Beyond Borders: Empowering Communities Against Human Trafficking

Murali Krishna Sundari,Nagesh Aluri,Nikhil Varma Pakalapati,Nithin Kunal Reddy Mandadi,Jeevan Kumari Chevula,Venkata Sravan Telu

1 Project Idea

Conduct in-depth research to gather comprehensive data on human trafficking trends, routes, and vulnerable demographics across countries. Utilize advanced data analytics to identify patterns and key areas of concern.So, through this project we intend to discover and analyze patterns in different demographics, where it is happening, the age groups which are being targeted and are the perpetrators being identified by the court of law.

2 Technology Summary

Data Analysis: Python (Pandas, NumPy)
Visualization: Tableau for generating insightful charts and visualizations

3 Architecture Diagram

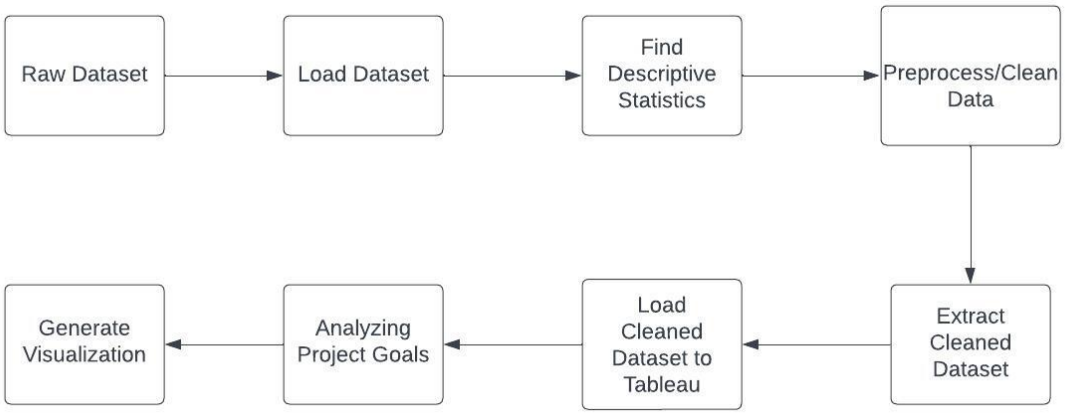

Fig. 1. Architecture Diagram

4 Architecture Summary

4.1 Collect Dataset

This process represents gathering data from various sources or databases.

4.2 Load Dataset

Using the Pandas library in Python, the collected dataset is loaded for further analysis.

4.3 Find Descriptive Statistics

Descriptive statistics and exploratory data analysis are performed on the loaded dataset to understand its characteristics.

4.4 Preprocess/Clean Data

Unwanted columns and data are removed, and necessary data cleaning operations are performed to prepare the data for analysis.

4.5 Extract Cleaned Dataset

The cleaned dataset is extracted after preprocessing, ready for visualization and analysis.

4.6 Load Cleaned Dataset to Tableau

The cleaned dataset is loaded into Tableau, a data visualization tool, for creating interactive visualizations.

4.7 Analyzing Project Goals and Generate Visualization

Project goals are analyzed to determine the key metrics and insights to be visualized.Interactive visualizations are generated in Tableau based on the analyzed data.

5 Project Goals

5.1 Goal-1

Distribution of different cases grouped by gender and age

5.2 Goal-2

Geographical representation of cases by origin of trafficking and where the destination of exploitation.

5.3 Goal-3

Cases of adults and minors over the years and the trend.

5.4 Goal-4

Finding which countries are hotspots for different age groups and genders.

5.5 Goal-5

Number of cases registered using different platforms(case management or hotline).

5.6 Goal-6

Reasons for trafficking, threats, and psychological abuse.

6 Project Description

Understanding Trafficking Reasons: The project delved into the reasons behind trafficking, highlighting prevalent factors such as threats and psychological abuse. This understanding emphasized the urgency of addressing these issues and implementing better data collection methods.

Awareness and Collaboration: By emphasizing the need for collaborative efforts between policymakers, law enforcement, and civil society organizations, the project underscored the importance of raising public awareness and creating collaborative platforms to address human trafficking comprehensively.

Identification of High-Risk Areas: The project successfully identified high-risk areas for human trafficking through geographical analysis, enabling targeted intervention and prevention efforts in these regions.

7 Results Summary

7.1 Code Snippets

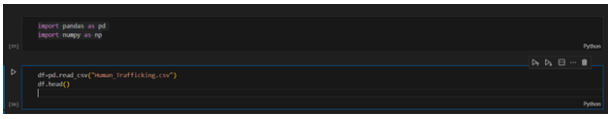

Fig. 2. Loading actual dataset to pandas and numpy modules

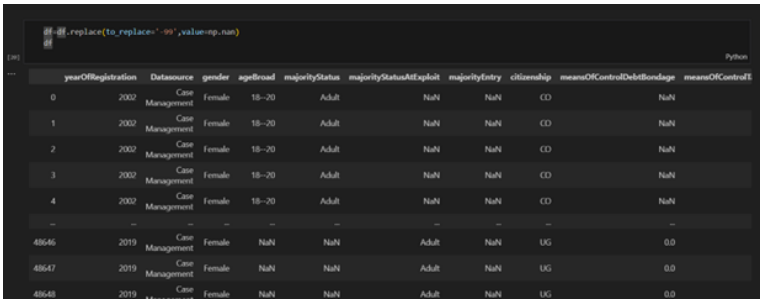

Fig. 3. Performing Imputations to the columns where data is -99 to NAN

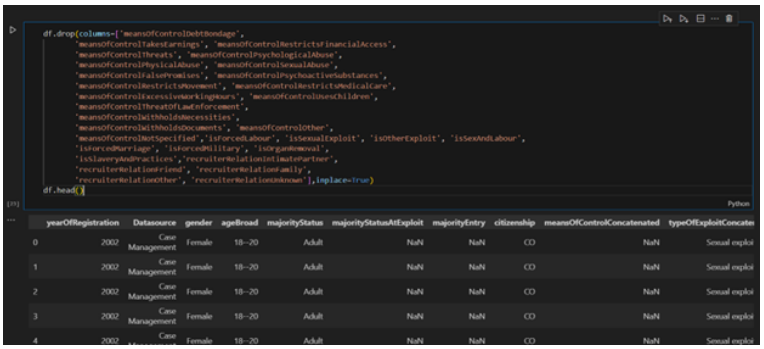

Fig. 4. Dropping unwanted columns

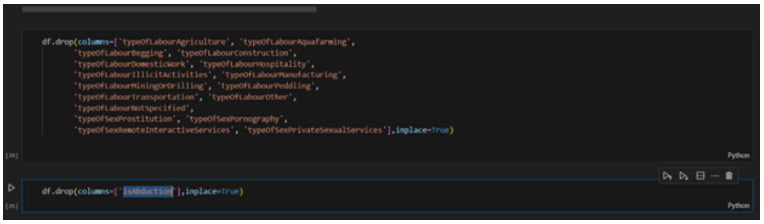

Fig. 5. Dropping unwanted columns

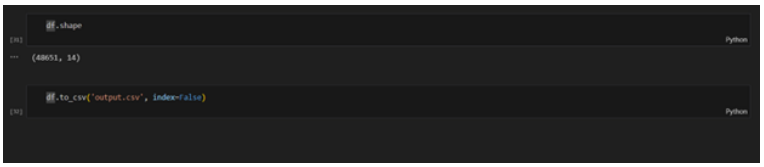

Fig. 6. Generating new data set from the cleaned dataset

7.2 Goal-1

From the Below chart, I want to showcase the distribution of different cases grouped by gender and age. Female Minors between 9-17 age group has the major number of cases (6,754).

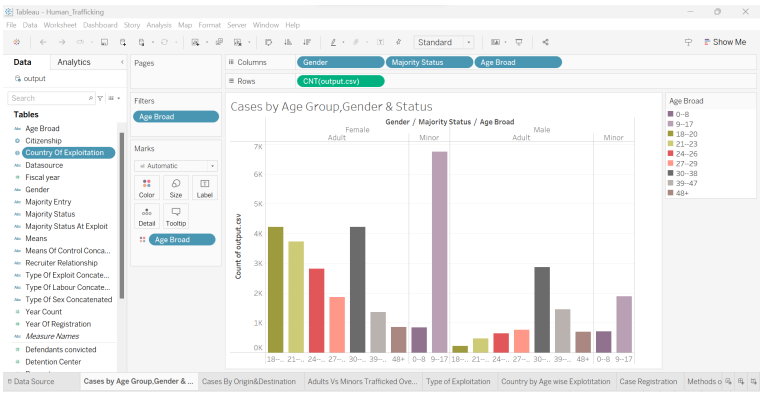

Fig. 7. Goal-01 Output

7.3 Goal-2

This geographical board shows countries where the people abducted and exploited are mostly not same, we see different international destinations which are hotspots where they are exploited.

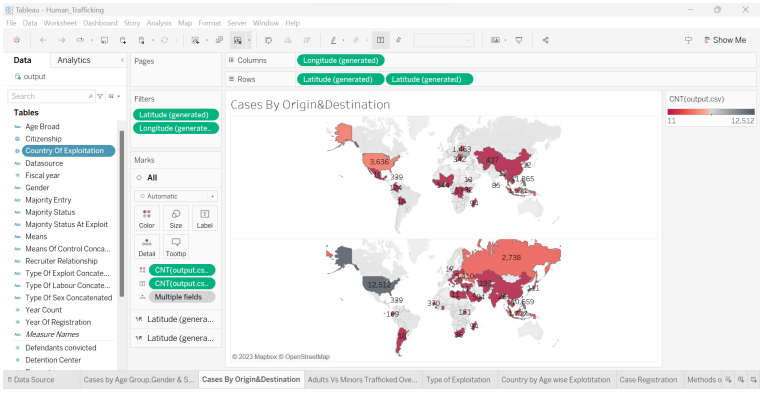

Fig. 8. Goal-02 Output

7.4 Goal-3

From the Below chart, adults trafficking seems to have decrease over the years, but the trafficking has been rising and the trend does show the same and also It is seen that in the year of 2017, total number of cases majority status of adults (4147) was registered.

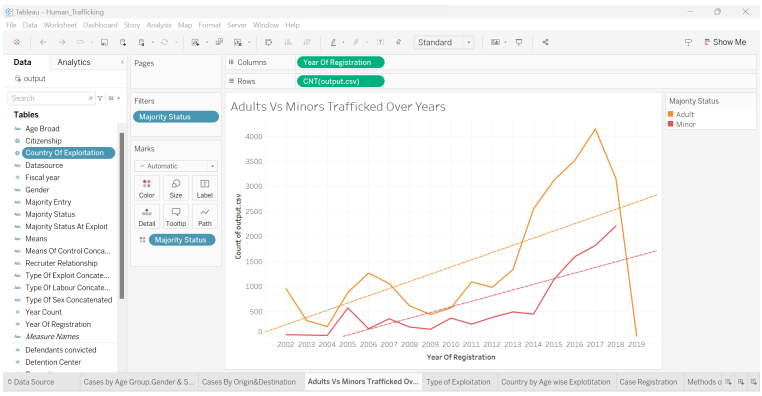

Fig. 9. Goal-03 Output

7.5 Goal-4

Georgical representation of cases with multiple filters to get insights which countries are hotspots for different age groups and genders.

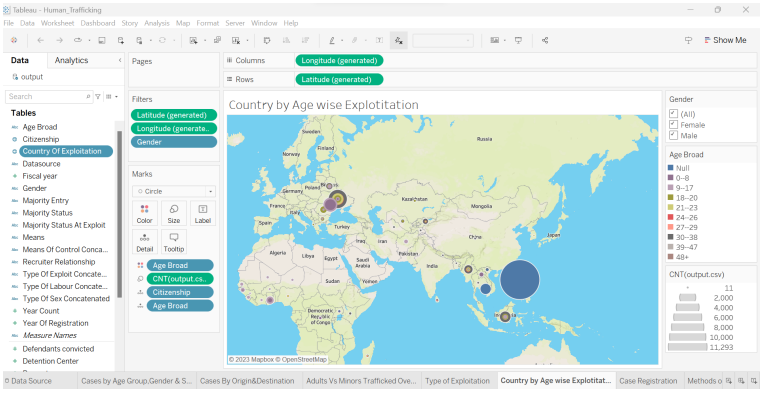

Fig. 10. Goal-04 Output

7.6 Goal-5

From the below chart, I have shown that Number of cases registered using different platforms like case management or hotline. In the year 2016, 13186 cases are registered using case management.

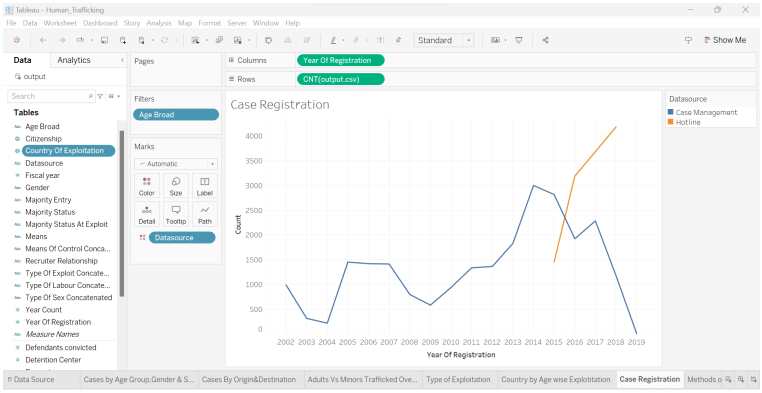

Fig. 11. Goal-05 Output

7.7 Goal-6

Main reasons for trafficking are threats and psychological abuse We could also most number cases in the chart are under other means, this is due to lack of exact information from the victims and organizations. This shows the need for a better data collection and collaborative platforms.

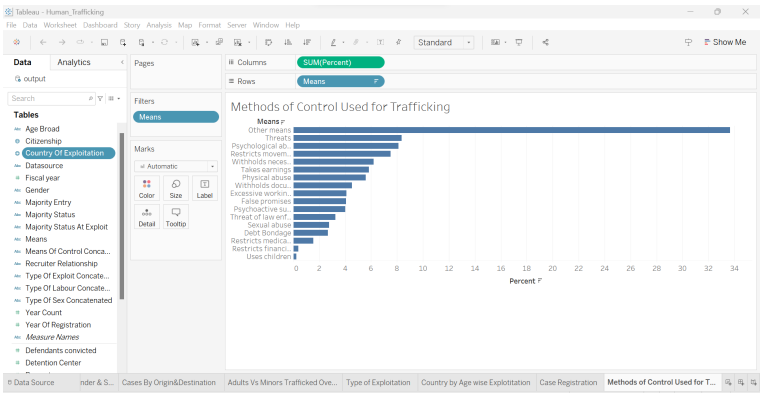

Fig. 12. Goal-06 Output

8 Conclusion

In this project on human trafficking, we analyzed and visualized data to gain insights into the nature and extent of human trafficking. Through our analysis, we identified high-risk areas for human trafficking and highlighted the need for policymakers, law enforcement agencies, and civil society organizations to collaborate and take preventative action to prevent and combat this issue.

Based on our findings, we identified several managerial implications for non-profit organizations and government agencies, including the need to allocate resources to high-risk areas, put in place policies and procedures to prevent human trafficking within their organizations and supply chains, partner with non-profits, and raise public awareness about the issue. To address these managerial implications, we recommend that agencies take specific actionable steps, such as conducting data analysis, task force creation, resource allocation, implementation of policies and procedures, collaboration with non-profits, public awareness campaigns, and progress monitoring. While our visualization has helped to shed light on some of the key trends and patterns in the data, we acknowledge that our analysis has certain limitations, such as the possibility that our data set may not capture the full extent of human trafficking, particularly in cases where victims are not identified or reported. Nevertheless, we hope that our work will contribute to ongoing efforts to create a world free from human trafficking.

9 Citations

GitHub
- DataSet
- Tableau DashBoard
- Tableau DashBoard Design
- Story Telling
- Tableau Desktop
- NumPy
- Pandas []