

Road Accident Dashboard Project

Project Description:

A major issue that has an impact on communities all across the world is road safety. In this project I have created a Road Accident Analytics Dashboard, a powerful tool designed to analyze and visualize road accident data for the years 2021 and 2022. This Excel-based dashboard empowers stakeholders with valuable insights to make data-driven decisions and pave the way towards safer roads.

Technologies Used:



Technical Skills Demonstrated:

- Data Cleaning, Data Transformation, Data Analysis.
- Filtering, Sorting and Conditional function.
- Pivot Tables and Pivot Chart.
- Data Visualization and Dashboard creation.

Requirements and KPIs:

The client wants to create a Road Dashboard for years 2021 and 2022 so that they can have insight on the below requirements: -

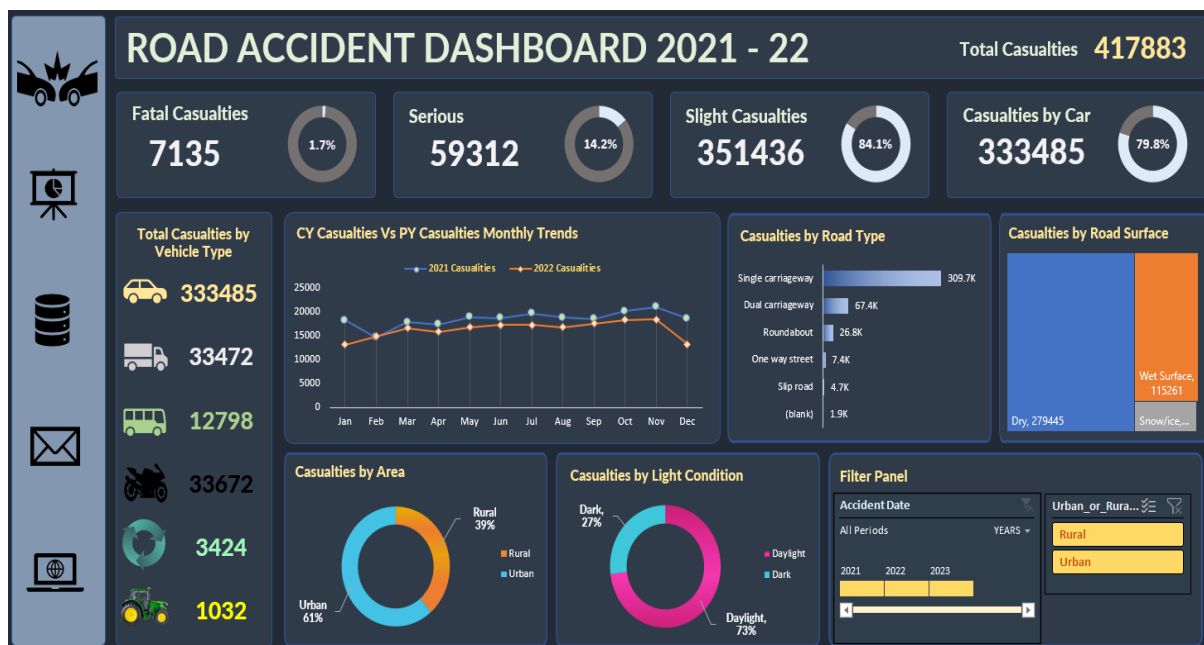
- **Primary KPI** - Total casualties taken place after the accident
- **Primary KPIs** - Total Casualties & percentage of total with respect to accident severity and maximum casualties by type of vehicle
- **Secondary KPIs** - Total Casualties with respect to vehicle type
- Monthly trend showing a comparison of casualties for the Current Year and the Previous Year
- Maximum casualties by Road Type
- Distribution of Total casualties by road surface
- Relation Between Casualties by Area / Location & by Day/Night

Steps Followed:

The following steps were followed during the project:

1. **Data Cleaning:** In this step, the data was cleaned by removing inconsistencies, errors, and duplicates. The goal was to ensure the accuracy and reliability of the data for further analysis. Example- Replaced Fetal to Fatal in Accident_Severity Column, Replaced Auto traffic sig to Auto traffic signal in Junction_Control Column.
2. **Data Processing:** New columns were created to organize, sort, and filter the data for extracting meaningful insights. Example - Add a column of Month by applying formula =TEXT(B2,"MMMM"), Add a column of Year by applying formula =TEXT(B23,"MMMM")
3. **Data Analysis:** Various statistical methods were applied to derive valuable insights from the data.
4. **Data Visualization:** Excel was utilized as a visualization tool to create attractive charts, graphs, and interactive visuals for presenting the data in an easily understandable manner.
5. **Dashboard Creation:** Finally, a dashboard was built in Excel by incorporating slicers and timelines, enabling users to interact with the data and explore different perspectives.

Dashboard:



Finally, the dashboard was created by inserting and customizing the pivot charts of corresponding pivot table. Slicers and timelines were added. Hyperlinks and connections were also added to necessary icons for navigation.

Total Casualties Analysis: The dashboard reveals that a staggering 417,883 casualties occurred after accidents during the two-year period

Peak Months: Overall the number of casualties were slightly higher in 2021 than 2022. Maximum Casualties happened in the month of October and November in both the Years and minimum casualties take place in the month of January and February.

Casualties by Vehicle Type: Car accidents are the highest number of casualties, contributing to 79.8% of the total. On the other hand, casualties were minimal in accidents involving other vehicle types.

Casualties by accident severity Slight severity form the bulk of casualties 84.1% whereas there are only 1.7% Fatal severity casualties occurred.

Road Type Analysis: Maximum Casualties by Single Carriageway Road type (309.7K) and Minimum by Slip Road (4.7K).

Casualties by Road Surface: Highest Distribution of total casualties on Dry Road surfaces around (279445).

Casualties by Area/Location: Urban areas form the majority of casualties after an accident (61%)

Casualties by light condition: 73% of casualties take place in daylight condition.