

Chicago Traffic Crashes Analysis

By DATA CHAMPS

Team Members

Shivani Konyala
Yeshwanth Nellikanti

ASSIGNMENT – 2

1. What are your team's research questions?

- a. Biannually, how many crashes have been reported in the Chicago city from 2018 to 2020?
- b. What are the top 5 places in Chicago city, where the fatality rate of accidents is high from 2018 to 2020?
- c. What are the top 10 places in Chicago city where often crashes occurred due to road defects?
- d. What is the hour-wise crash rate reported in Chicago?

2. How did you arrive at these research questions?

- For analyzing the dataset, the team firstly have chosen the research questions based on the available data. (Avoiding missing data discrepancy)
- Secondly, the team has further filtered the research questions based on whether they provide value to analyze the traffic crash problems.
- Furthermore, the team concentrated on choosing questions where the aspects like crash rate, fatality rate, road defects, and hour-wise data can be analyzed.

3. Will all your research questions provide value? How?

Yes, all our research questions provide value.

- a: - The biannual analysis of the traffic crashes best visualizes the traffic crash rate whether it is increasing or decreasing over the period in Chicago.
- b: - The research question helps to find out the top places in Chicago with the highest fatality rate and further necessary measures can be taken to reduce it.
- c: - Retrieving locations where the road defects are causing crashes can help the officials to invest their time and money in that places to reduce the crash rate.
- d: - Hour-wise analysis helps the officials to allocate more traffic control employees to work on busy hours to reduce the crashes.

4. What are the research questions that were rejected and why were they rejected?

- a. What was the Lighting Condition when most of the crashes happened?
 - 3.5% of the lighting conditions data is missing in the dataset.
 - Due to the missing data discrepancy, the team has rejected this research question.
- b. During which Weather Condition the crashes happened?
 - With a missing data of 4.2% records, the weather condition at which the crash occurred is rejected as the data analysis will not be appropriate.

- c. What is the most common type of causes for the traffic crash in Chicago from 2018 to 2021?
 - The primary cause for 36% (1,20,613) of crash records from 2018 to 2021 is “Unable to Determine”. With the missing of such huge data, the data analysis cannot be effectively performed.
- d. What are the top streets that have the greatest number of crashes in Chicago from 2018 to 2021? (Street = Street No + Street Name)
 - With the possibility of a street being too long, it would be difficult to find the exact location of a crash based on the street details provided.
- e. What is the traffic crash damage rate in Chicago quarterly from 2018 to 2020?
 - The exact damage cost has not been mentioned in the dataset.
(Values include: ‘less than \$500’, ‘\$500-1500’, ‘Over \$1500’)
 - With the provided values, the overall traffic crash damage rate cannot be found accurately.