

Data Science Project

# Traffic Incidents in the UAE – An Analysis

IBM Data Science Professional – Applied Data Science Capstone

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## Business Problem

According to the UN-WHO Road Accidents is the second major cause of deaths in the Emirates and this rate is increasing at a rapid speed with every passing year. A survey by the WHO conducted on UAE Road Accidents shows that 63% of children deaths occurred in road accidents. UAE has a modern and state of the art roads and traffic infrastructure, but there are many other factors involved in the rapidly increasing number of road accidents. Dubai government takes immense efforts to ensure the happiness of its residents and the quality of travel is one of the key indicators.

Based on information that is available on past accidents, is it possible to prevent accidents or response from emergency responders once an accident has occurred

1. What are the major causes of accidents in Dubai?
2. Are there locations that are more accident prone than others?
3. Can emergency responder hubs be established at strategic locations to improve response time once a distress call is placed after an accident?
4. Are there gender influences on accident causes? Do men and women cause different types of accidents? If yes, can this information be used to create awareness that can prevent accidents?

## Data

Middlesex InsightsX Lab: Applied Data Analytics (<https://www.mdx.ac.ae/insightsx-lab>) is the Data Science hub to connect the analytics community and academic fraternity with organizations willing to derive insights from their data. The lab enables academic researchers and the data science community in the UAE to help companies understand how to better monetize their data through the development and application of new predictive models and analytical approaches. Several datasets have been put together and curated for use by the data science researches in UAE.

### Description of Dataset1: Traffic\_accidents.csv

This particular data set has been sourced from an organisation called Bayanat (<https://data.bayanat.ae/>) which hosts several data sets related to government or public entities in Dubai. A traffic incidents data set for the year 2017 could be obtained and has been used in this analysis

Each row is an incident of the 2017 accident case and columns are the attributes related to the accident. Some fields are in Arabic, but the English one could be downloaded. Very important details like accident location, weather, seatbelt, intoxication, and others are shared for each accident.

Link: [www.bit.ly/mdxtrafficdata1](http://www.bit.ly/mdxtrafficdata1) (Data File) Related  
(Source): [http://data.bayanat.ae/en\\_GB/dataset/traffic-accidents](http://data.bayanat.ae/en_GB/dataset/traffic-accidents)

### Description of dataset2: Traffic\_incidents.csv

This particular data set has been sourced from an organisation called Dubai Pulse (<https://www.dubaipulse.gov.ae/>) which hosts several data sets related to government or public entities in Dubai.

It is a data set related to the traffic accidents since August 2018 in Dubai. The best part about this data set is that the data is getting constantly updated by Dubai Police. Which can give us an opportunity to verify the preventive actions taken based on our findings.

For each accident: Unique Accident ID, accident Time, name of the person involved, accident place coordinates are provided.

Link: <http://bit.ly/2qjZGmw> (Data) Related: [https://www.dubaipulse.gov.ae/data/dp-traffic/dp\\_traffic\\_incidents-open?organisation=dubai-police&service=dp-traffic](https://www.dubaipulse.gov.ae/data/dp-traffic/dp_traffic_incidents-open?organisation=dubai-police&service=dp-traffic)

## **Foursquare data**

Foursquare data can be used to identify the top venues around which accidents occur. This can be strategically used by law enforcement for strengthening patrolling, surveillance and establishing emergency responder hubs