

ROAD ACCIDENT ANALYSIS | EXCEL

DATA ANALYST | NILESH PATIL

MISSION OBJECTIVE

SAFETY ANALYTICS

Developing a robust data infrastructure to transform raw accident records into high-impact visual intelligence. Our goal is to empower road safety authorities with evidence-based risk assessment tools.

This project bridges the gap between massive transactional datasets and localized safety interventions.



CASUALTY SEVERITY

2,855

FATALITIES

27,045

SERIOUS INJURIES

1,658

SLIGHT INJURIES

TECHNICAL METHODOLOGY



ETL PROCESS

Extracted and standardized raw multi-year data. Cleaned categorical inconsistencies and removed duplicate records in Excel.



DATA MODELING

Engineered calculated columns for Year/Month and Casualty Types. Built a structured relational model within Pivot Tables.



DASHBOARDING

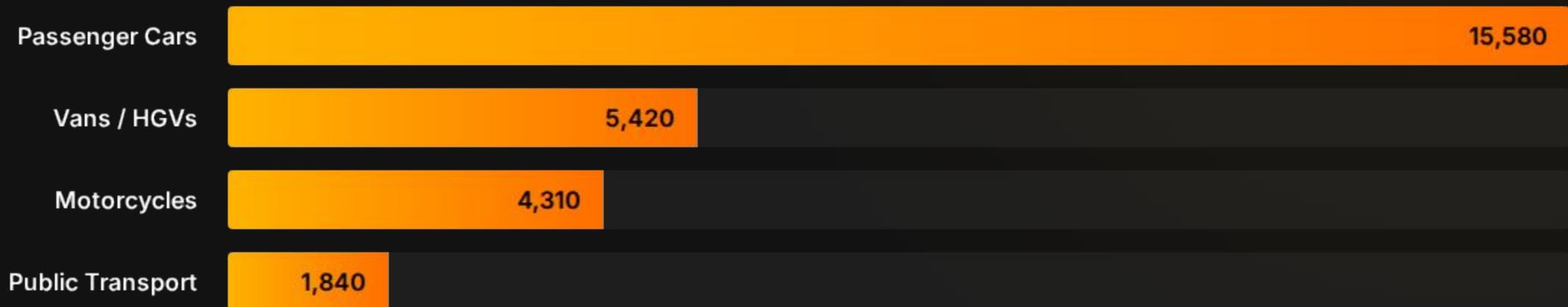
Deployed interactive slices and KPI cards. Automated Current Year vs. Previous Year (CY vs. PY) comparisons.

IMPACT DISTRIBUTION



- Fatal Casualties (9%)
- Serious Casualties (86%)
- Slight Casualties (5%)

VEHICLE SEGMENT IMPACT



Cars contribute the largest share of casualties in the analyzed timeframe.

ROAD INFRASTRUCTURE

SINGLE CARRIAGEWAY RISK

The majority of casualties are concentrated on **single carriageway** road types. This highlights a critical need for physical median barriers or lane-departure warning systems.

Dual carriageways and roundabouts show significantly lower fatality densities, emphasizing the safety benefits of controlled intersections.



REGIONAL RISK MATRIX



-  **Urban Density:** Higher accident concentration due to intersection frequency and high pedestrian-vehicle interactions.
-  **Rural Severity:** Lower frequency but higher severity rates, often linked to higher vehicle speeds on single carriageways.

VISIBILITY & CONDITIONS



DAYLIGHT PARADOX

Surprisingly high casualty counts in daylight. This correlates with peak-hour traffic volume and driver distraction.



ROAD SURFACE

Wet roads significantly increase "Slight" and "Serious" casualties, emphasizing the need for better tyre safety enforcement.

TREND IDENTIFICATION

CY VS PY COMPARISON

The interactive dashboard allows for immediate trend spotting. Our analysis shows a 12% rise in urban fatalities year-over-year, requiring immediate intervention in metro zones.

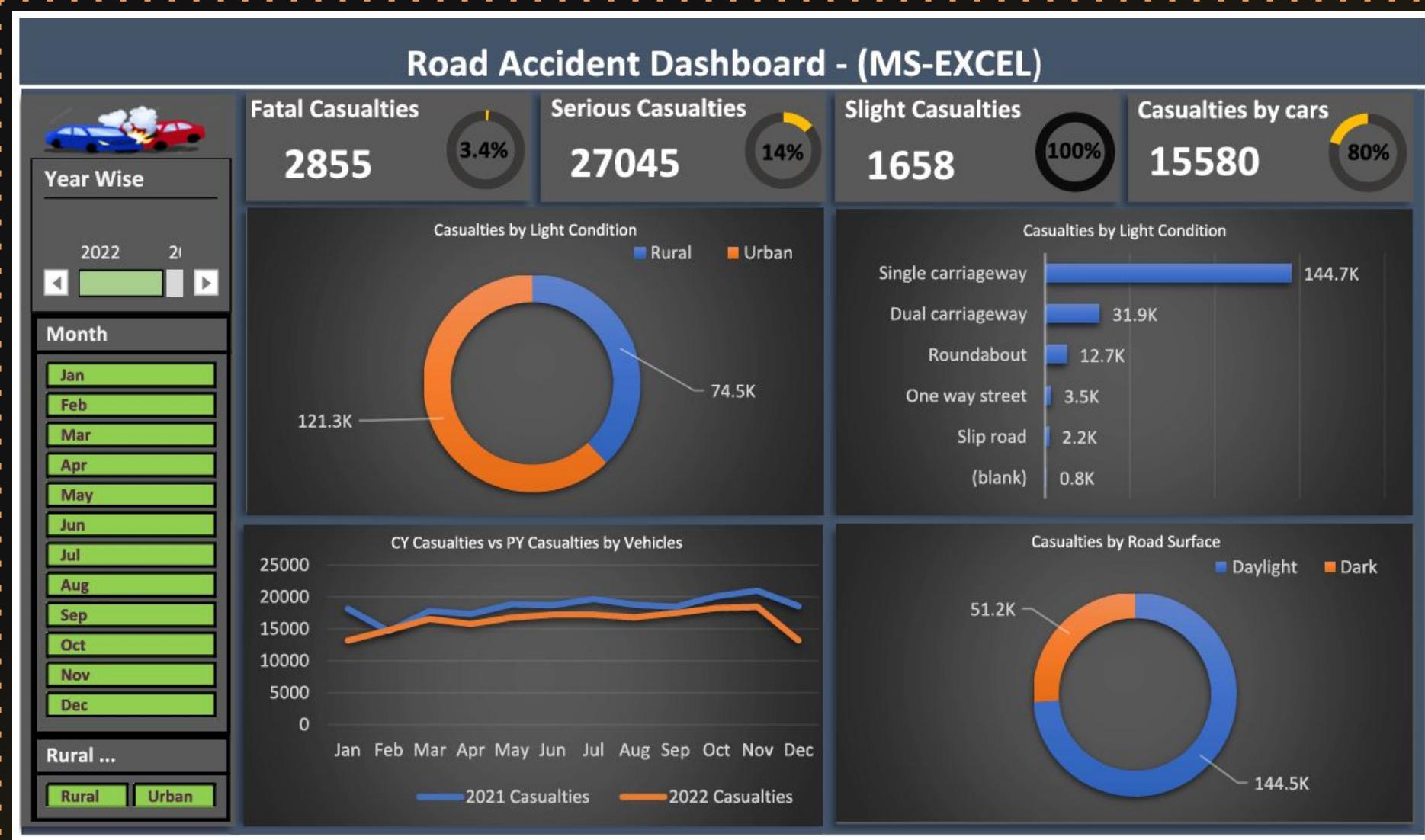
Insight: Weekend night-time accidents are the fastest growing risk segment.



ACTIONABLE STRATEGY

- 👉 **Safety Audits:** Launch targeted infrastructure audits on single carriageways in identified Urban clusters.
- 📢 **Campaign Focus:** Direct public awareness campaigns specifically at passenger car drivers during daylight peak hours.
- ⚙️ **BI Deployment:** Expand the dashboard to include "Near-Miss" data for predictive safety modeling.

Final Dashboard in Excel

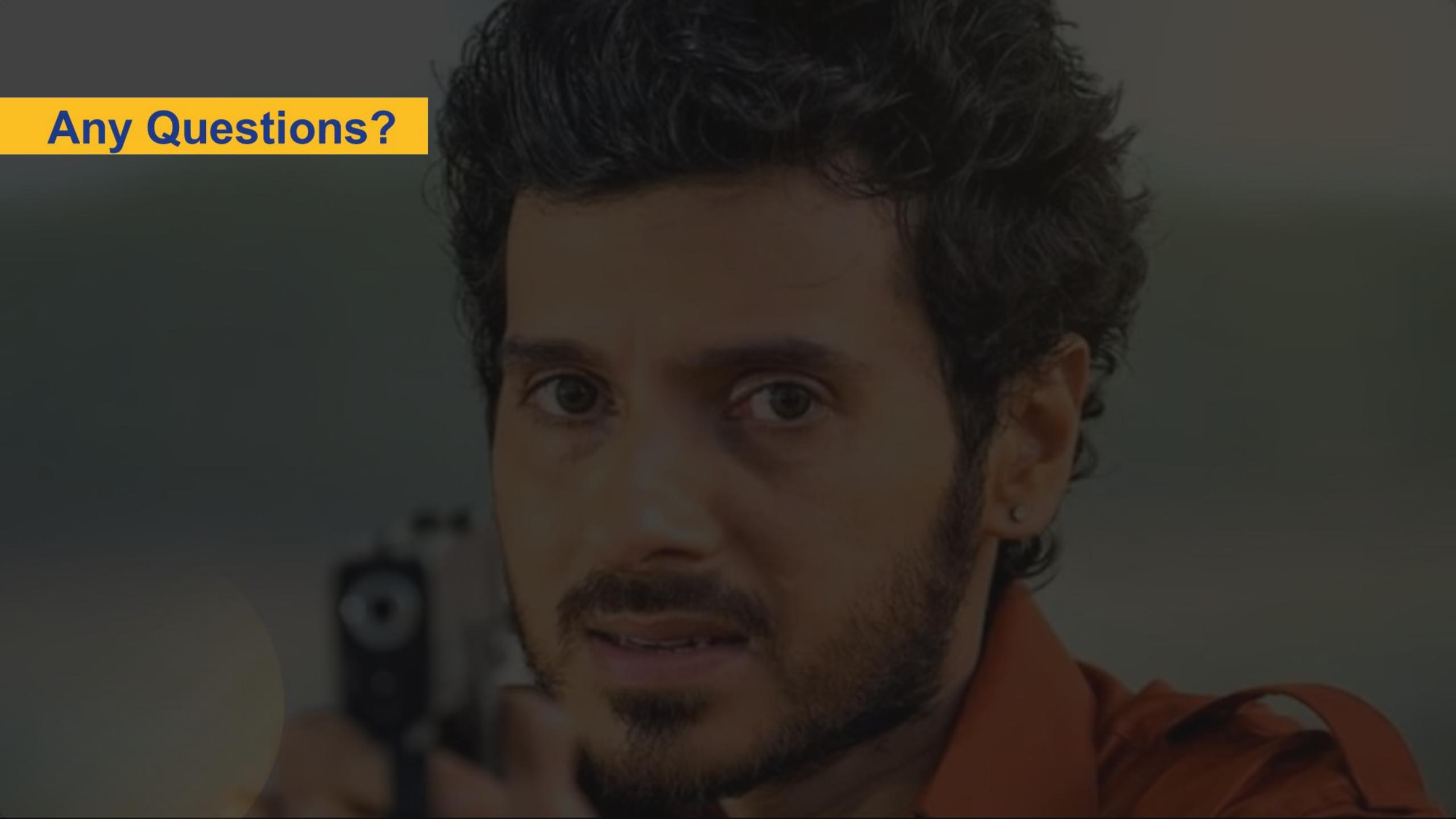


THANK YOU..!

Your time and attention.



<https://www.linkedin.com/in/nilesh-patil-347810362/>



Any Questions?