

BIKE ACCIDENT DATA ANALYSIS PROJECT

Description

There are many health and environmental benefits to cycling including cardiovascular fitness and reduced greenhouse gas emission to the atmosphere. But as more people engage in cycling activity, there will also be an increased chance of bicycle accidents. Many north American cities are bicycle friendly and many residents opt to use bike instead of private vehicle or public transit. With the campaign for climate change and emission reduction, there are bound to be more people using bikes in the future. With more people expected to take up cycling in the future for various reasons, it is important to understand the major factors that contribute to bike accidents in order to prevent them and make cycling safe for the public.

This project aims to study the major factors that contribute to bicycle accidents. it will unlock trends and insights on bike accident to help law makers mitigate or reduce the number of bike accidents in the province

Data

The data was provided by an insurance company in a Canadian province. The data used in this analysis was collected between March 2010 – December 2019.

Tools

• Jupiter notebook • Python • MS excel • Tableau

Findings/Analysis

- There was a total of 555 bicycle accidents in this province within the time period under consideration. 5 (1%) of these accidents resulted in a fatality
- Of the total bike accidents within the period of consideration, 82.88% resulted in property damage and 16.22% resulted in personal injury
- In terms of natural light condition when the accident occurred, 78.9% happened at daylight, 14.31% happened at dark, 4.95% at dusk and 1.83% at dawn
- For artificial light condition (e.g., Street light), 71.43% of the accidents occurred when there is lightning but was not turned on, 16.73 occurred when lightning is on while 11.84% occurred when there is no lightning
- The weather condition is not a major factor affecting the rate of bicycle accidents as 77.59% of the accidents happened in a clear weather condition, 16.57% in cloudy, 4.71% in raining, 0.19% in sleet/hail, 0.75% in snowy and 0.19% in strong wind weather conditions
- In most of the bicycle accident occurrences, one person was injured most of the time. One person was injured in 455 occasions, 2 people were injured in 5 and nobody was injured in 95 occasions
- Although road condition greatly contributes to road incidents, this analysis found that the road condition has little to no effect as 99.06% of the bicycle accidents in this province happened in normal/good road condition
- 88.13% of the incidents occurred on a dry road surface while 8.35 occurred on a wet road surface, 2.97% occurred on packed snow/ice

- Most of the accidents occurred during the late afternoon/evening between 3pm and 6pm. 193(34.7%) happened within this time frame

Conclusion

From the data available for this project, there is no significantly contributing factor to bicycle accidents in this province. More information such age, disability type (if any), accident location etc. needs to be analyzed to find conclusive evidence of major contributing factors to bicycle accident.