

Suicide Prevention using Data-Science Techniques

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Abstract - Suicide is delineate as inflicting owns death purposely. Multiple mental disorders, Stress, relationship issues square measure some suicide impulsive. In line with Wikipedia, 0.5% individuals suicide per annual with around ten to twenty million suicide tries. Suicide may be a critical issue that has to be addressed. Since information Science may be a multidisciplinary field, we are able to get some insight into why there's a high suicide rate in Bharat by detective work patterns in our datasets. The target of this paper is to analyse the correlations between suicide rate and socioeconomic psychological state metrics by finding the pattern.

Here we have a tendency to use python and completely different libraries to discover the pattern in our information and notice the correlations. Suicide is AN act that is outlined by varied varieties of social factors. Quite 100 thousand lives square measure lost per annum in Bharat because of suicide that is why suicide may be a critical issue in our country. Compared to ladies, men square measure additional liable to suicide and around forty p.c of individuals United Nations agency kill square measure below the age of thirty. Suicide among this people is of additional concern since this people is liable for the economic process and development of the country. Dismissed individuals like men and housewives square measure additional abandoned for suicide tries. This causes large socio-economic and emotional burden on our society.

Every year quite 6 June 1944 of the student's kill in Bharat. Bharat stands at number one on youth suicide "which is of nice concern toward mental and social care of scholars. Farmers that contribute to 17 November of economic process in Bharat are additional possible to kill. This can be a vital issue that has to be addressed by the govt. of our country. Results in my paper shows that a lot of determinants like Religions, Sun, and Sleep will have a positive influence on mental "well-being and harmful mentation together with different factors like sensible parenting and faculties teaching cognizance may cut back suicide risks in Bharat.

KeyWords: Analysis, Correlation, Data Science, Suicide, Visualization

Abbreviations:-

EDA - Exploratory Data Analysis

SR - Suicide Rate

HDI - Human Development Index

WHO - World Health Organization

1. INTRODUCTION

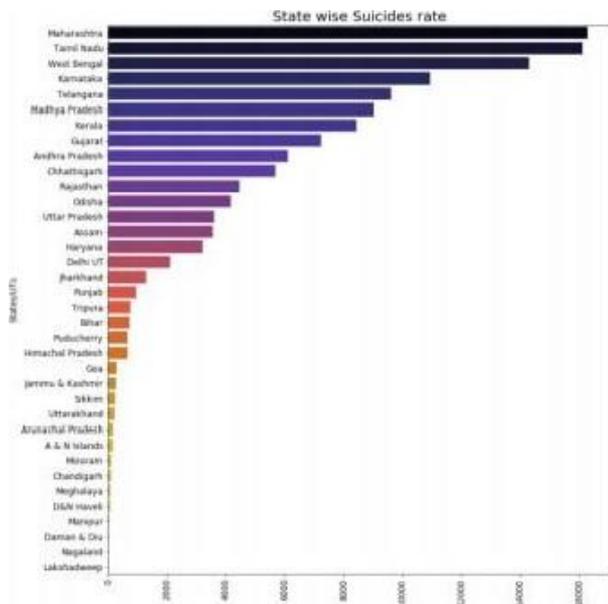
Did you recognize zero.5% of individuals within the world kill each year? Whereas it's usually believed that someone is committing suicide because of depression however there square measure multiple alternative circumstances too. This means that the mental welfare of someone can't cure self-destructive thoughts. In my analysis paper, I found some extra factors that induce suicide and facilitate scale back self-destructive thoughts. Dataset employed in my paper is from various sources.

My information is principally tailored towards Republic of India. Dataset compilation is finished from secondary supply i.e Internet. Information is collected from the Indian information government web site and alternative open sources accessible on the net all the information is accessible freely and is open-sourced. Dataset was cleansed and analysed mistreatment Python opensource libraries like NumPy, Sklearn, Pandas, SciPy and was unreal mistreatment matplotlib and seaborn.

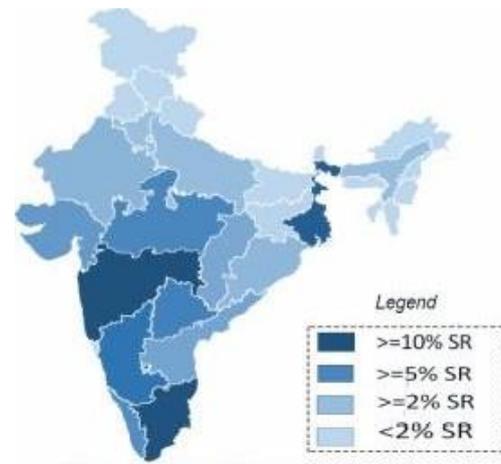
2. Suicide Rate all over India

In terms of population, the second most inhabited country within the world is Bharat. Human Development Index ranks Bharat at one hundred thirty. HD may be a tool that live our country's overall development and achievements in multiple dimensions like socioeconomic development. in keeping with United Nations agency, India's suicide rate for ladies is hierarchical sixth and for men is twenty second.

This is often a regarding issue for our country that is developing and it's required to be addressed by government and other people. Currently Bharat is hierarchical nineteenth in suicide rate with magnitude relation of one.28 between male and female.



Bar plot of state wise suicide rate in India



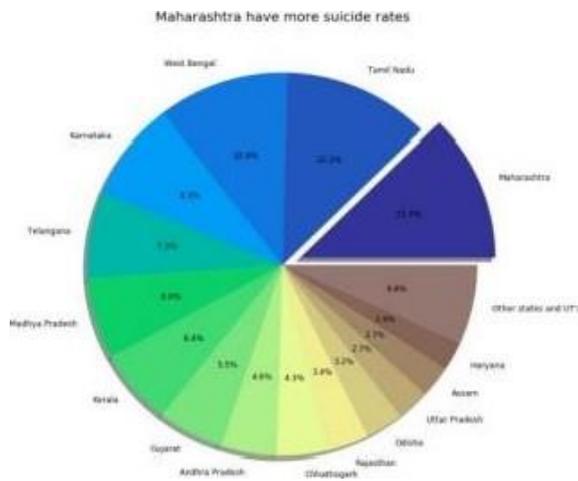
Heat map of India with suicide rate.

According to my knowledge analysis, geographic region our second most inhabited state has most range of suicides in entire country. Geographic region suicide rate is 12.4% and state follows up with suicide rate of 12.2% everywhere Asian nation.

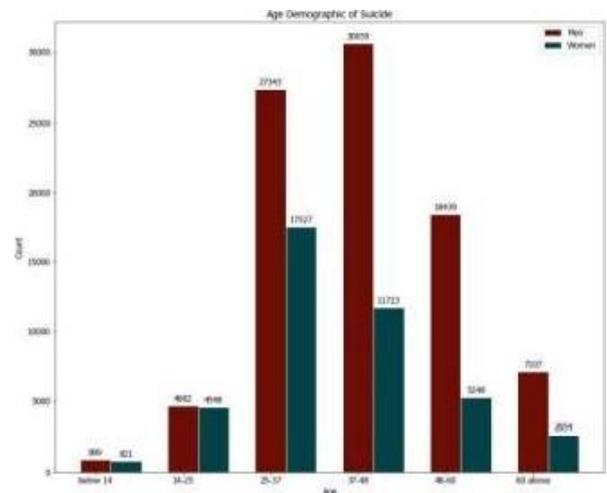
Looking at heat map of suicide rate in Republic of India, southern a part of Republic of India have additional suicides overall. Northern a part of our country doesn't have high suicide rate. According to Wikipedia, Puducherry have the most suicide rate per area.

3. Suicide Demographics for gender

After analysing the information we will see that gender is additional inclined toward suicide risk.



Pie diagram of suicide rates of states of Bharat Nagaland have quantity amount of suicides over the last decade and Union Territory, Lakshadweep additionally has terribly less suicide rate.

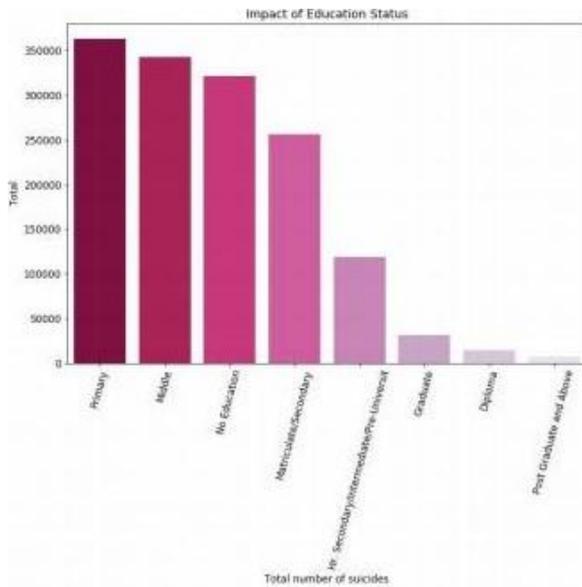


Group Bar chart of Age demographics of suicide in India

Our study reveals that men area unit additional liable to Suicide. Men between the age of 37-48 suicide and ladies between the ages of 25-37 area unit additional liable to kill. youngsters below the age of fourteen also are kill that marks the question on parenting and faculties. Our aged that area unit to supply knowledge to the trendy generation area unit having unsafe thoughts.

4. Education Of the person

As we have a tendency to all grasp education plays a really vital role within the mind-set of the person. Education transpose the means a person's thinking.



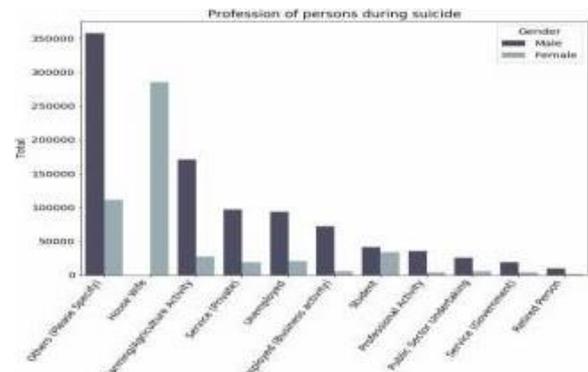
Bar plot of Education Impact on Suicide

My knowledge analysis reveals that the impact of education on individuals's mind-set is exceptional; individuals with over fifteen years of education ar less possible to kill whereas people with no education ar additional possible to suicide

5. Profession of the person

Profession of the Person provides him/her associate identity and conjointly a supply of earning. House wives area unit a lot of possible to suicide. In my information analysis I recognized Women's with smart education and profession area unit less possible to kill.

The Campaign Save the woman kid, educate the woman kid (Beti Bachao Beti Padhao Yogna) Initiated by Indian government is functioning with success. Agriculture is taken into account the first sector of India. Indian economy is usually dominated by Agriculture and Farmers therefore farmer's suicide incorporates a large Impact on our society.

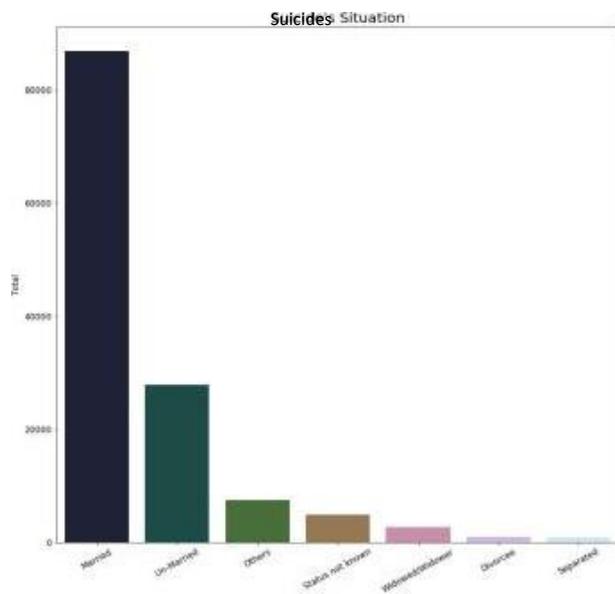


Group Bar Plot of Profession of suicide person

in step with information collected Farmers area unit a lot of at risk of suicide than the other professions. People operating privately sector area unit a lot of inclined towards suicide than individuals operating within the Government Sector.

6. Marital Status Of the person

Suicide not solely affects the person committing suicide however conjointly their family, Family conjointly plays a vital role on person's mental state.

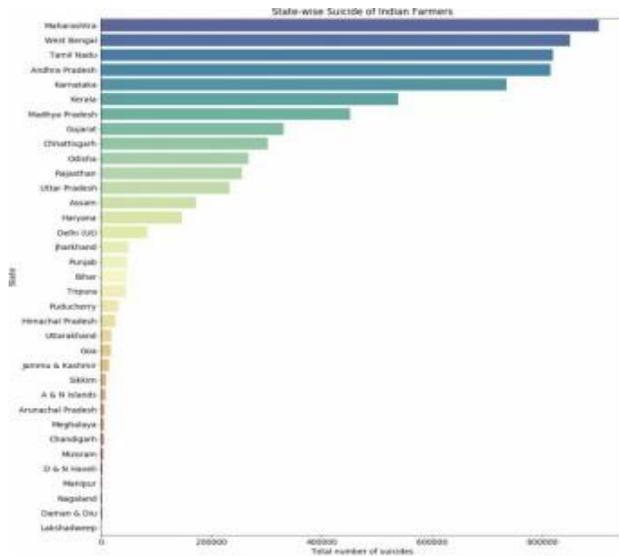


Bar plot of Marital Status of person

In my information analysis, Married folks ar additional inclined toward the suicide. This will ensue to economic drawback or family pressure on the person. Married girls also are at nice suicide risk this is often principally because of force and family disputes.

7. Suicide of Indian Farmers

which state has more farmer suicide in India?



Horizontal Bar Plot of Suicide of Farmer wrt States

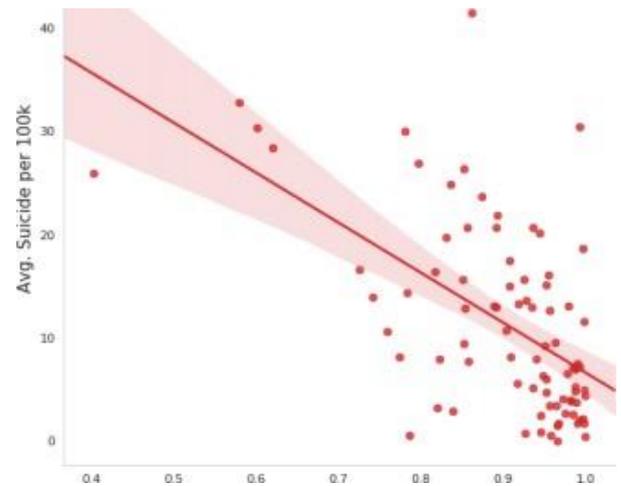
Maharashtra has the very best variety of farmer's suicides. Farmers from southern and central states suffer most. These to a special cause like 1.Intense Monsoon 2. water level depletion 3. Withering from rivers 4.Poor firming techniques 5. Water management 6. alternative factors like monetary instability. Government and NGO's may offer higher water management, loan discharge, seeds or fertilizers subsidiary, teaching them higher farming techniques, desalinated water, etc.

8. Religion and Suicide

I was very stunned to seek out that faith incorporates a nice Impact on the suicide rate. This might be largely because of faith revolves around religion and hope.

There are others variables that faith provides like, spiritual institution (Temple, Church, Mosque etc.) offer web and sense of community that may facilitate in attempt loneliness and delinquent behaviour.

Also several religions have a strict rule for medication and alcohol.



% of population religious Scatter line plot

As we can look from above plot countries with more religiousness are less prone to suicide than country.

9. Conclusion

After all of haggling and data analysis, I conclude that the suicide rate in Asian is increasing and also the youth of India is obtaining the foremost of it. While geographic region, Madras square measure having the very best suicide rate different Union Territories like Puducherry have additional suicides per space kilometre. Looking at the gender demographics of suicide, Men between the ages of 37-48 and girls between the ages 25-37 square measure additional doubtless to kill. Education contains a nice impact on the suicide rate. The additional the person is educated less doubtless the person have unsafe ideations. Housewives and farmers square measure at larger risk. Ladies that square measure educated and dealing professionals square measure at less. According to analysis Married persons square measure at highest suicide risk this might be associated with family issues or changes in economic state. gift dispute is that the main reason behind women's unsafe rate. Farmers from southern and western states suffer the foremost suicide because of imbalance in weather and deprived circumstances. Maharashtra contains a nice drug and alcohol consumption suicide risk than the other state. The govt of geographic region has to take some actions to regulate the drug and alcohol distribution. While faith is believed to assist a personality's mental prosperity, Exposure to the sun additionally contains a nice impact on a personality's mental state. In the finish person's mental prosperity is that the utmost variable that involves account for suicide risk. several Government agencies and NGO's square measure operating towards this important issue of suicide. Area may be a nice

example of a corporation that helps folks mistreatment charity. Aarea is out there in city 24*7.

WHEN IN NEED. FOR HELP CALL - 022 2754 6669

10. References

Data Collection

<https://data.world/>

<https://www.kagle.com/>

<https://data.gov.in/>

Data Cleaning, Analysis and Visualization

<https://pandas.pydata.org/>

<https://seaborn.pydata.org/>

<https://matplotlib.org/>

Wikipedia

https://en.wikipedia.org/wiki/Suicide_in_India

<https://en.wikipedia.org/wiki/Suicide>

https://en.wikipedia.org/wiki/Religious_views_on_suicide

Other sources

<https://healthline.com/health/depression/benefits-sunlight>

Python Notebook on Suicide (Created by Myself)

<https://github.com/AasimBaig/Suicide-Prevention-Datascience>

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