ROAD ACCIDENT DASHBOARD

* PURPOSE

The purpose of this Power BI dashboard is to analyse road accident data and identify patterns and trends that can help improve road safety. First step is to Import the data into Power BI and clean it to ensure it was accurate and ready for analysis. The data includes information about accidents, such as the number of vehicles involved, severity of the accident, and the location and time of the accident.

* **STEPS FOLLOWED**

Some steps that I followed during the project:

Data Cleaning: In this step includes removing inconsistencies in data, errors, and duplicates and ensuring that the data with which I worked is accurate and reliable for further analysis.

Data Processing: Creating some new columns that involved organizing, sorting, and filtering the data to extract meaningful insights.

Data Analysis: Used various statistical methods to get valuable insights from the data.

Data Visualization: Used Excel as a visualization tool. With the help of this, I have created attractive charts, graphs, and interactive visuals to present the data in an easy way.

Dashboard Making: Finally, I built a dashboard in Excel by inserting slicers and timelines that allow users to interact with the data.

* REQUIREMENTS

Clients wants to create a Road Accident Dashboard for year 2021 and 2022 so that they can have insight on the below requirements-

* Primary KPI - Total Casualties and Total Accident values for Current Year and YoY growth
* Primary KPI's — Total Casualties by Accident Severity for Current Year and YoY growth
* Secondary KPI's - Total Casualties with respect to vehicle type for Current Year
* Monthly trend showing comparison of casualties for Current Year and Previous Year
* Casualties by Road Type for Current year
* Current Year Casualties by Area/ Location & by Day/ Night
* Total Casualties and Total Accidents by Location
* STAKEHOLDER (Current user of your Dashboard)
* Ministry of Transport
* Road Transport Department
* Police Force
* Emergency Services Department
* Road Safety Corps
* Transport Operators
* Traffic Management Agencies
* Public
* Media
* POWER BI FUNCTIONALITIES (Used in the Project)
* How to connect to raw data/ flat file
* Data Cleaning in Power Query
* Data Processing
* Time Intelligence Function/ Calendar Date Table in Power BI
* Data Modelling (Relationship between multiple tables)
* YTD and YoY Growth Calculations using DAX
* KPI and Advanced KPI Generations
* Creating custom columns and measures in the reports
* Importing Images
* Creating different charts and generating insights
* Export the report to users
* DATA ANALYSIS EXPRESSIONS (DAX) [**Formulas Used in Measures**](https://github.com/IsaacMwendwa/Power-BI-Road-Accidents-Analysis-Dashboard#dax-formulas-used-in-measures)

**1. Total Casualties For Current Year and Year on Year Growth**

1. Current Year To Date Casualties -- CY Casualties Measure

* CY Casualties = TOTALYTD(SUM(Data[Number\_of\_Casualties]), 'Calendar'[Date])

1. Previous Year Casualties -- PY Casualties Measure

* PY Casualties = CALCULATE(SUM(Data[Number\_of\_Casualties]), SAMEPERIODLASTYEAR('Calendar'[Date]))

1. Year on Year Growth of Casualties - YoY Casualties Measure

* YoY Casualties = ([CY Casualties] - [PY Casualties])/[PY Casualties]

**2. Total Accidents for Current Year and Year on Year Growth**

1. Current Year Accidents Count -- CY Accidents Count Measure

* CY Accidents Count = TOTALYTD(COUNT(Data[Accident\_Index]), 'Calendar'[Date])

1. (b) Previous Year Accidents Count -- PY Accidents Count Measure

* PY Accidents Count = CALCULATE(COUNT(Data[Accident\_Index]), SAMEPERIODLASTYEAR('Calendar'[Date]))

1. (c) Year on Year Growth of Accidents - YoY Accidents Measure

* YoY Accidents = ([CY Accidents Count]-[PY Accidents Count])/[PY Accidents Count]