japan has highest number of suicides in female group. As I stated earlier that Oman has zero suicide number in both gender groups.



This visualization shoes us the GDP per capita for each country from 1985-2016. The result of this visualization is that Luxembourg has the highest GDP per capita whereas Dominica has the lowest GDP per capita as compared to other countries.

Conclusion:

In this analysis, the idea is a quantitative exploratory analysis of data on the amount of suicide. Overall, we can see that data show what we see in newspapers, television but in my view most of the conclusions that I reached were already predictable; only imagined a more significant number of teenagers committing suicides, which was not seen in the data. I tried not to justify the graphs for demographic, social and economic reasons, keeping the article neutral. However, there may be several explanations for the numbers available. One of the reflections in the form of a popular ready and paradoxical phrase is:

The More Suicidal, than less suicides

I believe that, from the above , one can quantitatively ascertain the truth of this statement.