Site selection of frontline warehouse for inventory preposition

Business Problem

LSC is an innovative distributor in NYC. Their main business is arranging coffee bean distributions to local coffee shops. However, since their distribution center is too far away from the NYC, their distributions are suffered from a high order to delivery time. LSC's new director, Jeff, who has a strong background in logistics and supply chain management, wants to try out a practice in military called inventory preposition in which inventory are loaded to a predefined area which are closed to the point of use so that the delivery can be made timely and thus improve the customer experience.

After a thorough research about the cost, the company decide to locate a frontline warehouse in Manhattan. And now the company needs to choose a site for the warehouse.

This project can be taken as a pilot study on using machine learning to do the site selection, a typical task in supply chain management.

Data

In this case, a location data consisting of the quantity of coffee shops in Manhattan area is required. Foursqure will be a good data source for this project as it has both neighborhood data in Manhattan and how many coffee shops in each neighborhood.

After collecting the data, a clustering approach will be applied to find the best coffee shop grouping, i.e. the ideal location for a frontline warehouse.