Explorer TDSP Research Poster

An Analysis of Traffic Crashes in Manhattan using NYC OpenData

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INTRODUCTION

RESEARCH QUESTION:

In Manhattan what impact do additional factors like denser population and greater # of pedestrians among others have on traffic accidents and their severity? How does this compare to the other boroughs?

BACKGROUND

This is a part of the last milestone of the Explorer TDSP, the self-guided research question. We work with the NYC open data dataset for motor vehicle collisions –crashes.

OBJECTIVES

- Perform a deep dive into crash data in Manhattan through various data analysis methods
- Understand the why as well as the implications of these findings

RESEARCH

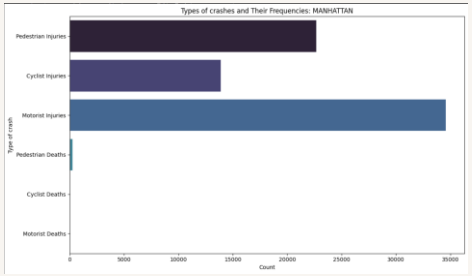
ANALYSIS METHODOLOGY

- Comparative
- Geospatial
- Time Series

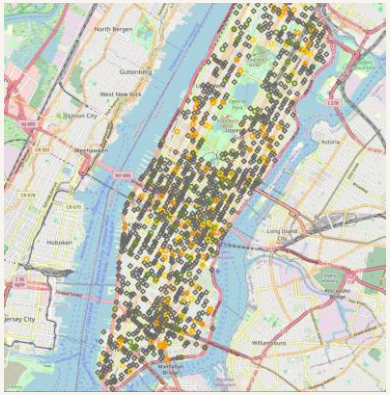
Libraries Used:

- Pandas
- Matplotlib
- Folium
- Json

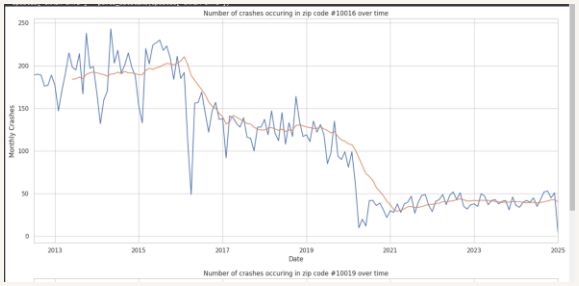
VISUALIZATIONS:



Comparing proportion of crashes with injuries and deaths within Manhattan



Visualizing different types of crashes through geospatial analysis



Time series analysis of crashes in zip code #10016(Murray Hill) which contained most crashes

Choropleth map indicating number of crashes occurring in Manhattan zip codes

CONCLUSION

RESULTS/ CONCLUSION

To answer our research question, I was able to see the impact of various factors unique to Manhattan on crashes.

- There was a greater proportion of crashes with pedestrian and cyclist injuries relative to motorist injuries.
- Lot less crashes with injuries compared to Brooklyn and Queens likely due to slower speed of traffic
- Zip codes with greatest # of crashes were in midtown/lower Manhattan which is in agreement with NYC OpenData Pedestrian Demand Map below:
- Analyze zip codes with top crashes

Source: data.cityofnewyork.us

RECOMMENDATIONS

- Continue working to increase the number of bike lanes especially in pedestrian and cyclist heavy areas
- Do further research into proportion of crashes with deaths/injuries per 1000 residents in different areas

Acknowledgments/Sources:

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