

Suicide in India from 2001 to 2012: Visualizations using Tableau

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INTRODUCTION:

i) Overview:

- Although suicide is a sensitive subject, it is a problem that many individuals in India face. In reality, data from 2001 to 2012 show that suicide rates in India have been rising over time. It's crucial that we discuss this problem and cooperate to find solutions.
- The magnitude of the issue can be better understood and potential action locations can be found by visualizing this data. The statistics show that suicide is not only a personal sorrow but also a public health issue that needs our attention and intervention.

ii) Purpose:

- This project provides information on suicide reports from the years 2002 through 2012. In this project, we used pie charts, bubble charts, and other visuals to represent the reports. This project assists in gathering data from many sources and turning it into something valuable that can be applied to making data-driven decisions.
- This project facilitates a simple understanding of the problem's root cause. This project makes it easier to connect to many data sources, examine data, and visualize it.

LITERATURE SURVEY:

Existing Problem:

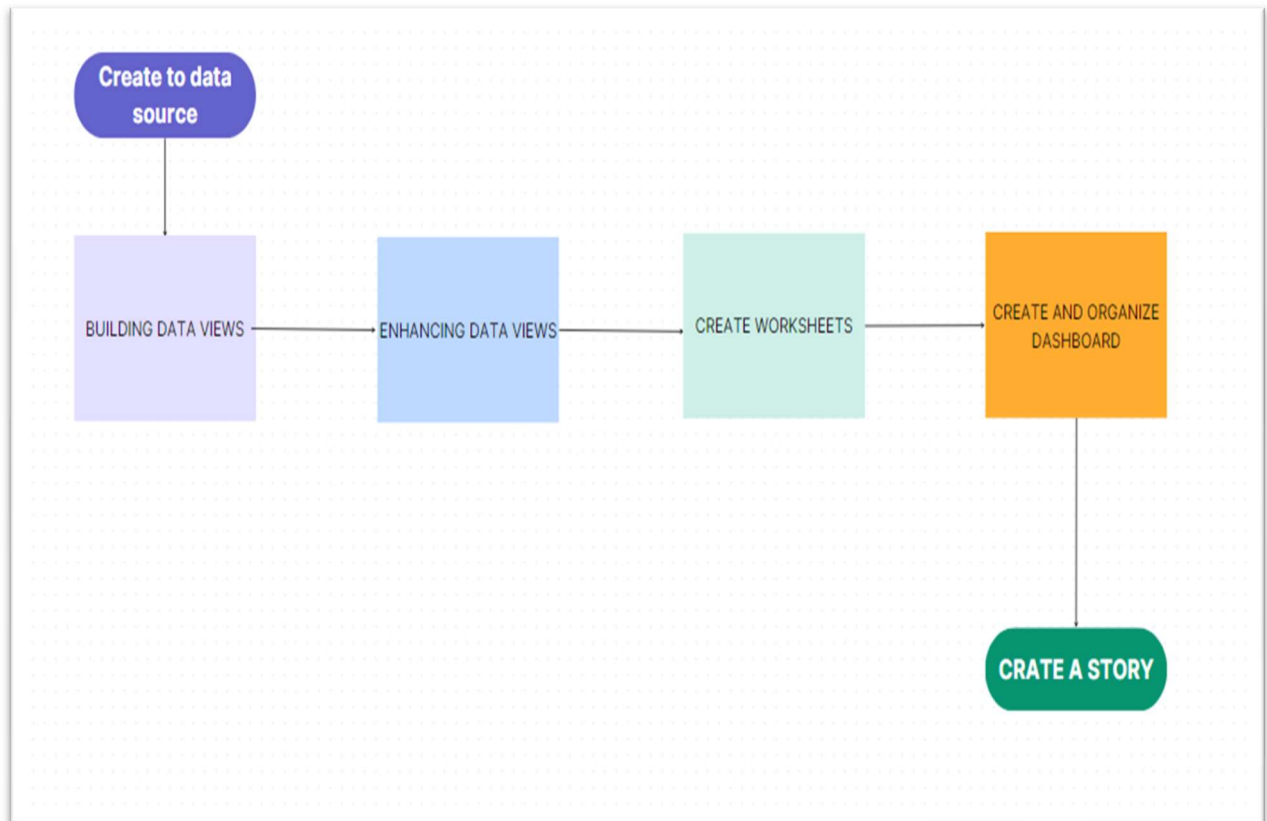
1. With the aid of data visualization, it is simple to connect to, extract data from, and create visualizations from any data source with a variety of data formats.
2. It becomes more difficult to track these variables and make timely decisions using conventional dashboards as relevant data points increase dramatically.

Proposed solution:

- Before deploying any reports or applications, we must examine a number of factors, such as the framework and folder permissions. With tableau, we can effortlessly deploy our projects, data sources, and workbooks without having to worry about any of these problems.
- Anodot's AI-powered analytics elevate the key findings first by grouping and correlating numerous anomalies by design. Anodot only finds the most significant problems and immediately notifies the appropriate teams by studying the typical behavior of millions of metrics.

THEORITICAL ANALYSIS

Block diagram:



HARDWARE AND SOFTWARE REQUIREMENTS

- Processor: A multi-core processor is recommended.
- Min. 8 GB RAM.
- Hard Disk Space: Sufficient disk space to store your data and Tableau project files. The amount of space required depends on the size of your data.
- Network: A stable network connection is necessary for accessing data sources and sharing visualizations.
- Operating System: Tableau Desktop supports Windows and macOS
- Database Drivers: If you are connecting to databases or other data sources, ensure that you have the required database drivers installed on your machine.
- Web Browser: When publishing and accessing visualizations on Tableau Server or Online, you'll need a supported web browser such as Google Chrome, Mozilla Firefox, or Microsoft Edge.

METHODOLOGY

- Data collection: The National Crime Records Bureau (NCRB) report on suicides in India serves as the project's main data source. The dataset includes data on a variety of topics, including age, gender, occupation, suicide causes and techniques.
- Data preprocessing: The dataset is cleaned and made ready for visualization by handling missing values, removing duplicates, and converting the data into an analysis-ready format.
- Data Visualization: A number of visualizations exploring various facets of suicide cases in India were produced using Tableau. Charts, graphs, maps, and interactive dashboards are some of the visualizations.

THE DATASET

- State: Name of the Indian state where the data belongs to.
- Year: Year ranges from 2001-2012, the complete field contains data for that year respectively.
- Type_code: Major classification of “Why Did People Commit Suicide”.
- Type: Sub-classification of type code
- Gender: Either the person committing suicide was a male/female.
- Age_group: What age group does the person belong to who committed suicide.
- Total: Count of people who committed suicide and has the common above 6 mentioned parameters.

EXPERIMENTAL INVESTIGATIONS

There haven't been many articles that have focused solely with suicide prevention methods or a methodical, scientific review of a method.

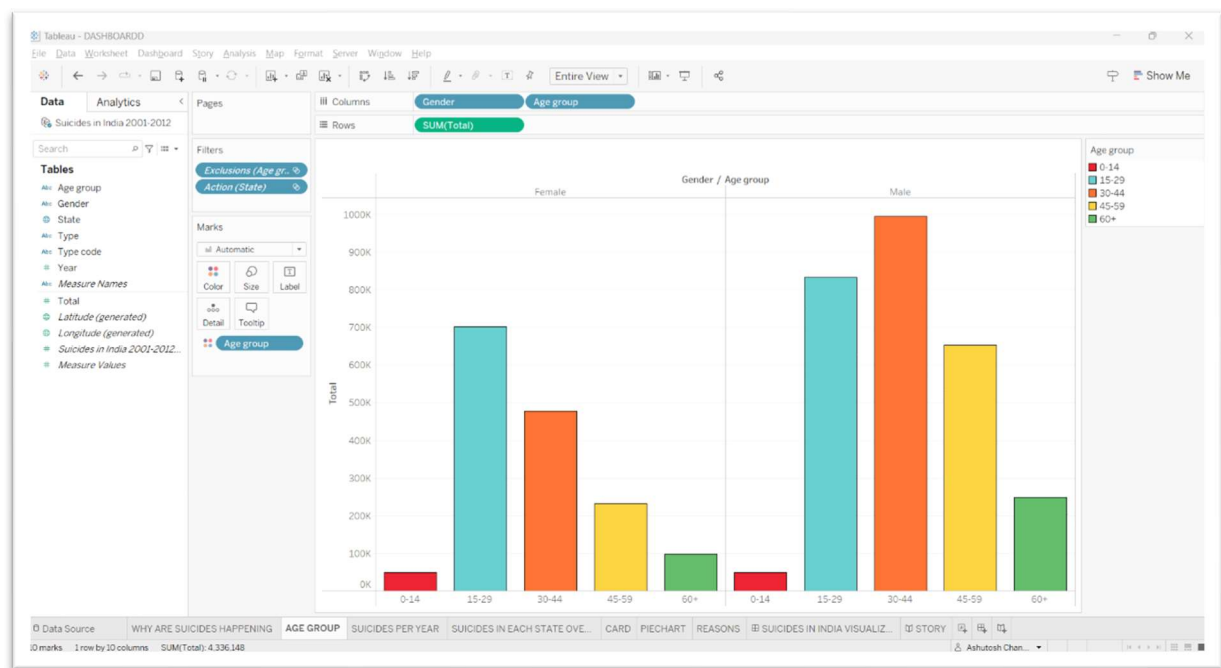
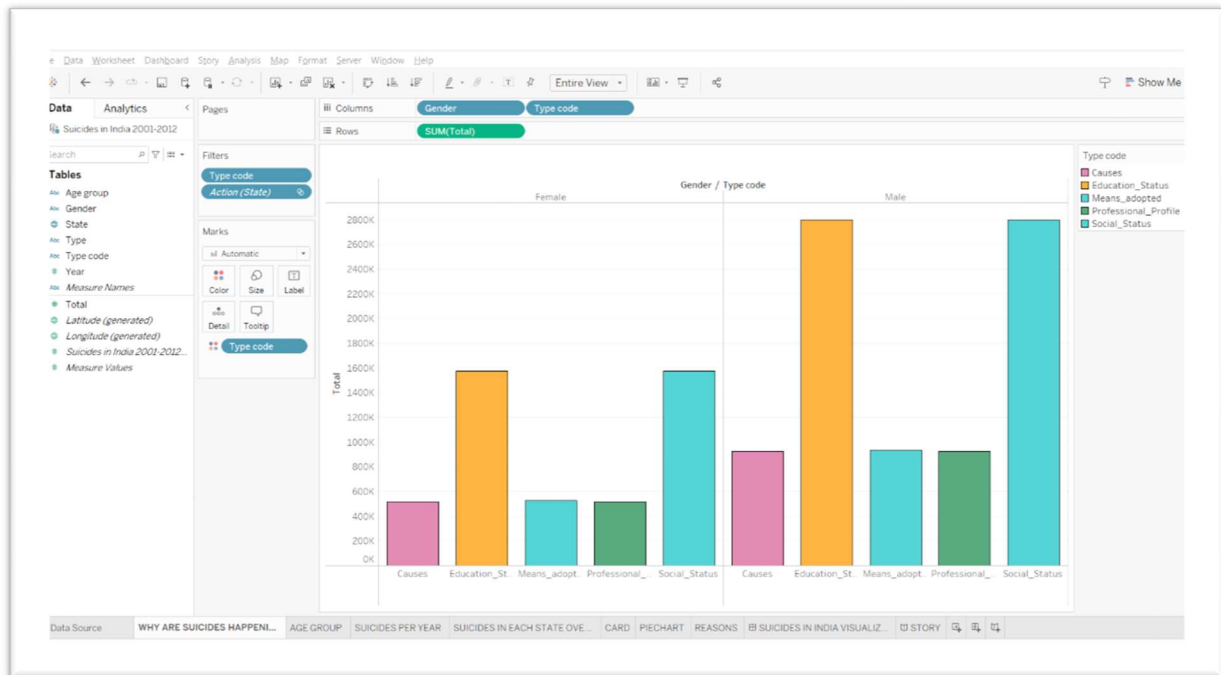
- Jena and Siddharta searched Indian and foreign literature for publications on non-fatal teen suicide attempts. They claimed that in order to lower the rates, non-fatal suicidal conduct among adolescents needed to be assessed and successfully addressed. They came to the conclusion that there is a huge demand for research in this area because there are so few Indian studies in this field. The paper also emphasises how crucial it is for professionals, such as general practitioners, teachers, paediatricians, and school counsellors, to have training in order to recognise non-fatal teen suicide behaviours in order to ease referral and efficient care.
- Vijayakumar highlights the urgent need for suicide prevention in India in an editorial and emphasises the necessity for diverse suicide prevention programmes because suicide is a complicated problem. In India, preventing suicide is more of a social and public health goal than a conventional mental health practise. She says in her conclusion that now is the ideal time for mental health experts to take proactive, leadership roles in preventing suicide and help thousands of young Indians.

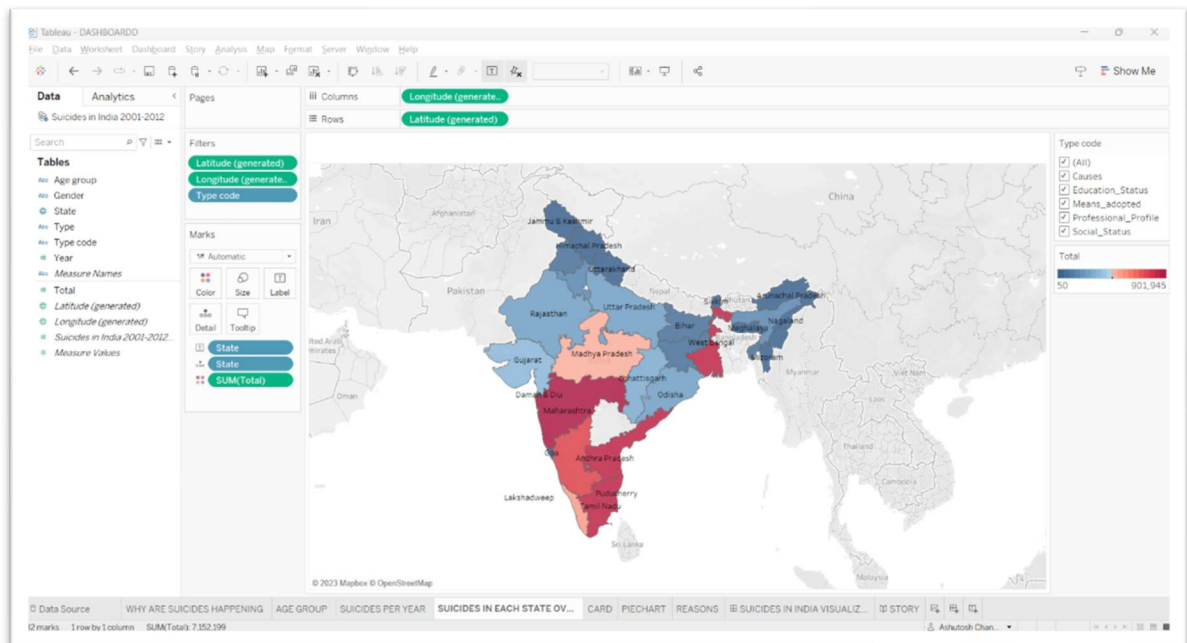
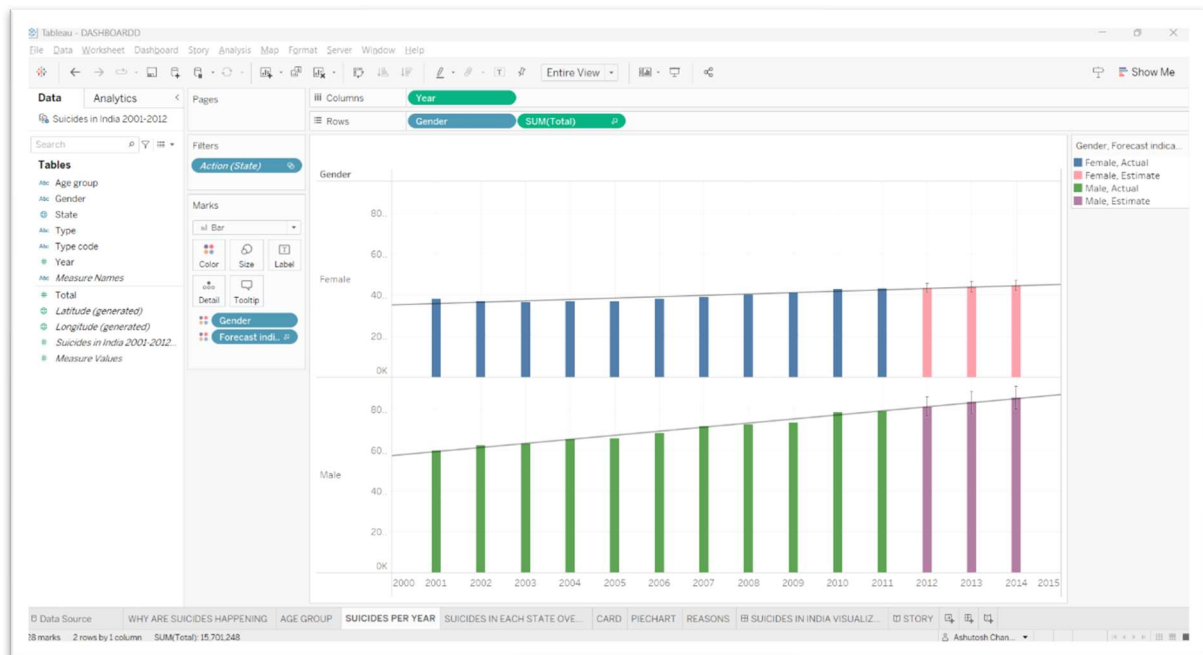
FLOWCHART:

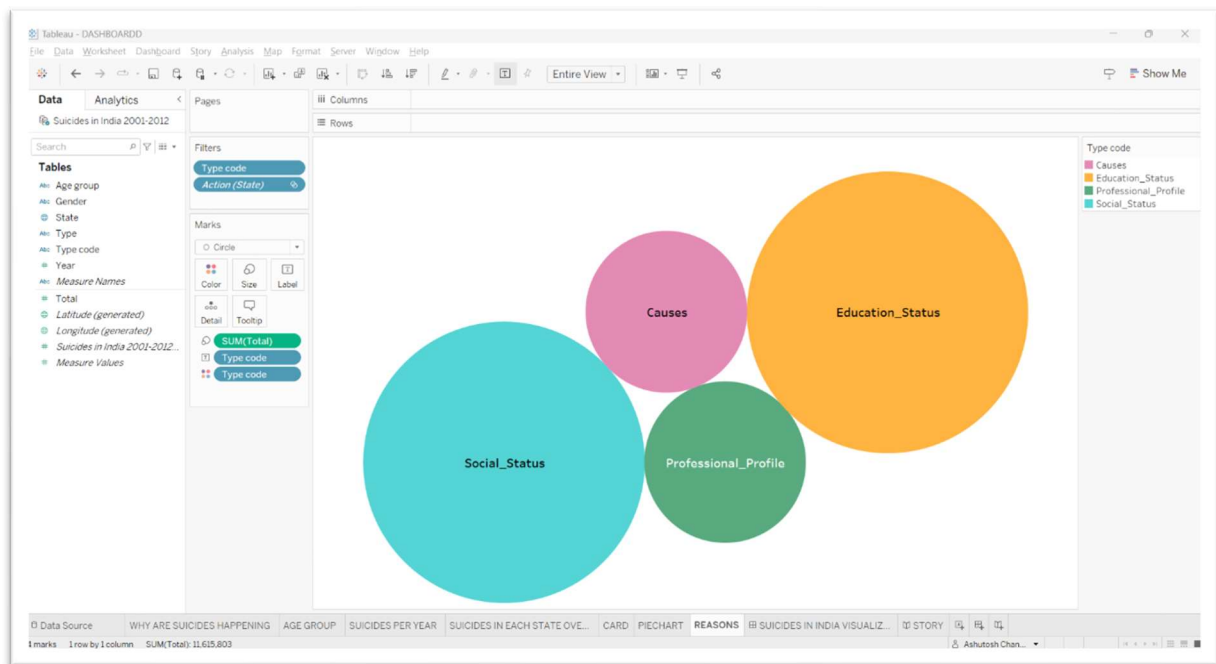
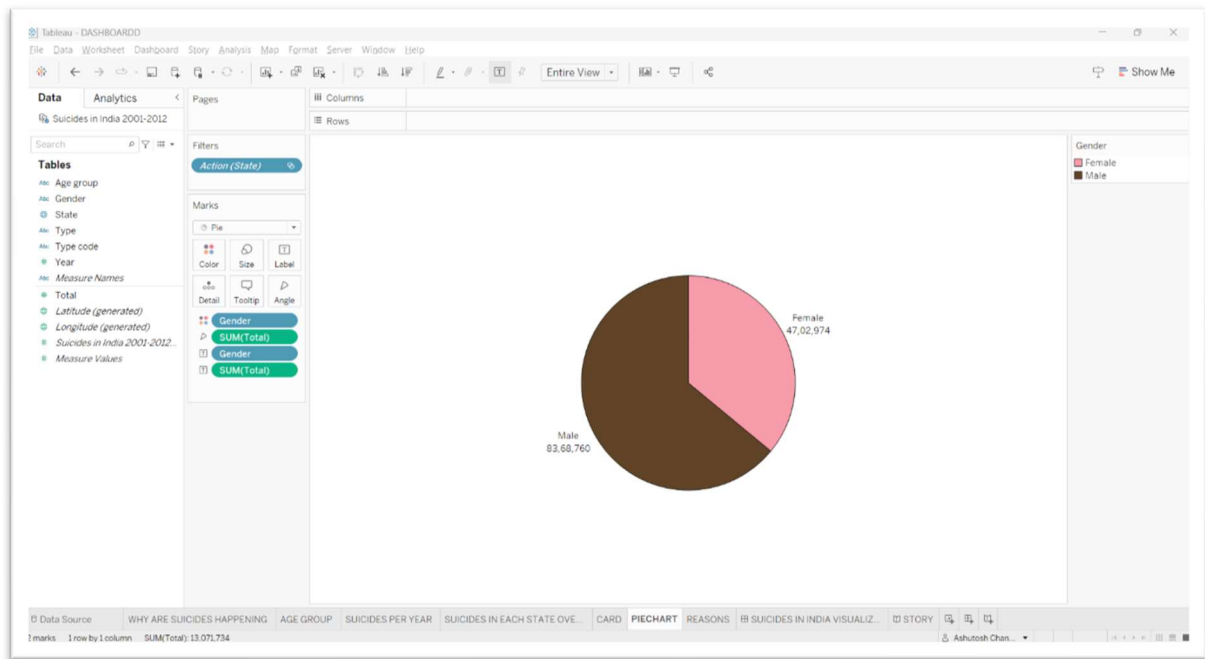


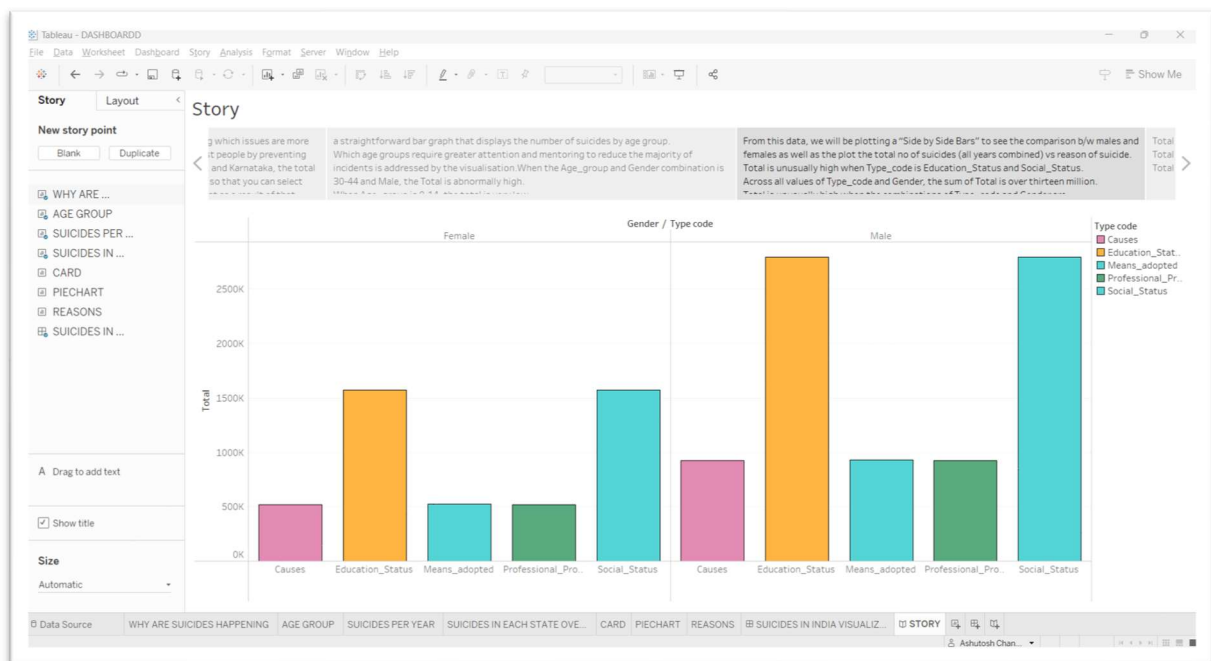
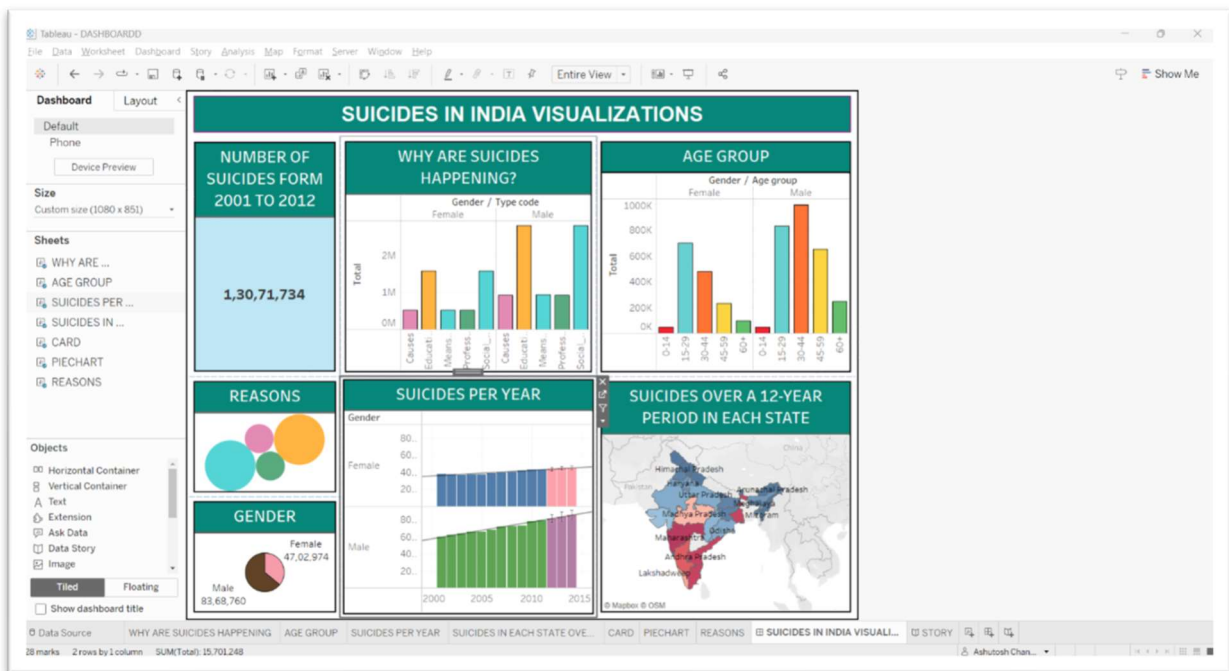
RESULTS

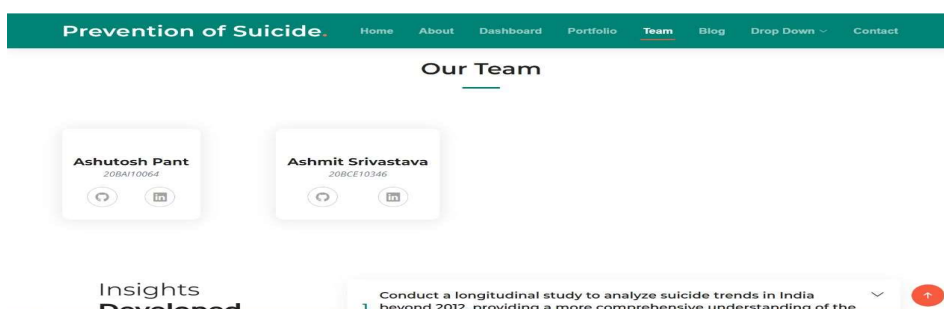
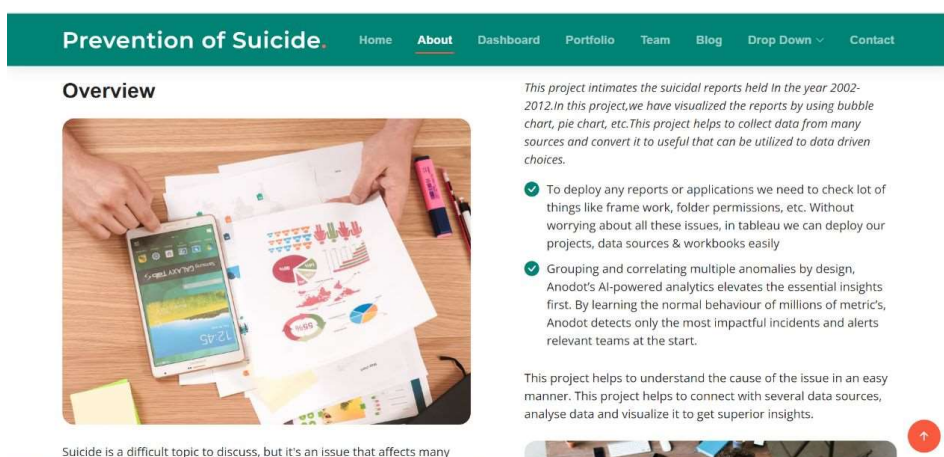
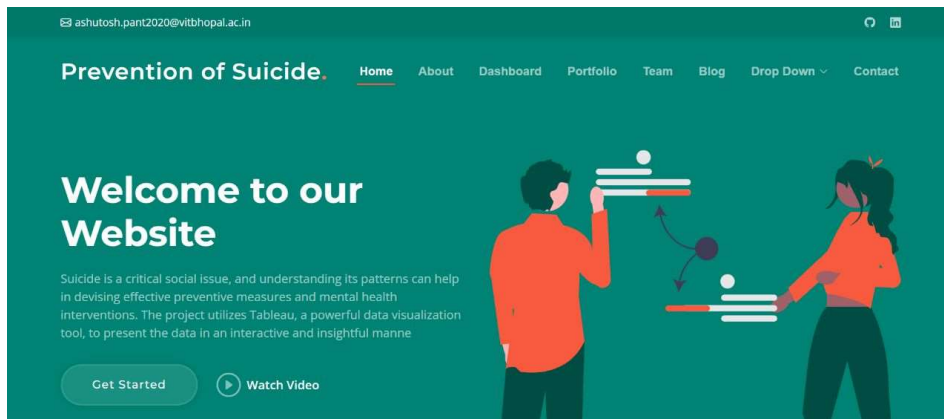
Screenshots of the visualizations, dashboard story and website created:











ADVANTAGES OF USING TABLEAU:

- The practise of visualisation can be extremely spiritual. You can connect with the divine more powerfully by going deeper inside of yourself with the help of precise visualisations and mental clarity. It is possible to enter deeper states of quiet and connection with your higher self and higher power through visualisation, which is a perfect starting place for meditation.
- There are three things about data visualisation that you should be aware of. The first is that data visualisation has developed into a quicker, more powerful instrument for motivation and communication. This resulted from the second aspect of data visualisation: most individuals learn best visually.
- It goes without saying that data visualisation tools are fantastic sales tools. TECHNOLOGICAL ADVANCEMENTS HAVE LED US TO RETHINK HOW DATA IS PRESENTED.

DISADVANTAGES OF USING TABLEAU:

- It could make the data analysis process more complex and expensive because it takes more time, effort, and expertise to create, build, and maintain than static charts.
- While the information is accurate in predicting the conditions, the impression of comparable just provides the assessment

APPLICATIONS

- Data visualization and reporting: Tableau is frequently used to produce interactive, aesthetically pleasing data visualizations and reports. In order to help stakeholders, get insights and make data-driven decisions, it enables users to present complex data in a straightforward and intelligible style.
- Data visualization includes strong geospatial capabilities, enabling users to make maps and conduct geographic analyses. Point maps, heat maps, and plethora maps are only a few of the several map visualizations that are supported. This is helpful for assessing location-based data, spotting geographic trends, and making decisions that take into account spatial considerations.
- Healthcare analytics: To analyze patient data, track healthcare results, and boost operational effectiveness, the healthcare sector is using data visualization more and more. It helps with tracking disease outbreaks, identifying healthcare trends, visualizing clinical data, and allocating resources more effectively.
- Analytics for human resources: Tableau helps HR professionals analyze and visualize workforce data. It aids in measuring employee engagement, providing HR reports and dashboards, and tracking employee performance.

CONCLUSION

The visualizations of suicides in India from 2001 to 2012 offer crucial insights into the patterns and trends of this pressing problem, in conclusion. The study of the data at hand reveals several significant findings:

- Overall Increase: The visualizations show that there was an overall rise in suicides in India over the time period. This implies a rising concern and emphasizes the need for preventative actions to address the social and mental health issues that contribute to suicides.
- Gender Inequality: There is an obvious gender difference in suicide rates, with men routinely committing more suicides than women. This trend should drive focused initiatives and awareness efforts designed to recognize and solve the particular difficulties that each gender faces.
- Age Distribution: The visualizations show how the suicide rates vary depending on the age group. Young adults and the elderly appear to be more at risk of suicide than other age groups. This emphasizes the significance of specialized assistance and mental health treatments catered to these particular age populations.
- Regional Disparities: The data visualizations show that suicide rates vary between India's various states and regions. Recognizing and comprehending the underlying causes of these geographical variations, such as socioeconomic circumstances, cultural considerations, and accessibility to mental health resources, is essential.
- Causes and Contributing elements: Although the visualizations do not directly address the topic of suicide causes, they do provide a good place to start when looking for potential contributing elements. To go deeper into the root causes, such as mental health challenges, societal pressures, economic stress, and interpersonal issues, more investigation and analysis are required.
- The visualizations highlight the critical need for more mental health care and awareness efforts in India. Reduced stigma, improved access to mental health services, and promotion of mental health at the individual, communal, and social levels should be the main objectives of initiatives.
- The visualizations of suicides in India between 2001 and 2012 helped to highlight the scope and complexity of the problem. In order to effectively address the issue of suicide in India, they emphasize the necessity of implementing a multifaceted strategy that combines preventive measures, early intervention, policy changes, and community engagement.

FUTURE SCOPE

1. To gain a deeper understanding of the problem over time, conduct a longitudinal study to examine suicide trends in India beyond 2012.
2. To identify gaps and opportunities for improvement, examine the importance of access to mental health services and support systems in various Indian regions.
3. Examine the effectiveness of responsible reporting rules while analyzing the impact of media coverage of suicides and its possible impact on suicide rates.
4. Conduct qualitative research, such as focus groups or interviews, to collect personal accounts and insights on the underlying factors that contribute to suicides and the events that surround them.
5. Evaluate the success of current suicide prevention programs and initiatives in India, highlighting effective tactics and highlighting areas that need more attention.

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3. Nandi DN, Banarjee G, Boral GC. Suicide in West Bengal - A century apart. Indian J Psychiatry. 1978;20:155–60. [Google Scholar]

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- <https://interworks.com/blog/>
- <https://smartbridge.teachable.com/courses/vit-android>
- [application- development/lectures/47540849](https://www.udacity.com/course/vit-android)

APPENDIX

Links for the visualizations:

https://public.tableau.com/views/DASHBOARDDD_16883257283170/WHYARESUICIDESHAPPENING?:language=en-GB&publish=yes&:display_count=n&:origin=viz_share_link

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https://public.tableau.com/views/DASHBOARDDD_16883257283170/SUICIDESPERYEAR?:language=en-GB&publish=yes&:display_count=n&:origin=viz_share_link

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DASHBOARDS:

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https://public.tableau.com/views/DASHBOARDDD_16883257283170/STORY?:language=en-GB&publish=yes&:display_count=n&:origin=viz_share_link

STORY DEMONSTRATION LINK:

https://drive.google.com/file/d/1-Fqeo7S5emC23QbbVkwdc3hdnurPoMyW/view?usp=drive_link