Influence of riders in bicycle accidents in Madrid

Capstone Project
IBM Data Science Professional Certificate

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Github: https://github.com/ibrevers/Influence-of-riders-in-bicycle-accidents-in-Madrid

Blogpost: [*]

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1. Introduction and purpose

In recent years, there has been an increasing demand of food delivery services in Madrid, Spain which has led to a significant number of bicycle riders in the city.

The purpose of this project is to analyze whether the number of bicycle riders has any influence in regard to the number of bicycle accidents in Madrid.

2. Methodology

Data described in *3. Data description and source* will be obtained from multiple sources, stored in Jupyter Notebooks hosted by IBM Watson Studio and processed using Python language.

Data science, data analysis, scientific computing, chart and map visualization, geocoding and geolocation, machine learning and statistical methods and techniques will be used to transform and analyze source data that will serve for the purposes of measuring whether riders have any influence in the number of bicycle accidents in Madrid per district.

Influence will be measured as the statistical correlation between the number of bicycles involved in traffic accidents in Madrid in 2019 grouped by district, and the number of food venues per district.

A detailed description of Phyton libraries used is included in *Annex I: Libraries* and the full code of the project is available in the Github repository.

3. Data description and source

The following data will be used for the purposes of the project:

- Traffic accidents in Madrid in 2019

Information will be obtained from the data published in the open data website (https://datos.madrid.es/portal/site/egob/) of the Council of Madrid, comprehensive of detailed information about traffic accidents in Madrid in 2019, including date, description, district, type of vehicle involved and other information.

A more detailed description of the data set and how the CSV file is structured can be found in (https://datos.madrid.es/FWProjects/egob/Catalogo/Seguridad/Ficheros/Estructura_DS_Accidentes_trafico_desde_2019.pdf.

- Coordinates for Madrid districts

Information will be obtained from the GeoDatos website (https://www.geodatos.net/), which aggregates information available through the Google Maps API.

- Food venues in Madrid

Information will be obtained from Foursquare through the Developers API (https://developer.foursquare.com/).