Iowa Liquor Retail Sales

Stefan Popov, B. Sc.

1 Introduction / Business problem

In this project, I will perform an analysis of a publicly available data set to solve some of the most common retail problems. Retailers often want to forecast their demand in order to predict when and how much goods should be stocked. Second, distributors need to have clear demand in order to optimize their delivery route. In this work, I aim to analyze the data set and gain some initial insights into how liquor is being bought in the state of Iowa, and then apply some machine learning methods to better predict the stock-out of stores and the retail demand, the results of which I hope to be practically used by someone (most probably a retail company in Iowa).

2 Data

The data is publicly available both on the Iowa's government web-page at *Iowa Liquor Retail Sales | data.iowa.gov* (2020) and is included in Google's publicly released data sets on the Google Cloud Platform at *Iowa Liquor Retail Sales | Marketplace* (2020). On the former page it is freely available to download in various formats (csv, Excel, etc.) while on the latter it is integrated in BigQuery - Google's analytic warehouse tool where users can process up to 1 TB of data free of charge.

This data set contains every wholesale purchase of liquor in the State of Iowa by retailers for sale to individuals since January 1, 2012. The State of Iowa controls the wholesale distribution of liquor intended for retail sale, which means this data set offers a complete view of retail liquor sales in the entire state. The data set contains every wholesale order of liquor by all grocery stores, liquor stores, convenience stores, etc., with details about the store and location, the exact liquor brand and size, and the number of bottles ordered.

The data set is updated monthly, usually on the first day of the month, therefore it is up to date. Currently, there are 18.8 million rows with 24 columns. Some of the attributes are geographical, such as store location and address and these will be used to join or query Foursquare data to visualize some interesting maps.

Bibliography

Iowa Liquor Retail Sales | data.iowa.gov (2020). Last accessed 06 June 2020.
URL: *https://data.iowa.gov/Sales-Distribution/Iowa-Liquor-Sales/m3tr-qhgy*

Iowa Liquor Retail Sales | Marketplace (2020). Last accessed 06 June 2020.
URL: *https://console.cloud.google.com/marketplace/details/iowa-department-of-commerce/iowa-liquor-sales?filter=solution-type%3Adataset—&filter=category%3Aanalytics—&id=18f0a495-8e20-4124-a349-0c4c167b60ab*