PREDICTING PROFITABILITY OF RESTAURANT

ANALYSING TORONTO NEIGHBOURHOODS TO PREDICT AREAS WITH PROFITABILITY IN INVESTMENT THROUGH DATA SCIENCE

PROBLEM

- Recognize ideal location to open a restaurant in Neighbourhoods of Toronto
- To ensure that investment is productive by analysing factors
- Investigate combination of factors that can result in profitable

DATA ACQUISITION

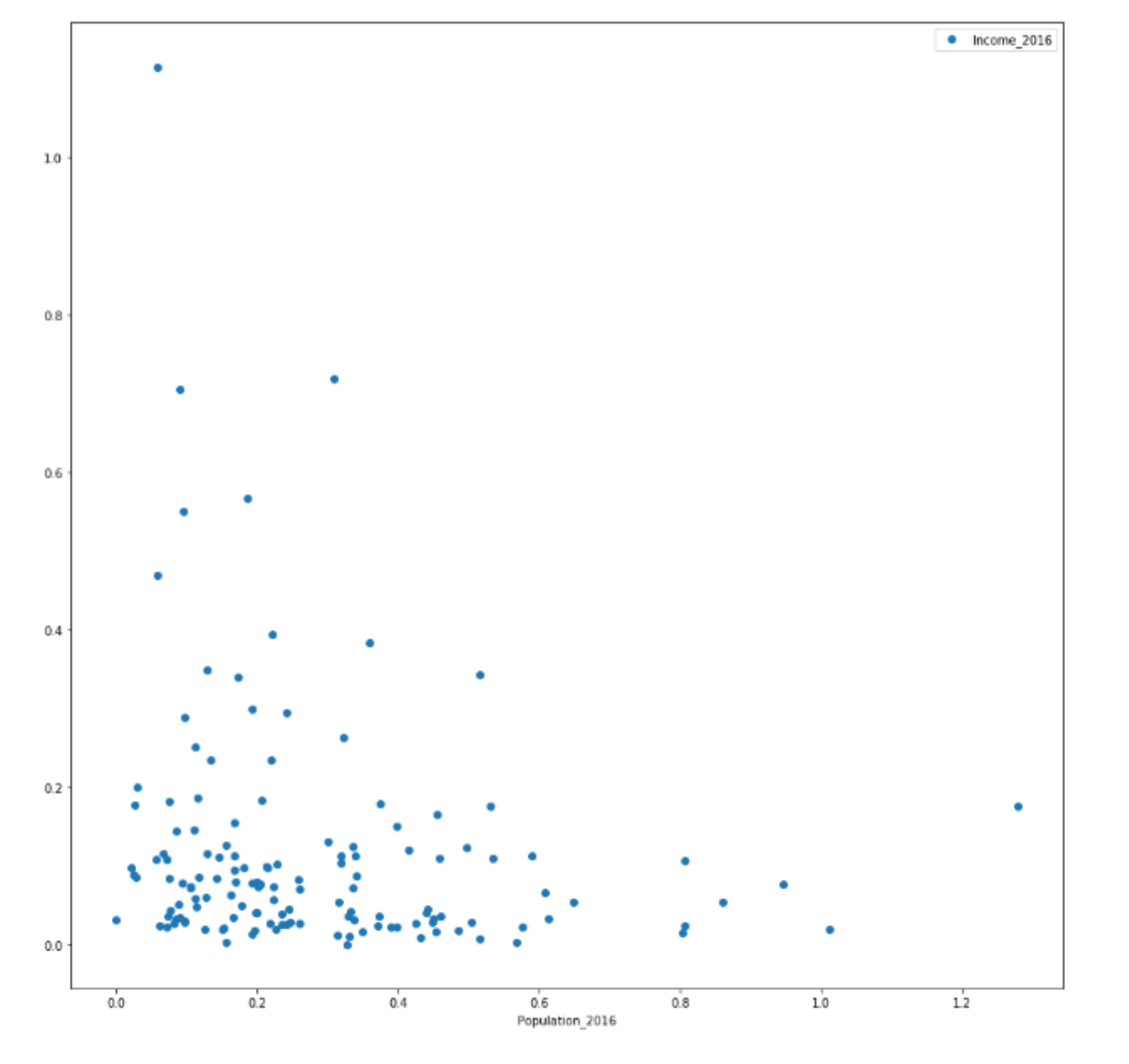
- The features under examination are Population and Income of a neighbourhood
- High Population increases number of customer
- High Income increases expenditure of customer

DATA WRANGLING

- Filter data out for Neighbourhoods, Population and Average Income
- Normalise data for better understanding
- Min-Max scaling is used to scale data from 0 to 1

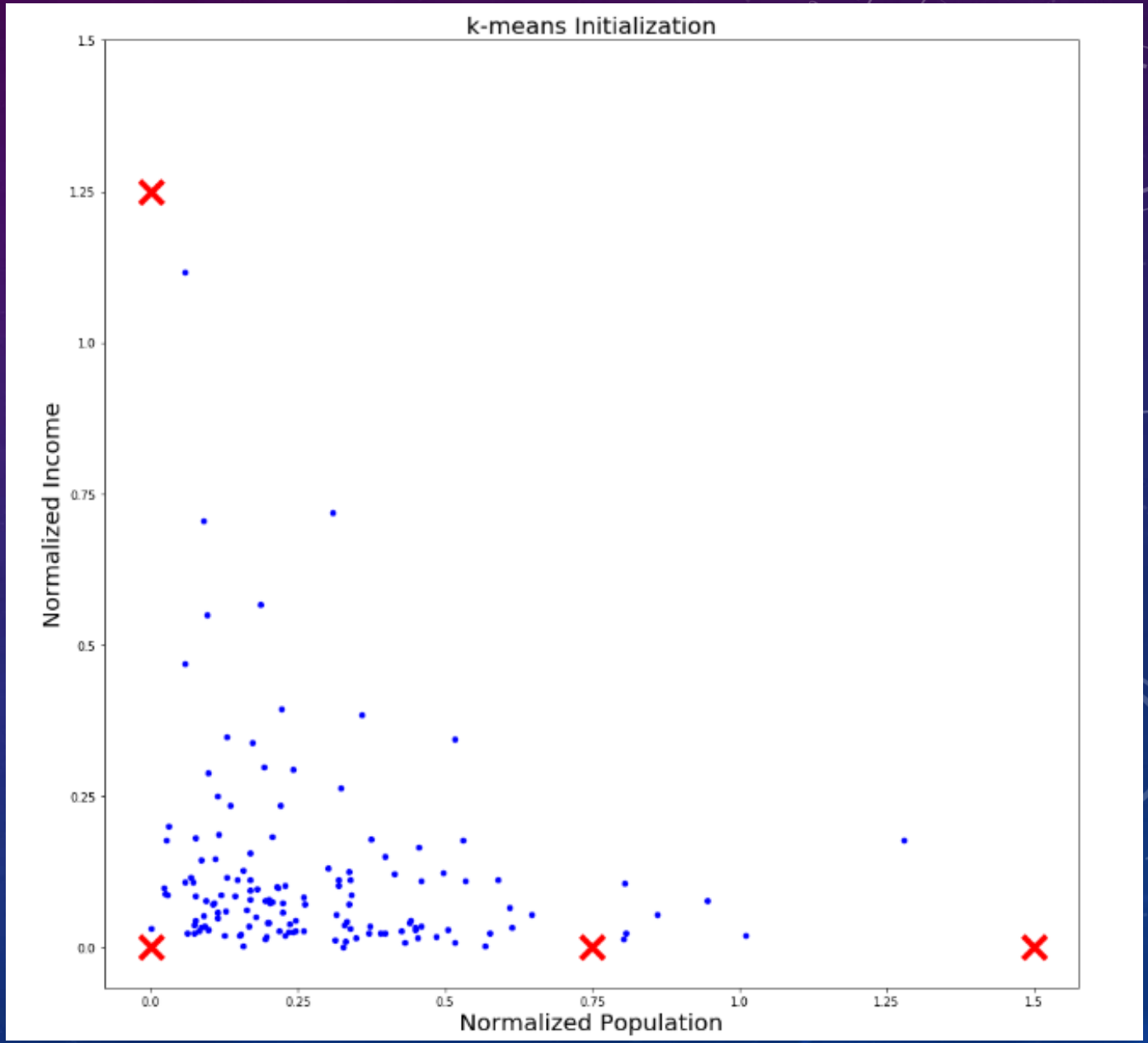
DATA VISUALIZATION

- Visualise normalised data in terms of scatter plot for Income vs Population
- The graph depicts that high population and low income data set and low population and high income data set is rare.



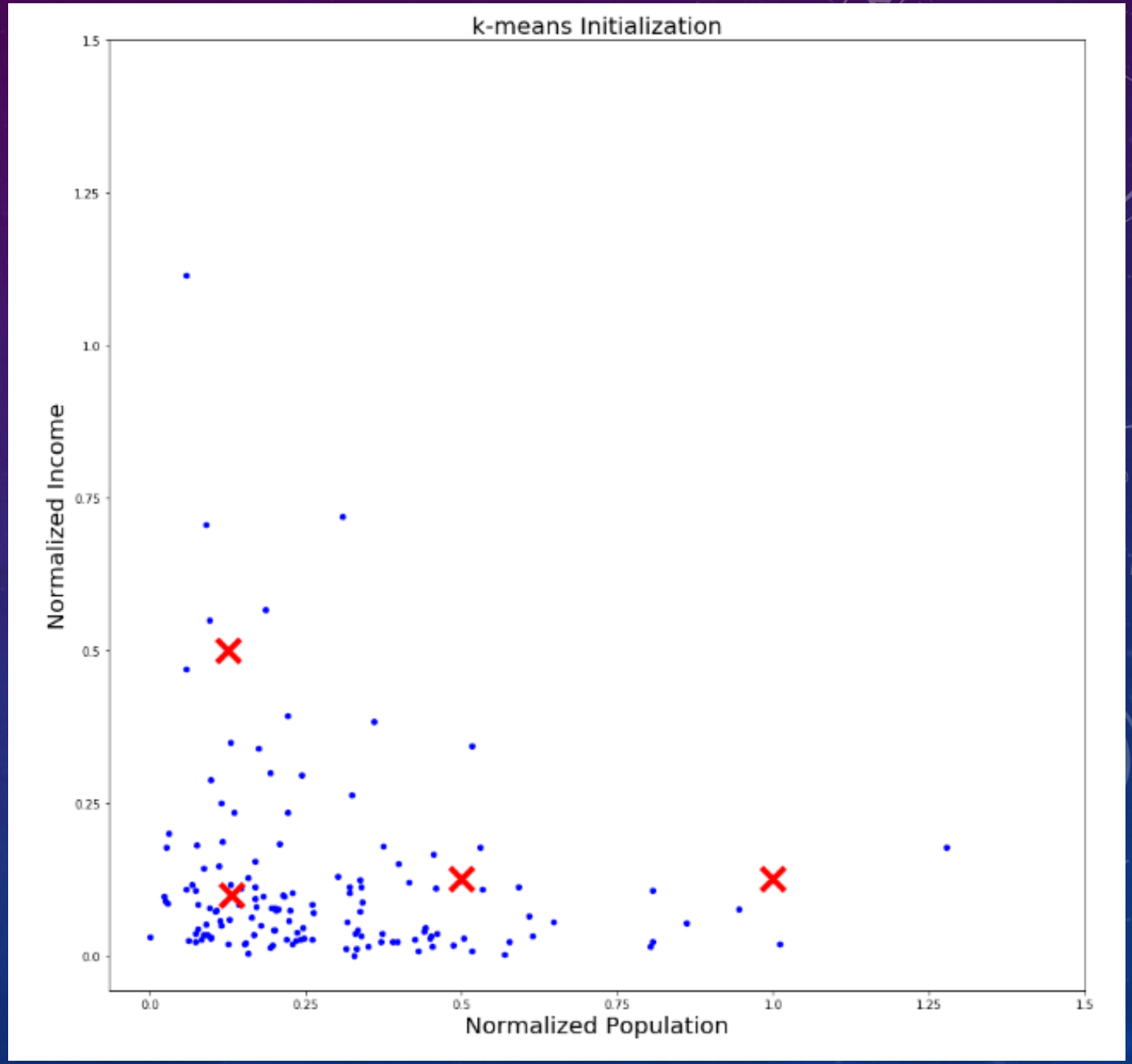
CLUSTERING

- Four clusters are established for the data



RESULTS

- Clusters were refined for better classification



ACCURACY

- Accuracy 0.745
- Most data is concentrated on one region and few data exists as outliers decreases the accuracy

CONCLUSION

- High income and high population neighbourhoods are non existent in Toronto so high cost investment is not favourable.
- Neighbourhoods that lie close to cluster (0.5,0.125) will have moderate profit so moderate investment is more favourable.
- Most of the neighbourhoods lie close to low population and low income margin so do not favour investment as locals are less likely to eat out or engage in social gatherings in restaurants.

IMPROVEMENTS

- Other factors can also be examined such as population so specific age brackets as younger people are more likely to eat out that older people.
- The population of families can also be examined as families are more likely to eat out than individual adults.