IBM Capstone Project

Optimal Location for EV Service in the Washington State.

Introduction

Due to the growing population of electric and hybrid vehicles in the US, the new market emerging in the field of auto service. Followed by the Tesla Motors, world top carmakers offering more electric vehicles in their model line which constantly takes a significant portion of the car market in the US.

The growing number of electric vehicles collaterally boosts the EV charging market, as more consumers decide to purchase electric cars as higher demand for charging stations. On the other hand, the wider access to charging stations at specific locations stimulates consumers to choose an electric vehicle.

It is obvious that any vehicle with electric drivetrain requires maintenance and replacement services distinct from traditional gasoline vehicle, thus, a significant number of EV on the roads creates a market for "non-traditional" auto service.

Based on market opportunity analysis, potential auto service business planning to step into the EV market and provide maintenance and replacement services in the state of Washington, however choosing the most efficient deployment locations for EV service facilities that would maximize profits requires location-based data analysis and the estimated market growth. Following data analysis will help to visualize the potential EV service market as well as clustering potential customers into groups and define the most efficient deployment locations that would satisfy the EV owner's needs.

Data

Following data required to perform the analysis:

1. List of zip codes that covers the state of Washington (WA) including geolocation and county.
2. The geographical location of currently registered EV vehicles in WA will be obtained directly from (data.wa.gov), official state government site.
3. The geographical location of EV charging stations in WA will be obtained from National Renewable Energy Laboratory (NREL) through an API.