Accident Data Analysis Report

1. Introduction

Traffic accidents are a major concern worldwide, impacting lives and infrastructure. This report analyzes accident data from 2019 to 2022 using interactive visualizations in Tableau. The goal is to identify key trends, risk factors, and actionable insights to improve road safety.

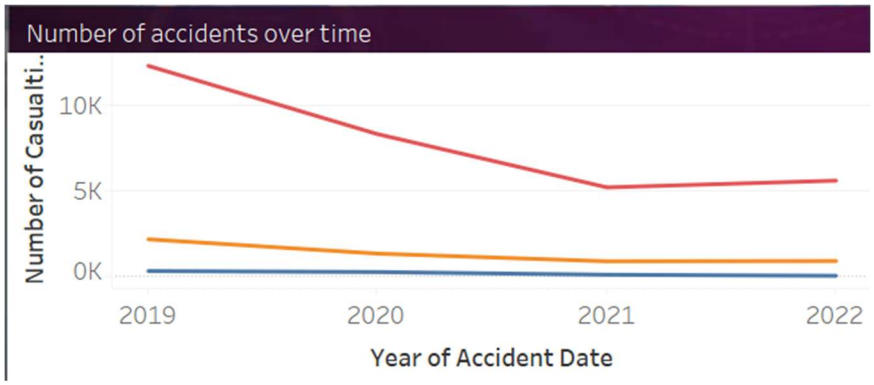
2. Data Overview

- **Dataset:** Accident records from 2019 to 2022.
- **Key Attributes:** Accident count, casualties, vehicle types, weather conditions, lighting conditions, and geographic distribution.
- **Visualization Tool:** Tableau Dashboard with interactive filters and maps.

3. Key Findings

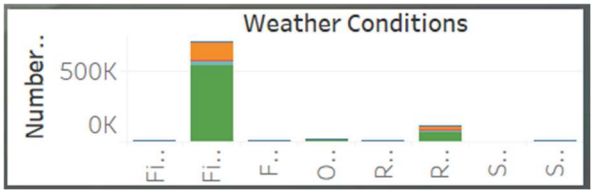
3.1 Accident Trends Over Time

- The highest number of accidents occurred in **2019**, with a sharp decline in 2020-2021, followed by a slight rise in 2022.
- The total number of reported accidents in **2022** was **4**, significantly lower than in previous years.



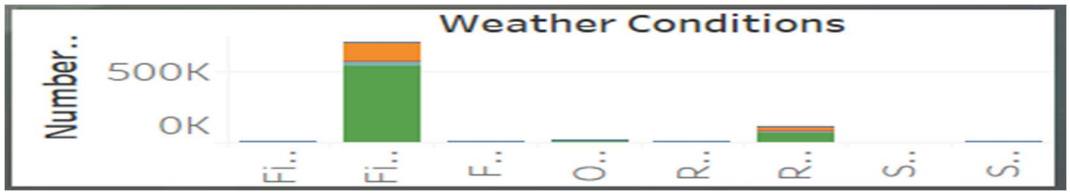
3.2 Casualty Analysis

- The number of casualties follows the same trend as accident counts.
- A strong correlation exists between accident frequency and **lighting conditions** at the time of the incident.



3.3 Impact of Weather Conditions

- Most accidents occurred in **clear weather conditions**, indicating that human factors (e.g., speeding, distractions) are the primary causes.
- A smaller percentage of accidents happened in **rainy or foggy weather**, but these accidents might have been more severe.

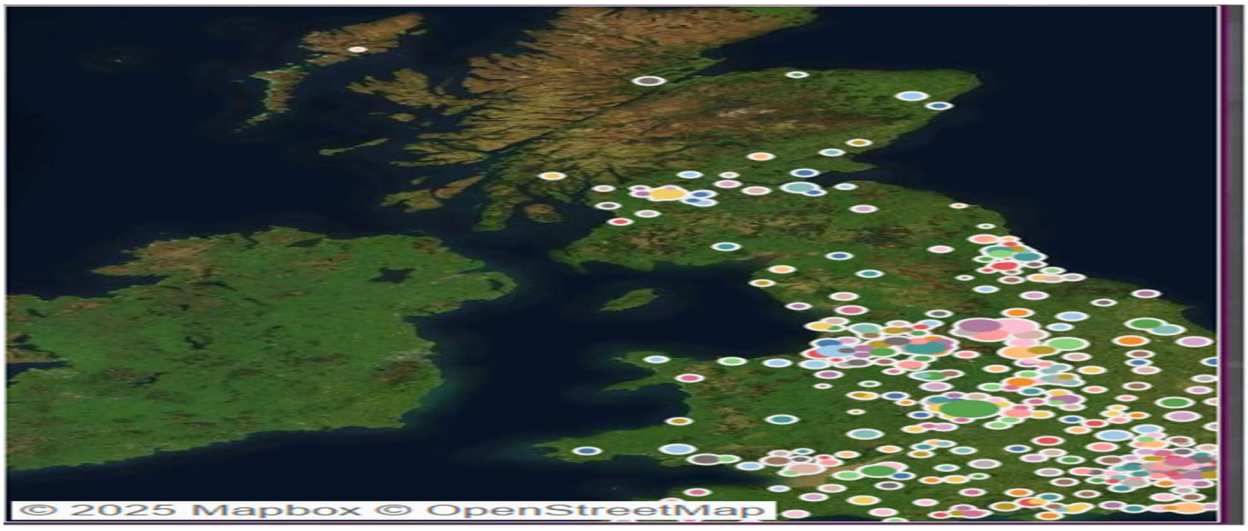


3.4 Influence of Lighting Conditions

- **Nighttime accidents with streetlights** accounted for a significant portion, suggesting a need for improved nighttime driving regulations.
- Fewer accidents occurred during daylight hours, reinforcing the importance of visibility in road safety.

3.5 Geographic Distribution

- Accident hotspots are concentrated in specific areas, as visualized in the **interactive map**.
- This geographic clustering indicates areas that require better traffic management or infrastructure improvements.



4. Recommendations

🛠 **Improve Road Lighting**: Strengthening lighting in accident-prone areas can reduce nighttime incidents.

💪 **Enhance Driver Awareness Programs**: Targeted awareness campaigns about risky driving behaviors, especially at night.

🏛 **Strengthen Traffic Laws & Enforcement**: Implement stricter regulations for speeding, distracted driving, and driving under the influence.

🚗 **Infrastructure Improvements**: Identify and improve high-risk zones with better signage, road conditions, and pedestrian crossings.

5. Conclusion

Analyzing traffic accidents using Tableau provided crucial insights into accident trends, contributing factors, and improvement opportunities. By implementing the suggested recommendations, road safety can be significantly enhanced, reducing casualties and accident occurrences.

👉 *For more details, explore the interactive dashboard on Tableau Public*

https://public.tableau.com/views/Drbasant/Dashboard1?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link