

**Traffic Accident Prediction**

**Name:** Snehal Pawar

This report is designed to analyze and predict traffic accident patterns using column data, advanced analytics, and visualization capabilities in Power BI.

It provides actionable insights to improve road safety and resource allocation.

**Objectives**

* Identify trends and patterns in traffic accidents.
* Predict high-risk areas, times, and conditions for accidents.
* Inform decision-making to improve road safety and reduce accidents.
* Allocate resources effectively, such as traffic police, emergency services, and infrastructure improvements.

**Data**

* Historical Accident Data: Time ,severity, type of Road , etc.
* Environmental Data: Weather conditions, road conditions.
* Traffic Data: Volume of traffic, speed limits, road type.
* Demographic Data: Age and behavior of drivers.

**Key Features**

**Data Overview and Summary**

* Total number of accidents over the years.Breakdown of accidents by type, severity, time.
* Interactive maps showing accident hotspots.

**Predictive Analytics**

* Forecasting: Predict future accident occurrences based on Column trends.
* High-Risk Zone Identification: Using visualization techniques to highlight accident-prone areas.
* Contributing Factors Analysis: Correlation between factors like weather, time of day, and accident frequency.

**Visualizations**

* Column Chart(Interactive Maps):

Visualize Road type and their severity.

* Line chart( Trend Analysis):

Line charts for accident trends over time.

* Donut Chart 1:

Understand the distribution of accident across different

vehicle types.

* Donut Chart 2:

To analysis the chart Road light condition wise Accident.

* Donut Chart 3:

To analyze the chart speed limit wise accident severity.

* Bar Chart:

Assess the impact of Traffic Density on Time Of Day.

**Insights and Recommendations**

* High-Risk Areas: Certain intersections or highways with frequent accidents.
* Time-Based Risks: Increased accidents duringtome of days, adverse weather.
* Preventive Measures: Need for better lighting, road type, and traffic control in high-risk zones.

**Conclusion**

Our objective is to craft a suite of interconnected dashboards that deliver dynamic and comprehensive insights into our Traffic Accidents decision-makers with actionable intelligence derived from robust data analysis.

These dashboards are meticulously design offer a holistic perspective on our lending operations, Accident performance, Time of Day, limit of speed , decision-making based on data-driven insights.