

The Battle of Neighborhoods

NEIGHBOURHOOD CULTURAL OPPORTUNITIES INDEX



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- **In 2005 by Toronto City Council adopted Toronto Strong Neighbourhoods Strategy (TSNS) 2020. The City uses 140 social planning neighbourhoods for designing programs and services.**
- **Need to identify neighborhoods with lowest rating of cultural attractions and to recommend a list of these Priority Neighbourhood Areas for Investment (PNIs).**
- **The rating of the neighborhoods will be based on number of venues in the neighborhoods per capita, as well as the popularity of venues, according to data on Foursquare.**

DATA SOURCE

TORONTO NEIGHBOURHOOD

Neighbourhood refers to the City of Toronto's 140 social planning neighbourhoods. The boundaries of these social planning neighbourhoods are described in GEOJson format and can be uploaded at <https://open.toronto.ca/dataset/neighbourhoods/>

TORONTO NEIGHBOURHOOD PROFILES

The the most recent data which refer to 2016, limited to census data . For the purpose of this report only data regarding population will be used. Data can be uploaded at <https://open.toronto.ca/dataset/neighbourhood-profiles/>

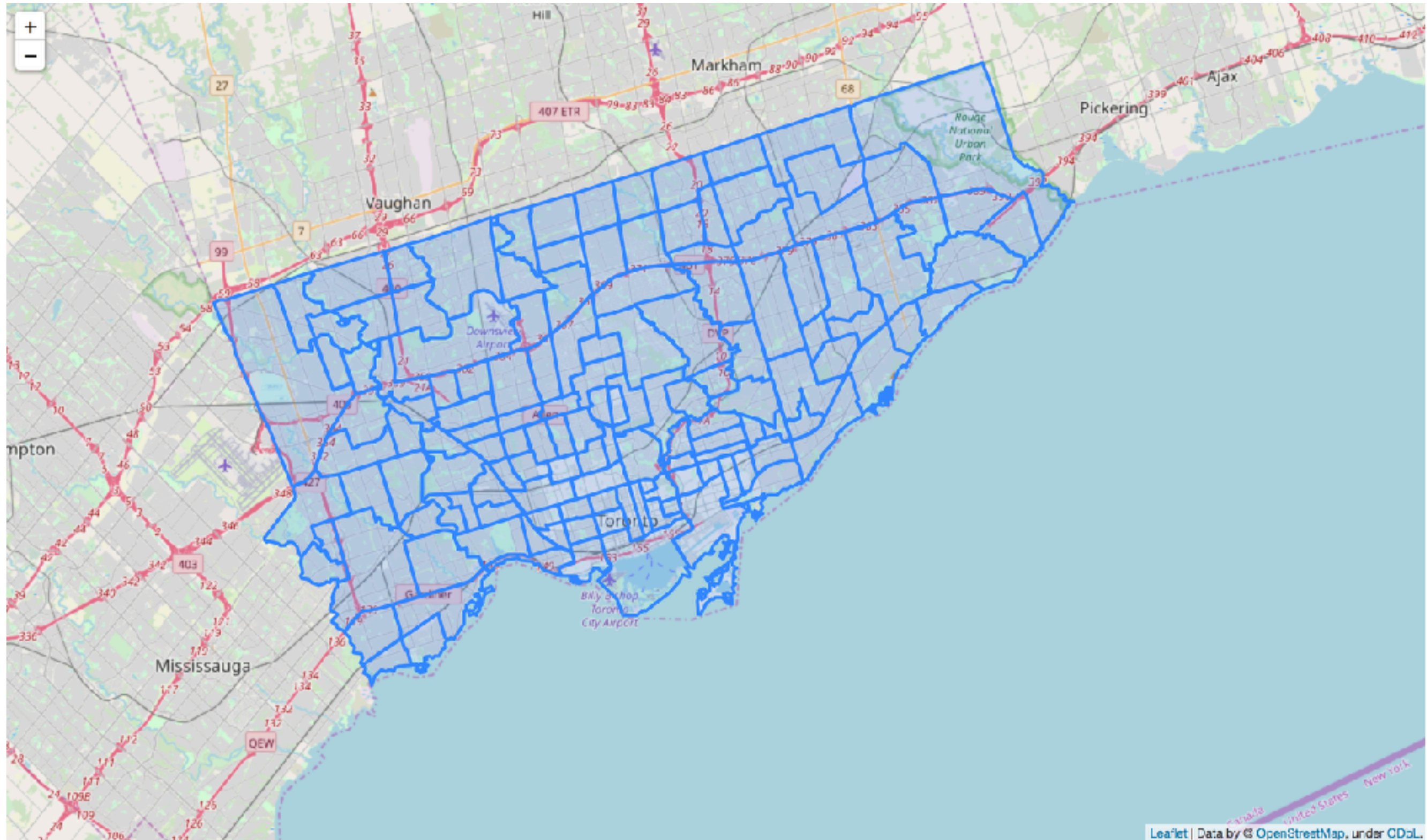
ATTRACTIONS

The data for attractions will be used from Foursquare API for 3 categories of venues

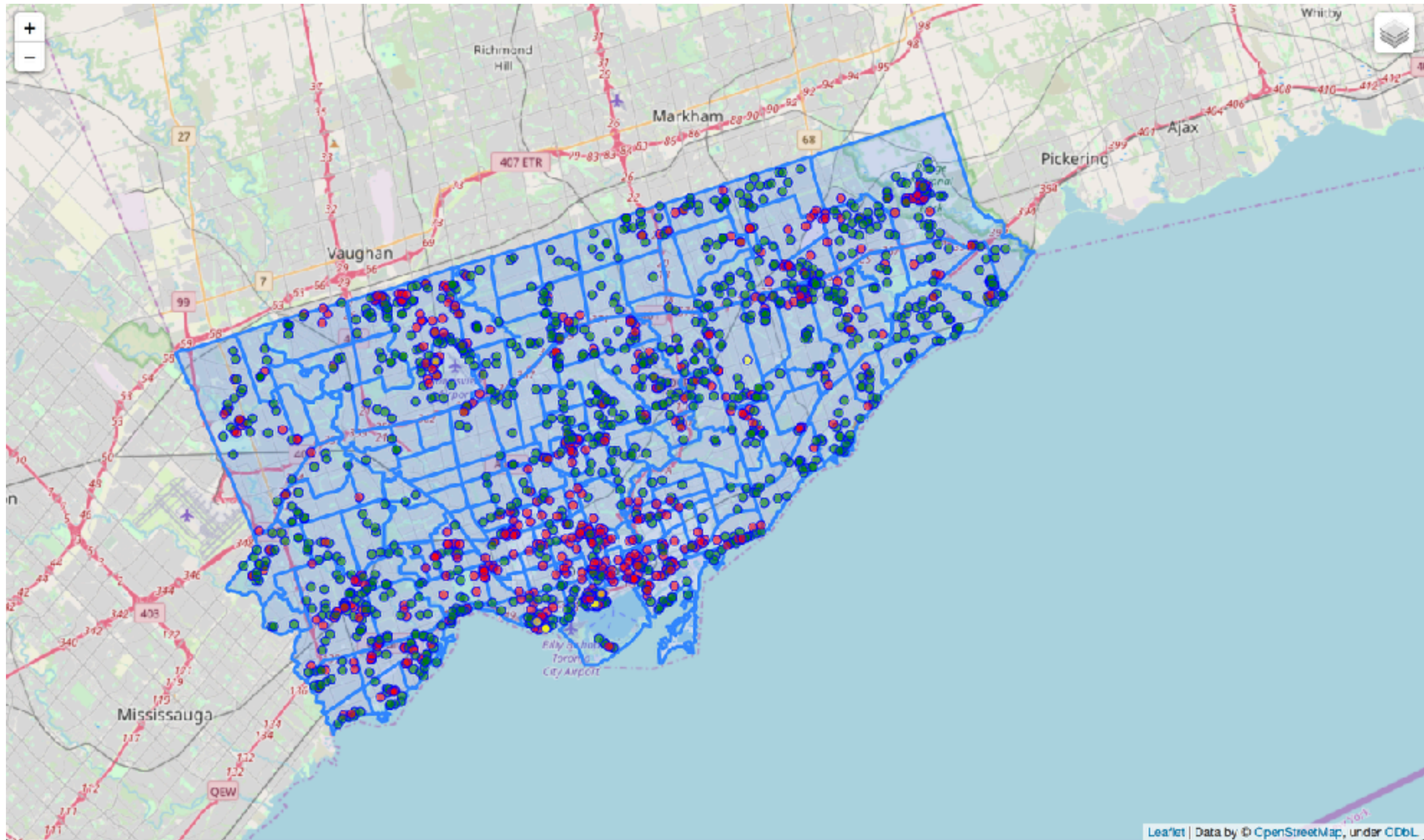
- Arts & Entertainment
- Event
- Outdoor & Recreation

and 50 subcategories

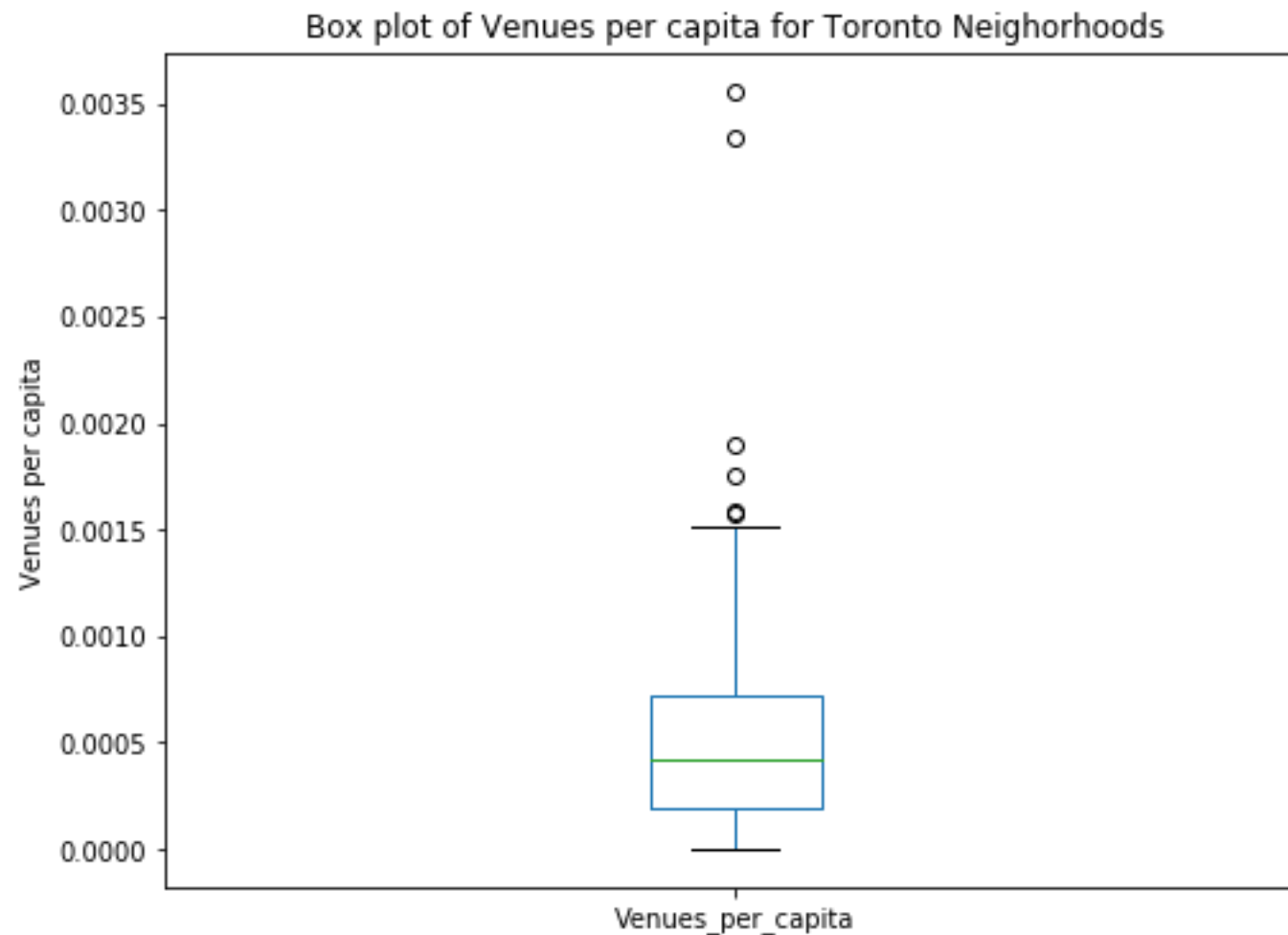
Boundaries of City of Toronto Neighbourhoods



Distribution of 1702 venues per neighborhoods



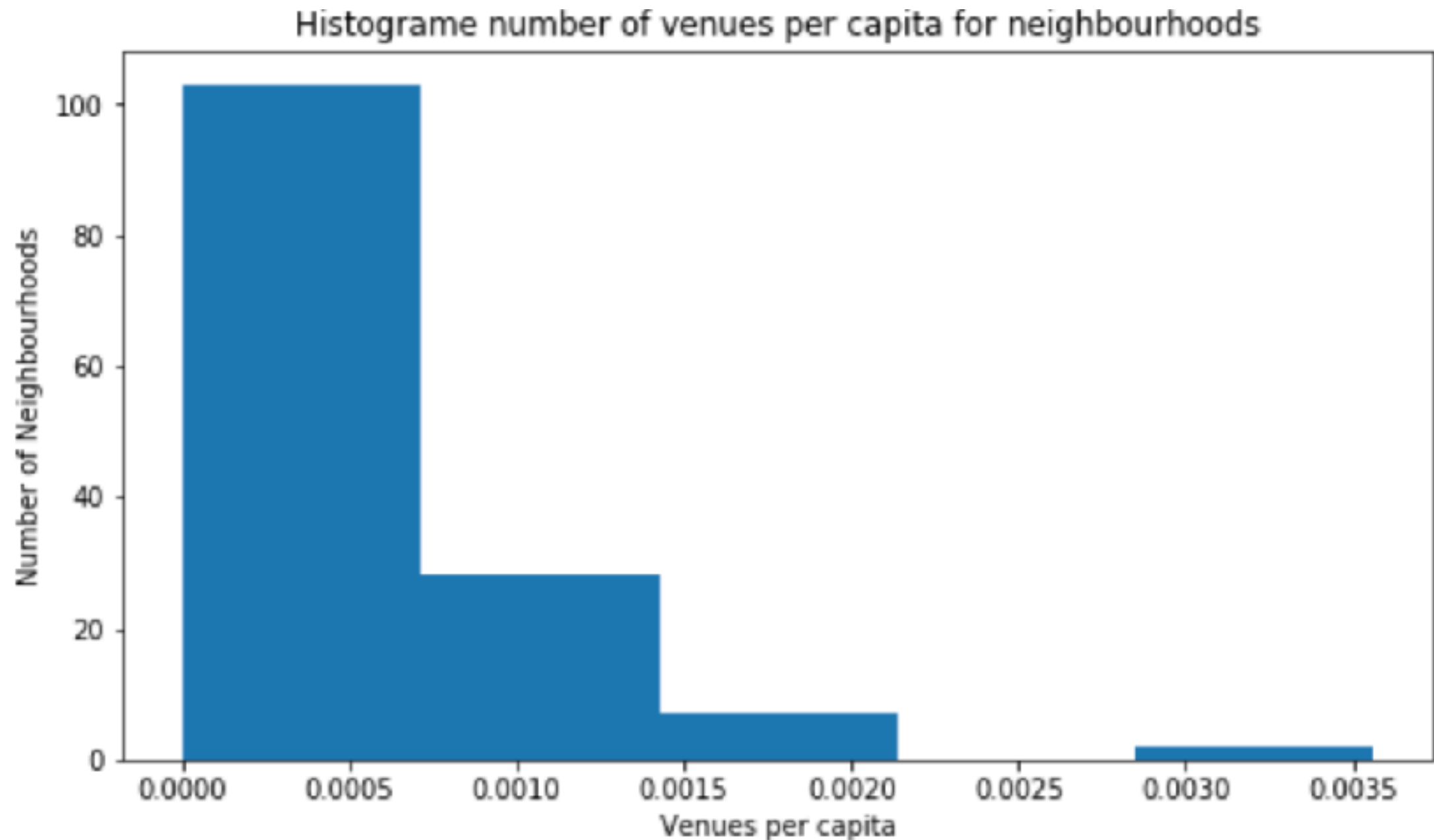
Statistic representation of the distribution of the data



According to the result there are some neighborhoods outliers and majority are distribute between minimum and median.

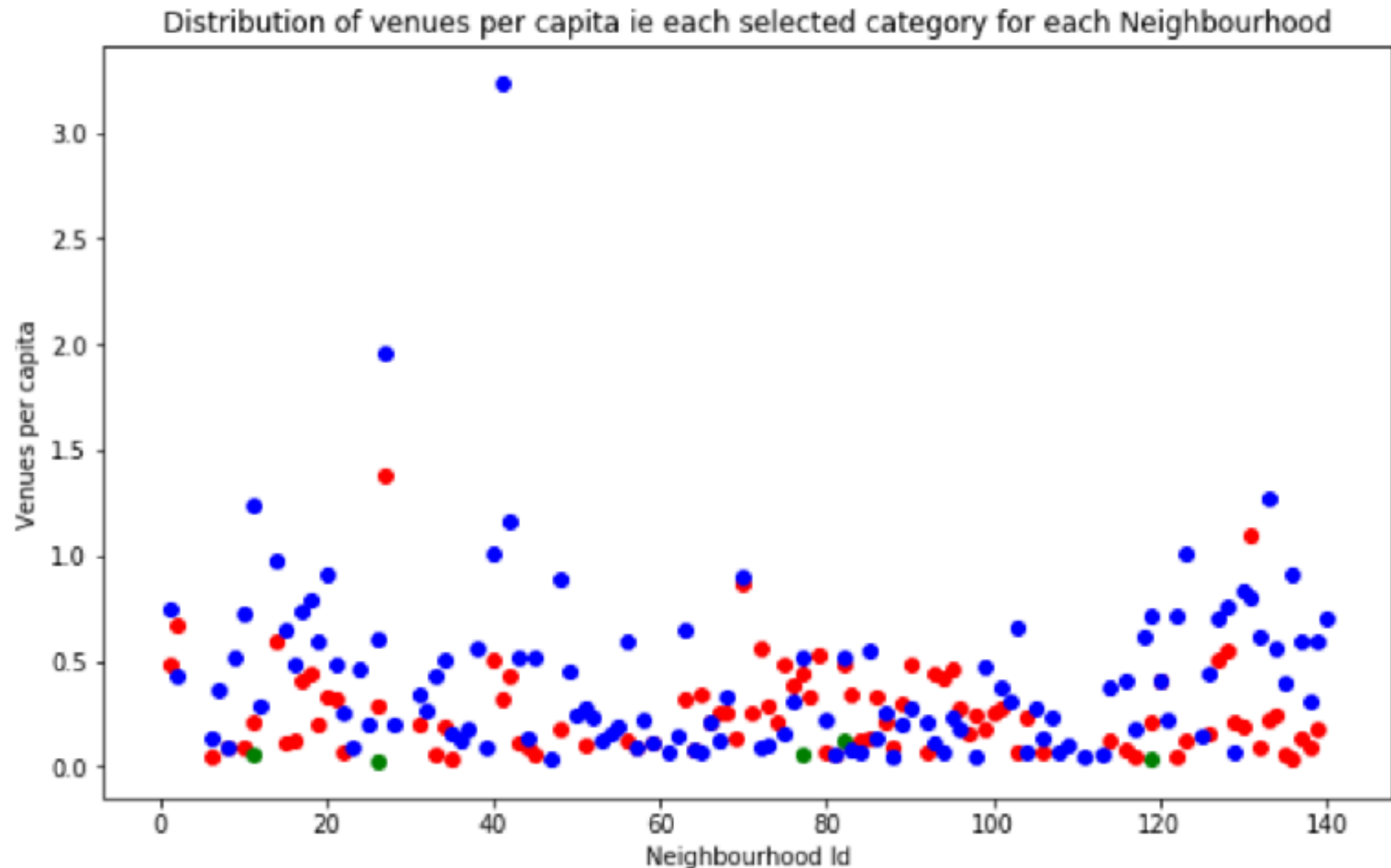
At the same time it's confirmed that the minimum is 0, that's mean there are several neighborhoods without any venues in specified categories.

Histogramme of venues per capita for neighbourhoods



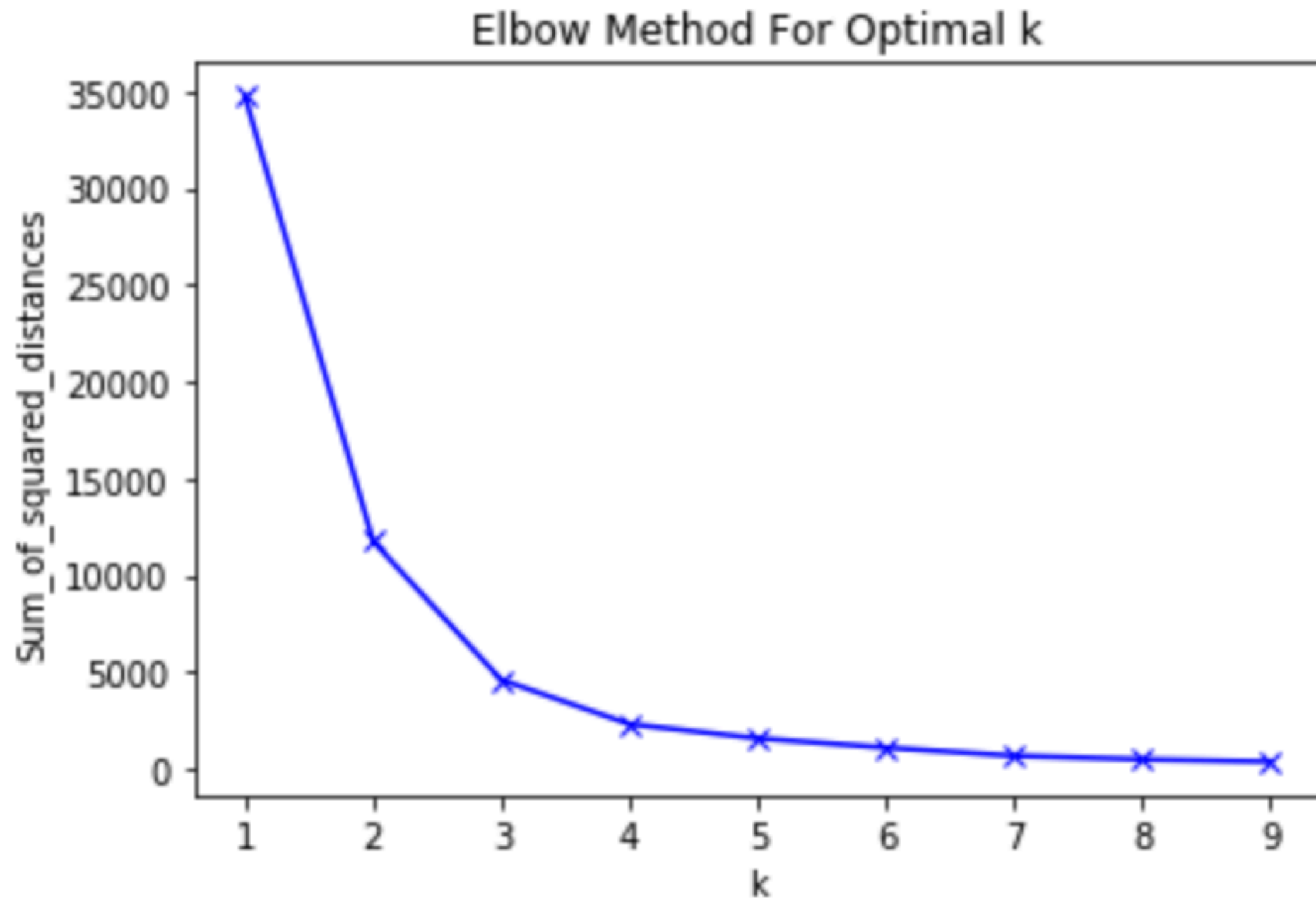
The majority (100 from 140 neighborhoods) have a low index of venues per capita, in limits 0.0000 - 0.0007. At the same time there are some neighborhoods with high index (0.0030 - 0.0035)

Distribution of venues per capita in each selected category



Event category (green color) are practically missed from majority of neighborhoods. The Outdoor&Recreation category (blue) are dominated and in some neighborhoods the index of venues per capita is quite high.

The Optimal k-number of clusters by Elbow Method



The optimal value of k is 4

CONCLUSION

- 1. Not all neighbourhoods are equal developed and cannot offer cultural activities at the same level.**
- 3. There 4 from 140 neighbourhoods with quite high index of cultural opportunity. As a tourist I will select this neighbourhoods to explore more venues in a shorter time.**
- 5. Neighbourhoods with low index are positioned relatively compacted and construction of new amenities in these regions can positively influenced the entire area, not only neighbourhood.**
- 7. The number of Events are quite low, so it's recommended to develop and promote Events, especial in neighbourhoods with low index.**

Future directions

The selected Neighbourhood Cultural Opportunity Index can be used as a subindex for a more complex research, for example in Cultural and Creative Cities Monitor or Quality of Life Index. The set of categories and relationships can be extended.

Another direction of development can be including in the model the ratings of venues, based on Foursquare database, as well as number of visitors of the venues. This will offer the possibility to estimate not only opportunities, but also the popularity of venues and to calculate more exact the impact of venues on the life of inhabitants of the neighbourhood.