

Traffic Accident Analysis Summary Report

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Project Title: Traffic Accident Data Dashboard Analysis (UK)

1. Analysis Approach

The goal of this analysis was to explore patterns, trends, and insights from UK road accident data using interactive dashboards. The analysis was conducted using Power BI and covered the following dimensions:

- Accident severity
- Day and time of accidents
- Weather and road surface conditions
- Road and vehicle types
- Junction controls and hazards
- Geographical mapping of accidents

2. Key Findings & Insights

a) Overview of Accidents

- **Total Accidents:** ~308K
- **Total Casualties:** ~418K
- **Accident Severity:**
 - Slight: **85.5%**
 - Serious: **13.2%**
 - Fatal/Fetal: **Negligible(<3K)**
- **Accidents by Day:**
 - Most accidents occurred on **Fridays (51K)**.
 - Lowest on **Sundays (34K)**.
- **Most Casualties by Day:**
 - **Saturday** saw the highest number of casualties (68K).

b) Road & Environmental Conditions

- **Road Surface:**

- **Dry roads** saw the most accidents (0.2M), mostly slight.
- **Wet/damp roads** also had a significant number of accidents.
- **Weather Conditions:**
 - **Fine, no wind** conditions dominated (78.6% of accidents).
 - **Rain-related accidents:** 20K
 - **Fog, snow, or high wind** contributed to a smaller portion.
- **Light Conditions:**
 - **Daylight:** 74% of all accidents occurred during daylight.

c) Road Types and Junctions

- **Road Types:**
 - Majority accidents occurred on **Single carriageway roads (74.9%)**.
- **Junctions:**
 - Most accidents happened at **'Give way or uncontrolled'** junctions (160K).
 - Highest casualties occurred at **Crossroads (40.7%)**.

d) Vehicle Types

- **Cars** were the most involved vehicle type in accidents .
- Vans and motorcycles followed but with much lower figures.

e) Geographic Distribution

- Accidents are **densely clustered in urban areas** like **London, Birmingham, Manchester**, and other populous regions.

f) Time-Based Trends

- **Peak Accident Month: November**
- **Lowest Month: February**
- Accident rates tend to **increase towards year-end**.
- Casualty count has **increased over quarters**, indicating a rising trend.

3. Recommendations

- **Targeted interventions on Fridays and in November** may reduce incidents.
- Focus awareness on **wet/damp road safety** and **urban junction management**.
- Enhance **signage and visibility at uncontrolled junctions**.
- Encourage safer driving practices during **daylight**, despite it being the peak time.
- **Data completeness improvement** .

4. Tools Used

- Visualizations: Line graphs, bar charts, pie charts, maps
- Public UK Accident Dataset

5. Conclusion

This analysis provides a data-driven view into the causes and patterns of road accidents in the UK. It enables stakeholders to implement data-backed road safety measures, especially targeting high-risk times, road types, and weather conditions.