

Car Accidents in Mexico City

Data source: INEGI 2018

Introduction

Mexico is a country with an important growth in recent years, and this is reflected in the number of cars that circulate daily in the different cities of the Mexican Republic. More than 30 years ago, only those with high economic status were the ones who owned a car. However, due to globalization this has changed. Many vehicles brands have come to the country offering a variety of products within the automotive market. This has also represented that all families want to have their own vehicle to transport themselves, generating an exponential increase in the number of vehicles that circulate daily within Mexican streets and avenues. Having a car, is not only the comfort of transportation, it involves costs inherent to its maintenance and above all the responsibility that you have behind the wheel, since you can suffer accidents and the expenses that they can represent.

Until last year, in Mexico it was not mandatory to have auto insurance, most of the vehicle park did not have insurance to protect it against possible accidents. Mexico has hosted an annual average of 384,434 traffic accidents in urban areas during the last five years, according to records from the National Institute of Statistics and Geography (INEGI). Despite this high figure, only 27% of the national vehicle fleet is insured.

As of 2019, not having at least social responsibility insurance can represent a fine that ranges from 1,500 to 6,000 pesos in 25 states of the Republic, including Mexico City.

The most common accident in the country's cities is a collision with another motor vehicle, with 67%. The other main causes are collision with a fixed object, collision with a motorcycle and collision with a pedestrian. While the annual average of deaths in the last five years is 5,587.

Problem

The concentration of car accidents in Mexico City and his relationship with the main avenues of the city, due to the growth of the vehicle fleet.

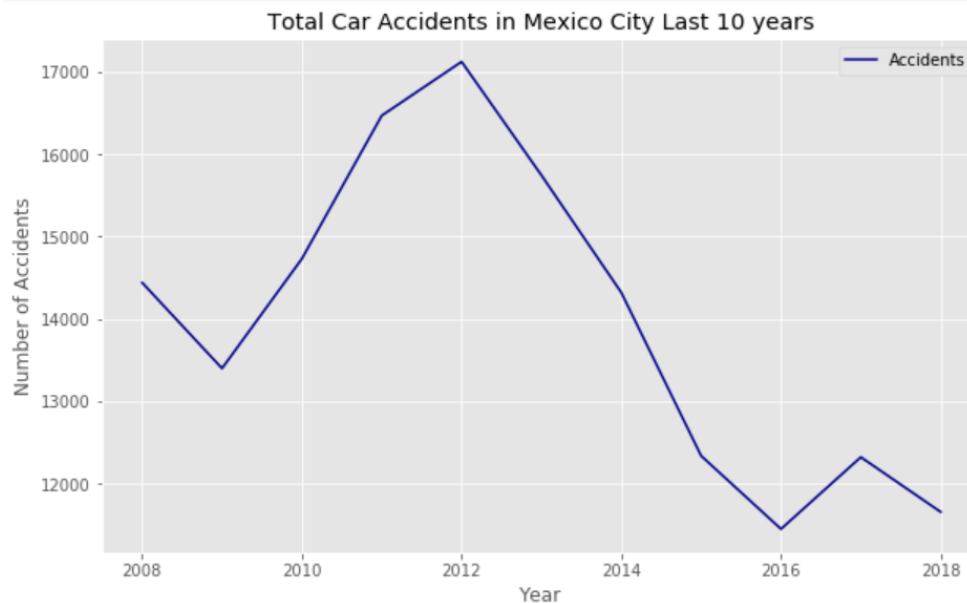
Data Source

To get a history of information, and how accidents in Mexico have changed in the last 10 years, National Institute of Statistics and Geography (INEGI by Spanish initials), provides historical information on car accidents in Mexico from its website. It is necessary to download the information and prepare the data to show the statistics by State.

The information by accident area will be used to show the accidents by state, and then we will show different zones of concentration in Mexico City. We will try ti relate this data to Foursquare data, to identify the closest places where accidents occurs.

The information also shows the days of the week and times when most accidents occurs, the types of accidents, whether they are injured or fatal.

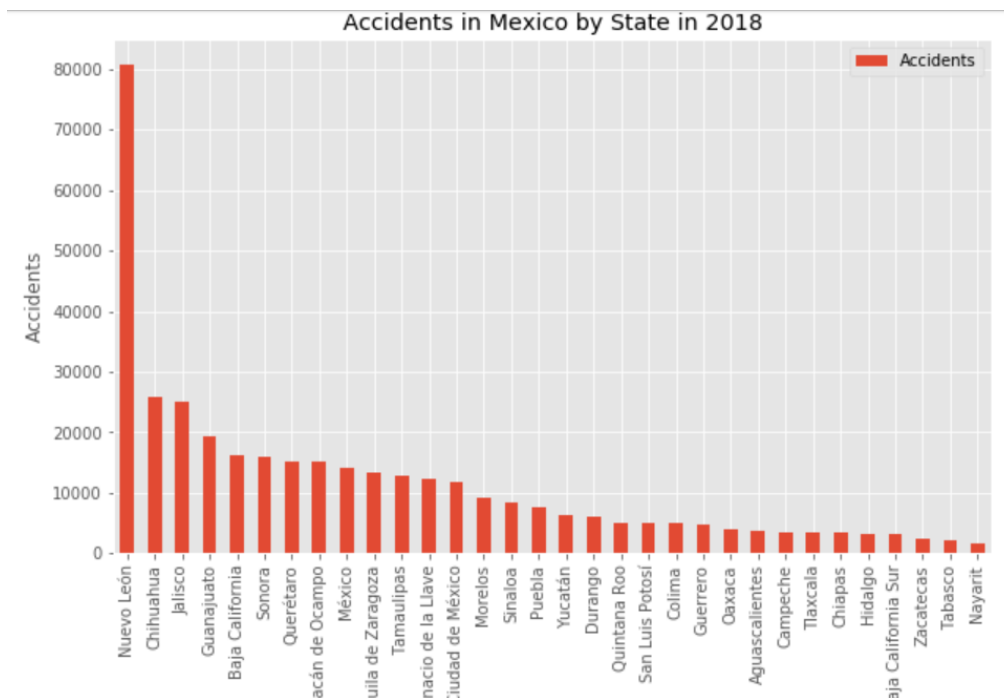
Zone	Year	Accidents
Ciudad de México	2008	14438.0
Ciudad de México	2009	13398.0
Ciudad de México	2010	14729.0
Ciudad de México	2011	16466.0
Ciudad de México	2012	17120.0
Ciudad de México	2013	15742.0
Ciudad de México	2014	14319.0
Ciudad de México	2015	12337.0
Ciudad de México	2016	11449.0
Ciudad de México	2017	12321.0
Ciudad de México	2018	11656.0



Methodology.

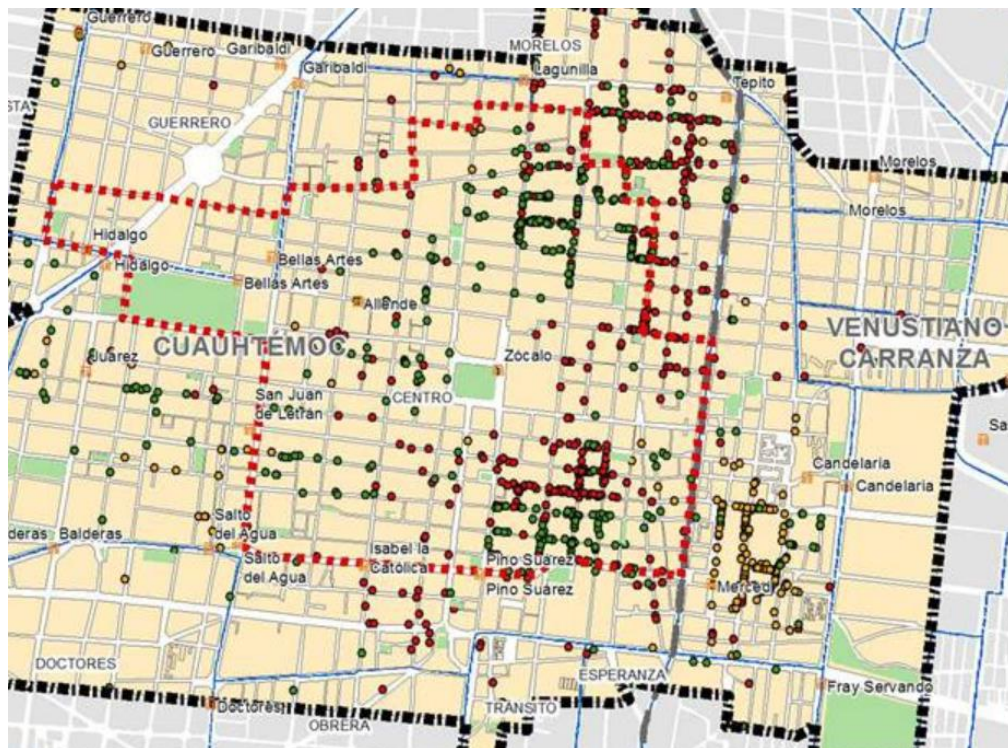
For the beginning we are going to start with the history of the accidents in Mexico.

Accidents	
Zone	
Nuevo León	80863.0
Chihuahua	25938.0
Jalisco	25067.0
Guanajuato	19290.0
Baja California	16300.0
Sonora	15938.0
Querétaro	15185.0
Michoacán de Ocampo	15029.0
México	14060.0
Coahuila de Zaragoza	13249.0
Tamaulipas	12684.0
Veracruz de Ignacio de la Llave	12398.0
Ciudad de México	11656.0



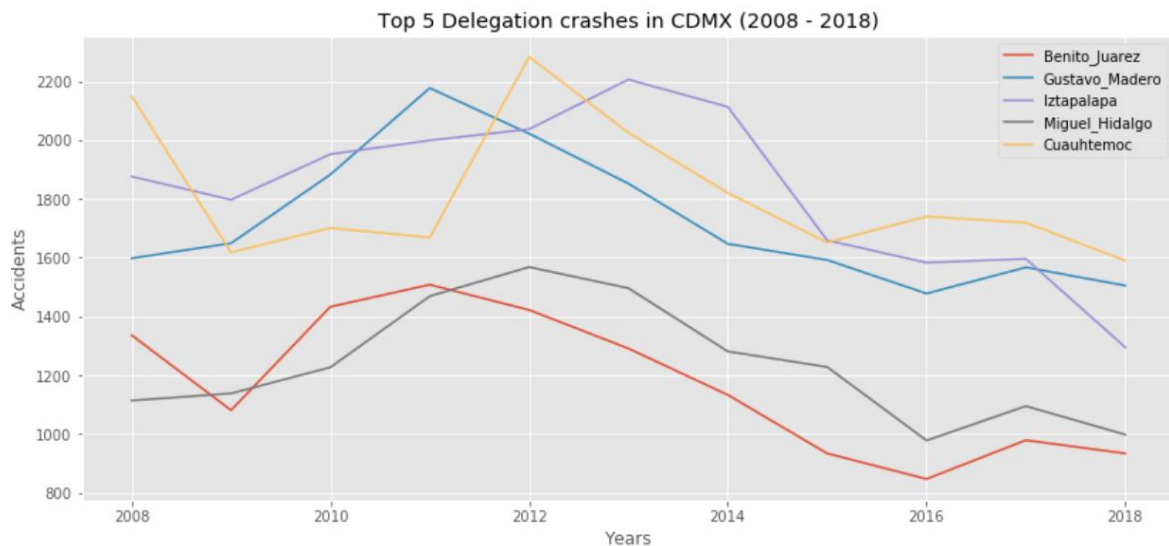
As shown in the last table, Mexico City is not the state with most accidents. In fact, it is until the position number 15. However, our study seeks to understand where accidents are concentrated in Mexico City and we are dividing it by the Delegations that make up. In addition to this, we focus on whatever the main ones are (Top 5), as shown in the following graphs.

As you can see, in the following figure, the concentration of cars is also much higher in your areas, which also shows that this is one of the main reasons for focusing on them.



During 2018 the concentration of crashes is in the center of the city. In the next table you could see, that accidents are concentrated in Cuauhtémoc, Gustavo A. Madero, Iztapalapa, Miguel Hidalgo and Benito Juárez.

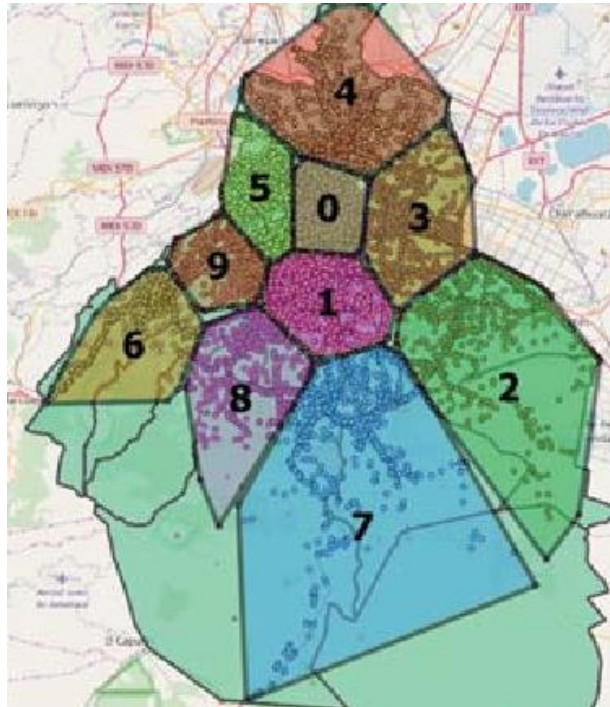
	Benito_Juarez	Gustavo_Madero	Iztapalapa	Miguel_Hidalgo	Cuauhtemoc
Year					
2008	1336.0	1598.0	1876.0	1114.0	2149.0
2009	1081.0	1649.0	1797.0	1138.0	1618.0
2010	1433.0	1883.0	1952.0	1227.0	1701.0
2011	1508.0	2177.0	1999.0	1469.0	1669.0
2012	1422.0	2022.0	2037.0	1568.0	2283.0
2013	1291.0	1852.0	2206.0	1496.0	2025.0
2014	1133.0	1647.0	2113.0	1281.0	1820.0
2015	934.0	1592.0	1659.0	1228.0	1652.0
2016	847.0	1478.0	1583.0	978.0	1740.0
2017	979.0	1567.0	1596.0	1095.0	1719.0
2018	934.0	1505.0	1295.0	998.0	1590.0



Results.

It is important to detail the accident rate city by city, since, when seeing the graph in this way, we realize the way of driving in each state. Surprisingly, Mexico City is in eighth place, while Nuevo León, Jalisco and Chihuahua obtain the first three steps. Similarly, Nuevo León shoots up considerably in first place, making it the most rugged location in the country.

In Mexico City the first place is to Cuauhtemoc delegation and the second place is for Gustavo A. Madero, both in the center of the city; the next position is to Iztapalapa, the only place outside the city center in this top. But is not surprising due to the number of cars that circulate daily in the area. Finally the last 3 positions are for Miguel Hidalgo and Benito Juarez, near to the center of the city too.



Conclusion.

The conclusion, surprising as it may seem, is that in the Mexican Republic we have a strong influence from our northern neighbors (the United States), which due to this has accumulated a large number of chocolate cars (cars of more than 10 years that are bought in the US and are brought to Mexico at a lower price); Nuevo Leon is very close to the border and is one of the states with the largest economic capital, so the number of cars is very high and accidents are too.