1. Introduction

1.1 Background

Injuries caused by traffic accidents are among the leading causes of death worldwide and they are the main cause of death among young people, approximately 1.3 million people die each year on the world's roads [1]. Specifically in the Quebec province in Canada, 333 people were killed and 1,334 people were seriously injured on rad accidents in 2019 [2]. In addition to the tragic impact in human lives, road traffic injuries have a significant effect on the world's economy. One study estimates that road traffic injuries will cost the world economy US$1.8 trillion in the period 2015-30 [3].

Because of these enormous impacts, governments are making big efforts to reduce these numbers. Today, because of these efforts, we have systems that provide valuable information on traffic, with governments providing information such as accident hotspots and other useful statistics.

1.2 Business problem

The objective of this project is to analyze how venues around traffic accidents have an influence on them. This project is mainly focused on geospatial analysis of the traffic accidents in Montreal City with people injured in 2019.

The main audience of this project will be the people in charge of optimizing resources in emergency care (tow trucks, firefighters, traffic agents, ambulances), who can concentrate their units in certain areas of interest in the city with high accidents density.

Using data science methodology and machine learning techniques like clustering, this project aims to provide solutions to answer the business question: Are venues or points of interest (POI) an important feature influencing car accidents in the city of Montreal?