

Analysis of accessible food services to low income households

IBM DATA SCIENCE CAPSTONE PROJECT



Problem Description

- Problem:

- Singapore lockdown due to COVID-19, circuit breaker implementations
- Low income families with low access to budget food services affected
- High living expenses, insufficient financial support

- Objective:

- Identify planning areas with clusters of low income households with limited budget food services in their vicinity
- Insights for charity entities to prioritised planning areas for food charity handouts to maximise the effectiveness of a community support initiative.

Data

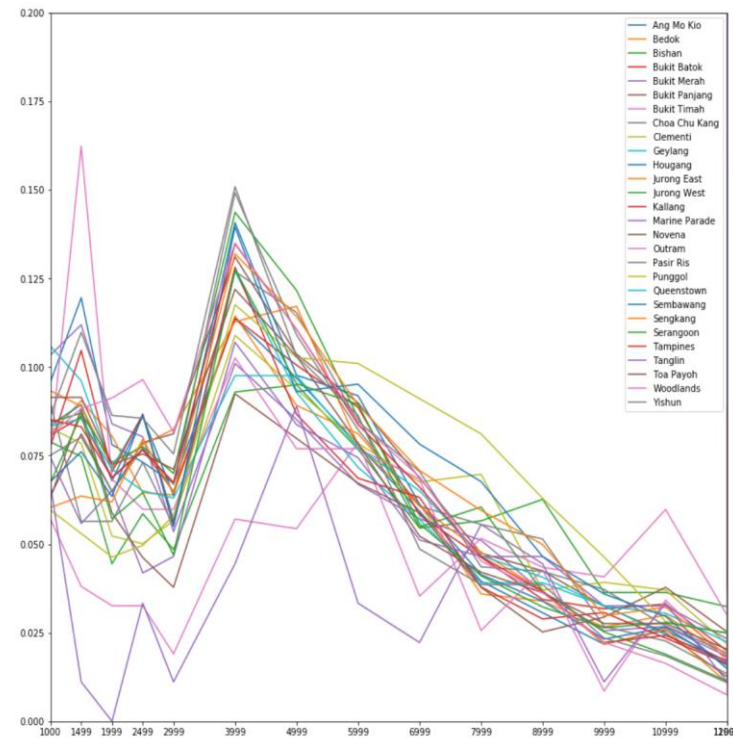
- 2015 population data of Singapore residents by planning area and income bracket
- By Singapore Ministry of Trade and Industry - Department of Statistics
 - <https://data.gov.sg/dataset/resident-working-persons-aged-15-years-over-by-planning-area-gross-monthly-income-from-work-2015>

Approach

- Identify population number in each income bracket for each planning area
 - Using Fourspace API, search for recommended budget food services in a 2.5km radius vicinity
 - Group population and cluster planning area, according to income bracket and number of available food services available in vicinity
 - Identify similar planning areas which are on top priority for food charity handouts
- (criteria: low income + lack of food services nearby)

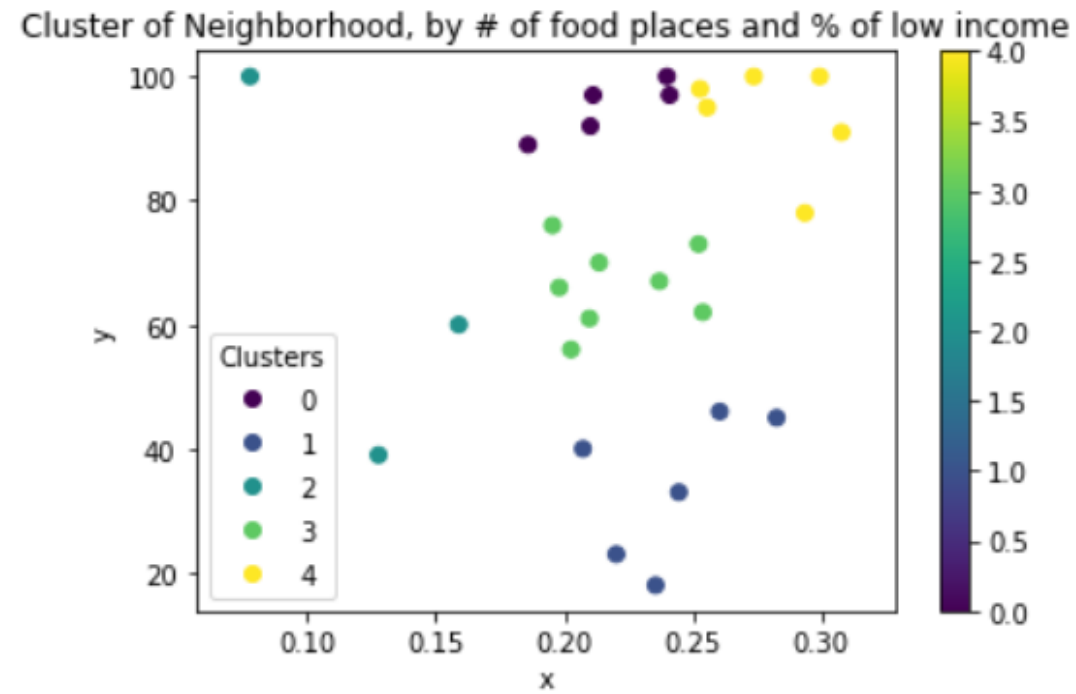
Exploratory Analysis

- Proportion of each income bracket against income bracket



K-means Clustering

- Cluster 1



Map

