Road Accident Analysis (Excel)

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Project Overview:

Objective:

The primary objective of the Road Accident Data Analysis project is to conduct a thorough examination of road traffic accidents in the UK for the years 2021 and 2022. By leveraging Excel-based analysis and visualization tools, the project aims to create a Road Accident Dashboard that sheds light on the key factors contributing to accidents. The insights derived from this analysis are intended to inform evidence-based decision-making for road safety initiatives.

Description:

Road traffic accidents stand as a global menace, causing injuries and fatalities. This project endeavours to tackle this issue by developing a comprehensive Road Accident Dashboard in Excel. The analysis focuses on uncovering critical insights into road accidents in the UK for 2021 and 2022, spanning total casualties, accident severity distribution, vehicle involvement, monthly trends, road types, road surface conditions, geographical areas, and light conditions. The goal is to extract actionable findings to guide targeted road safety measures.

Key Findings:

- ✓ **Total Casualties and Severity Analysis:**
  - Fatal casualties constitute a significant proportion of total casualties.
  - Distribution of casualties across severity levels: Fatal, Serious and Slight.

- ✓ **Casualties by Vehicle Type:**
  - Identification of vehicle types contributing most to total casualties.
  - Insights into high-risk vehicles for targeted safety measures.

- ✓ **Monthly Trend Comparison (2021 and 2022):**
  - Seasonal patterns observed in monthly casualties.
  - Comparative analysis between 2021 and 2022 highlights trends and variations.

- ✓ **Maximum Casualties by Road Type:**
  - Identification of road types associated with the highest casualty rates.
  - Insights for focused interventions on specific road types.

- ✓ **Distribution of Total Casualties by Road Surface:**
  - Analysis of the correlation between road surface conditions and casualties.
  - Identification of road surface factors impacting accident outcomes.

- ✓ **Casualties by Area and Light Conditions:**
  - Relationship between accident casualties and geographical areas.
  - Impact of varying light conditions on accident severity.

Recommendations:

Targeted Vehicle Safety Initiatives:

  o Develop targeted safety initiatives for high-risk vehicle types identified in the analysis.

Seasonal Road Safety Campaigns:

  o Implement seasonal road safety campaigns based on the observed monthly trends.

Road Type-Specific Measures:

  o Tailor safety measures based on the type of road associated with maximum casualties.

Road Surface Quality Improvement:

  o Invest in road surface quality improvements to mitigate accident risks.

Geographical Area-Specific Interventions:

o Implement area-specific interventions addressing unique challenges in accident-prone regions.

Enhanced Lighting Infrastructure:

o Improve lighting infrastructure in identified areas with a high correlation between light conditions and accident severity.

Project Impact:

- Informed decision-making for road safety initiatives.
- Enhanced understanding of the factors contributing to road accidents.
- Basis for the formulation of targeted policies to reduce injuries and fatalities.

Conclusion:

The Road Accident Data Analysis project, conducted through Excel-based tools, has unveiled critical insights into the dynamics of road accidents in the UK. The resulting Road Accident Dashboard equips stakeholders with actionable information to guide evidence-based road safety policies and interventions. By addressing the identified risk factors and leveraging the findings, the project contributes to the overarching goal of reducing injuries and fatalities on UK roads.

Dashboard: