

Classification of Montreal Metro stations

INITIAL EVALUATION FOR A BUSINESS LOCATION



Predicting a location for a business

- Montreal metro system with 68 stations, after New York, has the largest number of users compared to population.
- Each day more than 1.3M passenger uses metro in Montreal.
- Considering the Montreal urban environment and society, for any business it may be very critical to consider accessibility of underground system for choosing location.
- In this study, the neighborhoods surrounding metro stations will be classified.
- By analyzing this data we can classify stations by primary usage.

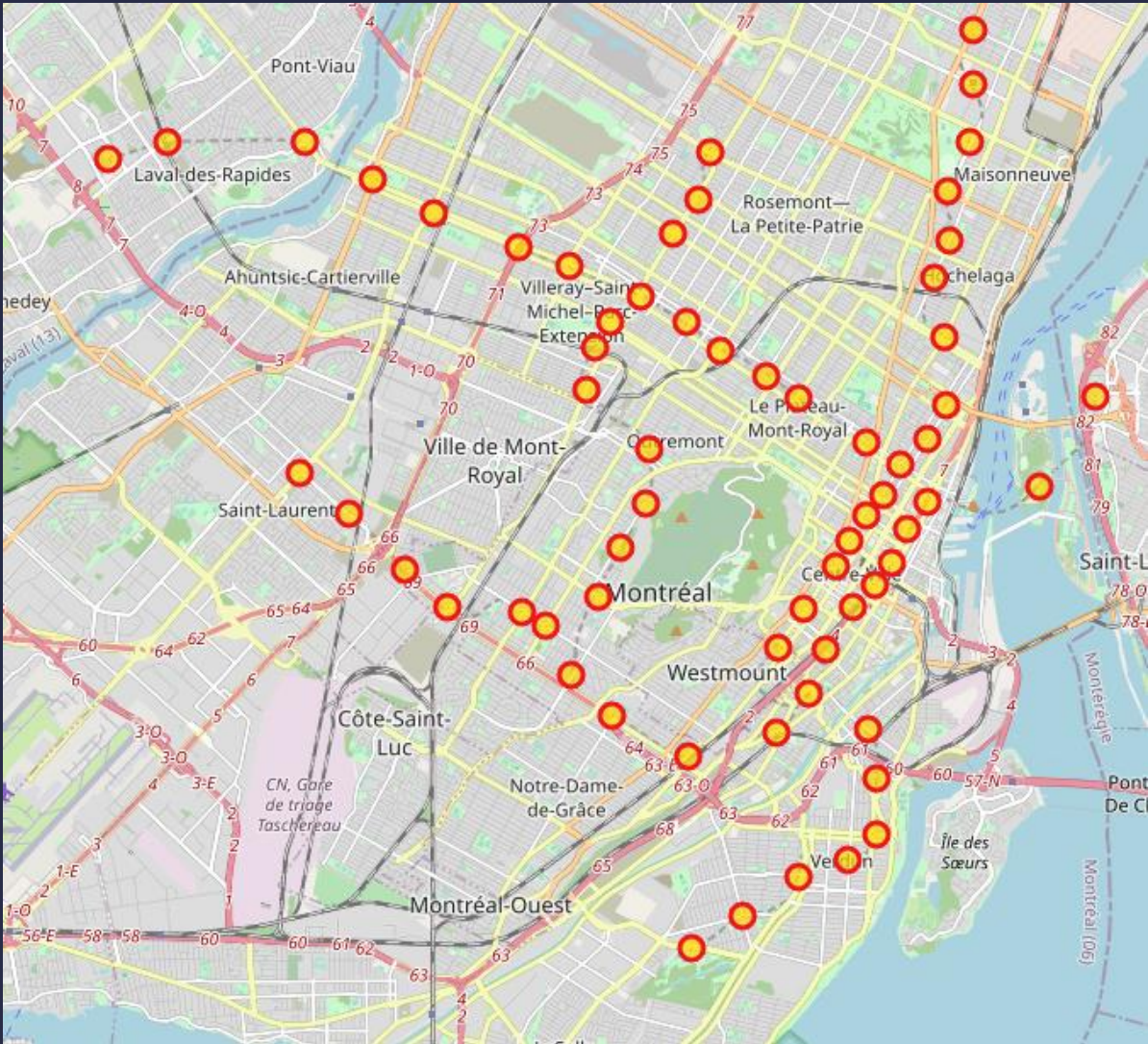
Data acquisition and cleaning

- The list of stations and their location are gathered from **Foursquare City Guide**.
- Due to limitation on Personal account of Foursquare, it tried to customize the search to have only required data.
- Considering the Montreal urban environment and society, for any business it may be very critical to consider accessibility of underground system for choosing location.

Metro Network Illustration



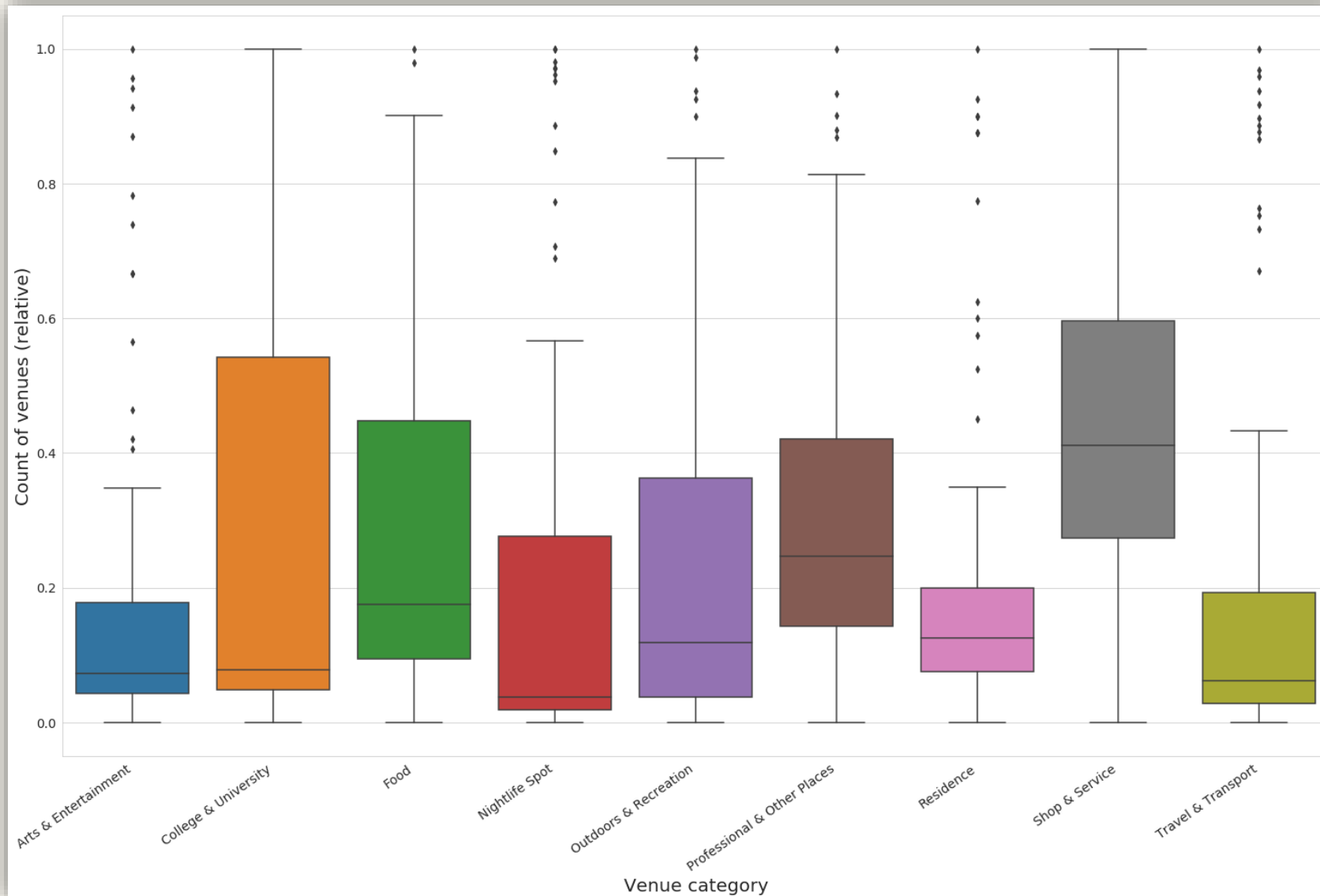
Metro station locations



Data acquisition and cleaning

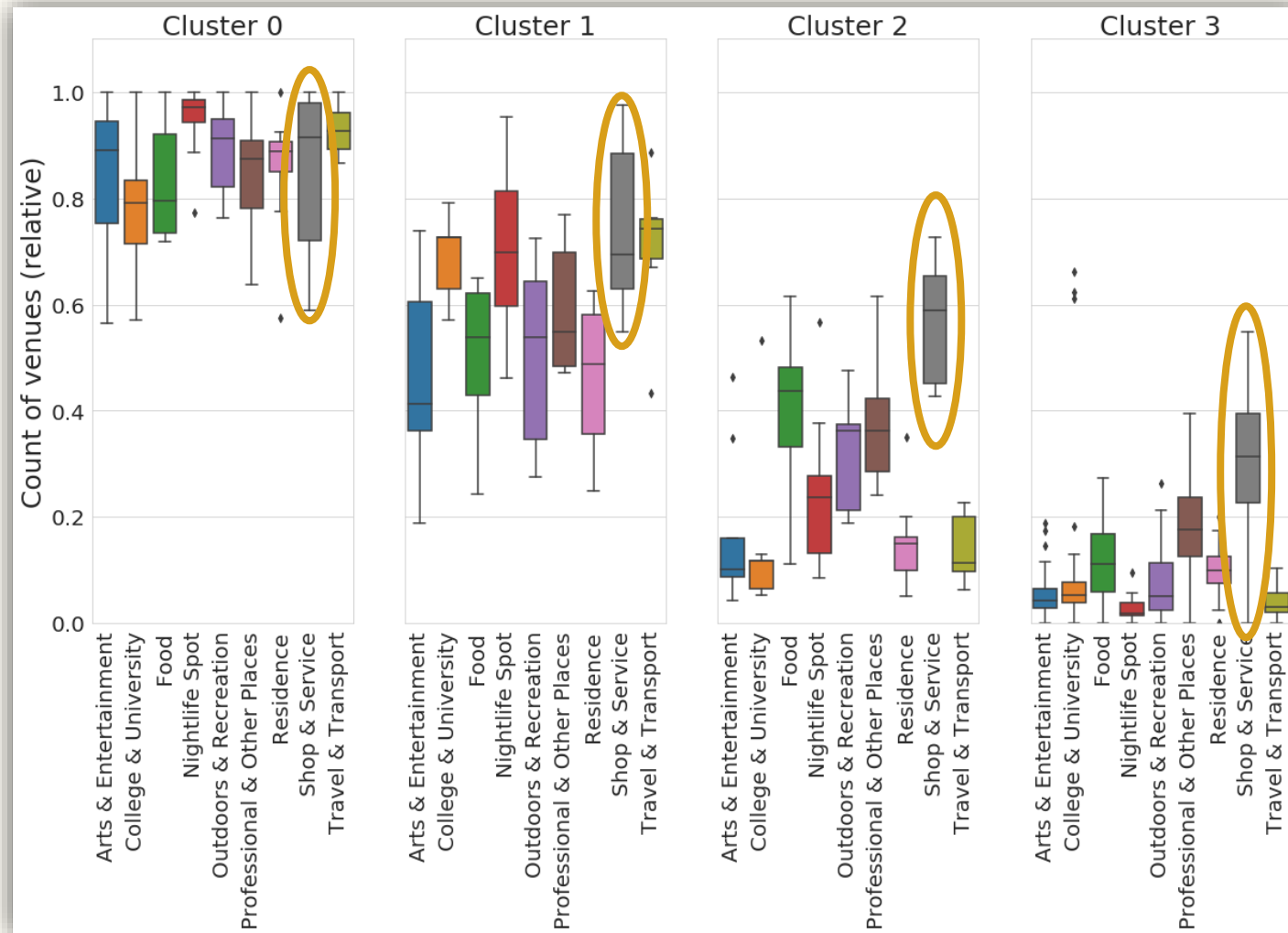
- Foursquare API will be called again to explore venue categories surrounding each station.
- These venues are categorized as:
 - Arts & Entertainment
 - College & University
 - **Event**
 - Food
 - Nightlife Spot
 - Outdoors & Recreation
 - Professional & Other Places
 - Residence
 - Shop & Service
 - Travel & Transport
- **“Event”** has very little data, therefore it ignored from this study.
- A radius of 1km is considered from each metro station to keep the results in an acceptable walking distance.

Count of venue category (normalized)

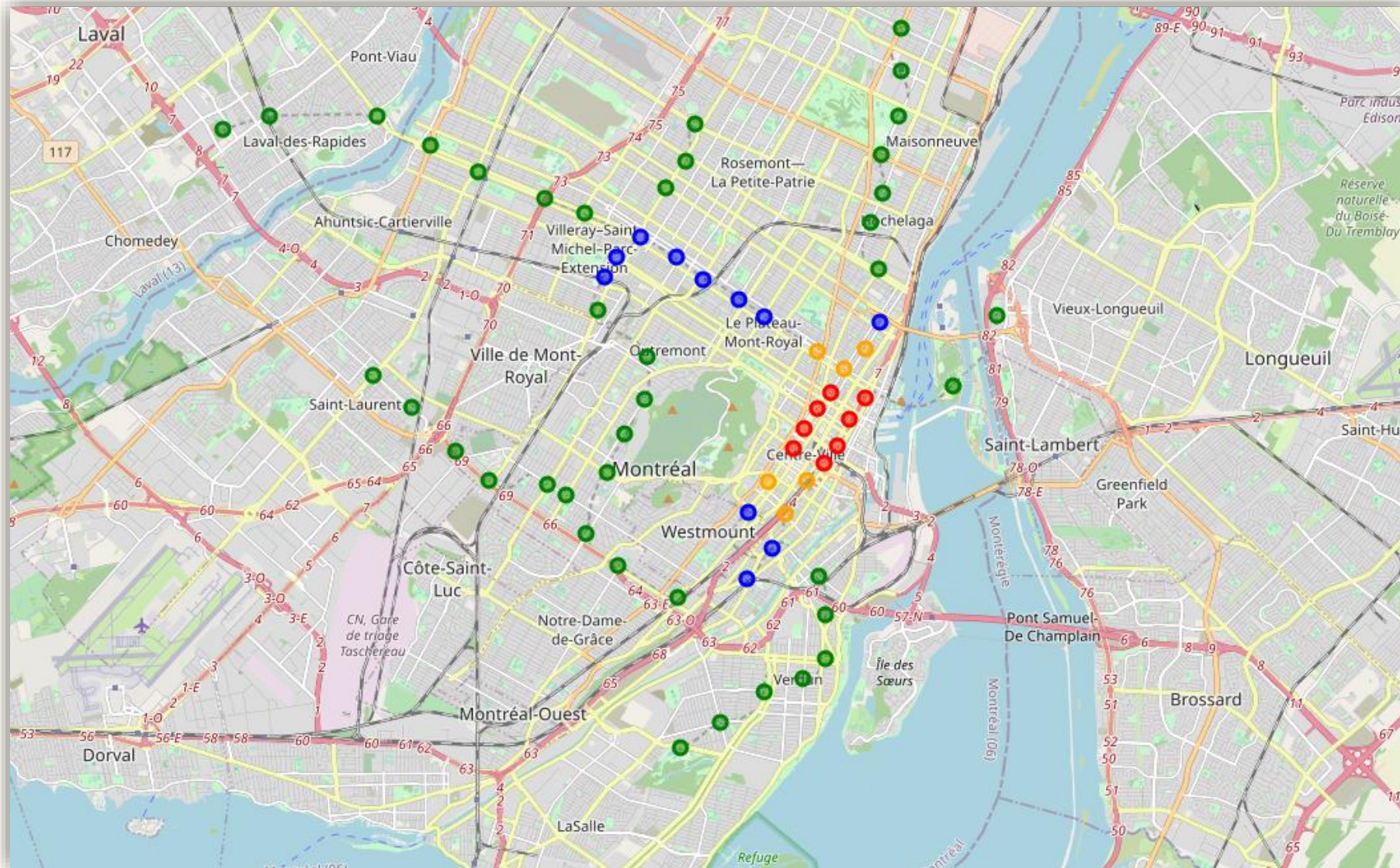


Clustering

- K-means method is employed to categorized the stations into 4 clusters.



Clustering





Conclusion

- In this study area around Montreal metro stations are studied for potential business location.
- The study showed that the areas can be classified in four distinguished clusters.
- Shop&services and Food venues are clearly dominant businesses around metro stations.
- This study is very general, but it can be customized for any business query, to find the best location.