Car Accident Analysis Report

Overview

This report presents an analysis of car accidents based on the provided dataset and visualized using Tableau. The objective is to identify trends, patterns, and actionable insights to help reduce the number of accidents.

Key Findings

1. General Decline in Accidents Over Time

- The number of casualties has steadily decreased from **247,780 in 2019** to **195,737 in 2022**.
- This indicates improvements in road safety measures and possibly better traffic regulations over the years.

2. Urban vs. Rural Accidents

- **Urban areas have a significantly higher number of casualties (543,024) compared to rural areas (353,515).**
- The trend suggests that urban roads are more accident-prone due to increased vehicle density and complex traffic conditions.

3. Road Type and Accident Severity

- **Single Carriageway** roads have the highest number of casualties (**324,117 in urban areas and 168,010 in rural areas**).
- **Dual Carriageways and Roundabouts** have fewer casualties, indicating safer road design.
- **Slip roads have the lowest accident rates**, showing their effectiveness in reducing sudden lane changes and high-speed merges.

4. Casualty Trends by Year and Region

- Both urban and rural accident rates show a downward trend.
- Urban accident rates remain higher despite the decline, emphasizing the need for better city traffic management.

Actionable Recommendations

1. Improve Urban Traffic Management

- Implement **smart traffic signals** and AI-based traffic control to reduce congestion.
- Introduce **dedicated lanes for motorcycles and bicycles** to reduce collisions.
- Strengthen **speed control measures** in high-risk areas.

2. Enhance Road Safety Measures

- Expand **dual carriageway systems** where feasible to minimize high-speed crashes.
- Improve **road signage and lighting**, especially at accident hotspots.
- Implement stricter enforcement of **seatbelt and helmet laws**.

3. Public Awareness Campaigns

- Conduct **driver education programs** focusing on accident-prone areas.
- Launch **awareness campaigns** about speed limits, distracted driving, and drunk driving.

Publishing & Documentation

- The **Tableau dashboard** will be published on **Tableau Public** for public access.
- All files, including data sources and analysis scripts, will be uploaded to **GitHub**.
- This report will be included as a README file in the repository.

Conclusion

The analysis highlights the importance of **road design, urban traffic control, and driver awareness** in reducing accident rates. By implementing data-driven recommendations, authorities can enhance road safety and reduce casualties significantly.