Slide 1: Introduction

Hello, everyone! During this presentation I will be presenting to you our findings about Road Traffic Accidents in Addis Ababa with particular emphasis on factors that affects Accident Rates and Accidents Severity. This research will be quite useful to the policy makers and traffic authorities who intend to design safer roads through the information it will produce on the major causes of accident and risky scenarios.

Slide 2: Background and Problem

Traffic accidents are among the major causes of morbidity within the world population. In Addis Ababa, our dataset contains over 12,000 accidents in the period of 2017 to 2020 with information including weather condition, time of the day, type of vehicle, and demographic information of the drivers. The authors’ purpose is to identify patterns, including risk factors that might contribute to accident severity to inform guided safety measures.

Slide 3: Objectives

This project seeks to answer the following research questions:

1. The main causes of RTAs in Addis Ababa The frequency of RTAs in Addis Ababa

2. This study will seek to explain how the Accidents are distributed to the male and female Drivers.

3. Towards the probability of the Accidents, how are they divided on different age band of drivers?

4. What is the relationship between the driver’s experience and number of accidents or how does experience affect the number of accidents?

5. How are road accidents distributed by the type of vehicles?

6. Do changes in road surface affect the level of the accident?

7. This raises the next questions: Are there any trends in the accident severity across the types of road alignment such as curves or flat surfaces etc?

8. The Relation Between Cause of Accidents and the Level of Injury.

9. Sex of Driver linked to collision type.

10. On which day of the week are there most number of accidents reported in the various regions.The number of accidents also affects by light conditions.

11. Light conditions contribution to the number of accidents.

These objectives help to lead us to an understanding of the regularity and intensity of accidents.

Data Wrangling and Cleaning

As the first step, we preprocessed the data and removed all the unnecessary variables, dealing with missing values as well. The major modification was to target basic columns, which allowed enhancing our pattern and condition analysis of crucial accident types.

Causes of Accidents

Our analysis found that the most frequent accident causes include:

Failure to provide reasonable distance leading to over 2, 200 cases.

Accidents such truck drivers failing to overlap their car accurately, jumping lanes and careless driving.

This shows how driver behavior plays a big factor in causing an accident, bringing to light the need to train and increase monitoring of drivers.

Analysis of driver gender and age distribution of accident Nederland

We perceived high accident rate among male drivers compared to the female drivers. Specifically, young drivers within the age of 18-30 years, and the middle-aged drivers within the age of 31-50 years registered the highest number of accidents; that may be attributed to inexperience by overconfidence.

Impact of Driving Experience

We found that the drivers with less than one-year and those with more than ten years of experience had a higher number of accidents; the mid-experienced drivers with 2 to 10 years had a moderate number of accidents. It might mean that very young or old drivers or drivers who have just joined the road or those who have accumulated very many years of experience are very dangerous on the road. This distribution involves partitioning of vehicle types and various accidents occurred in the scene.

of table two identifies that automobiles and large lorry had the highest accident counts. This is in consonance with their visibility on roads and implies that drivers training and safety standards should encourage such vehicle types. Passenger transport also dominated the list of vehicles involved in the accidents.

The investigation on the impact of road surface characteristics on the accident severity.

Results generated from the examination of road surface conditions exposed the fact that injuries resulting from accidents that occurred on dry or wet roads were more severe than those that took place on other conditions. This covers in effect the need for greater care and probably improved road surface despite the weather condition being wet.

Road Configuration and Accident Intensity

Our analysis showed that severe accidents were often reported on steep gradient and especially in mountainous regions. Turning areas such as curved roads and roads with steep gradients were likely to lead to more severe consequences, this shows that measures should be made to improve the road geometries and these signs in these areas.

Slide 11: Factors and Consequences of Accident Risk and Injury Intensity

Breaking down causes by injury severity, we found:

- For serious injuries: The worst outcomes arose from ‘no distancing’.

- For fatal injuries: The most common reason was ‘moving backward.’

This insight means that there is a need to prevent reckless driving and abide by the laws put in place.

Accident Type and Driver Gender

By gender and type of collision group we found that male gender has higher accident propensity in all types of collisions, specifically in collisions with pedestrians, road side objects and other vehicles. This needs awareness campaigns that focuses on those behaviours that are perceived to be dangerous among male drivers.

Day and Area of Accidents

More incidences were recorded in the office and residential zones and more often during the weekdays, meaning high movement in these zones. While in the night the number of accidents was less possibly because the roads are most inactive during this time.

The Effects of Light Conditions on Accidents

Daylight reported the most number of accidents, conceivably due to the fact that traffic is denser during the daytime. The incidence of nighttime road accidents with most happening in well lit areas and although lower than during the day suggested that lighting is not the complete solution.

Conclusion

In conclusion, hence, our study enumerated few of the causes of road accidents in Addis Ababa to include driver behavioral pattern, experience, type of vehicle, and condition of the roads. Men and young drivers were considered dangerous and the accidents that happened on curved and steep roads were considered fatal. Knowledge of these factors helps policymakers to develop relevant mechanisms for roads safety enhancement.

Thank you for listening! The findings of this study presented below can assist in focusing road safety interventions in Addis Ababa. Preventing and controlling driver behavior, traffic layout, and creating increased awareness of safety concerns will help lower accident frequency and increase the safety of our citizens. You may be wondering about something, please do not hesitate to ask.