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# Where to open a wellness facility in Montréal?

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# Context



- **Montréal:** Second-most populous city in Canada (~2 million inhabitants).
- Lot of business opportunities.
- Clear trend for improved health and wellness in the population.
- As an investor: Which Montréal's neighborhood is best suited to open a wellness facility, for example a gym or yoga studio?

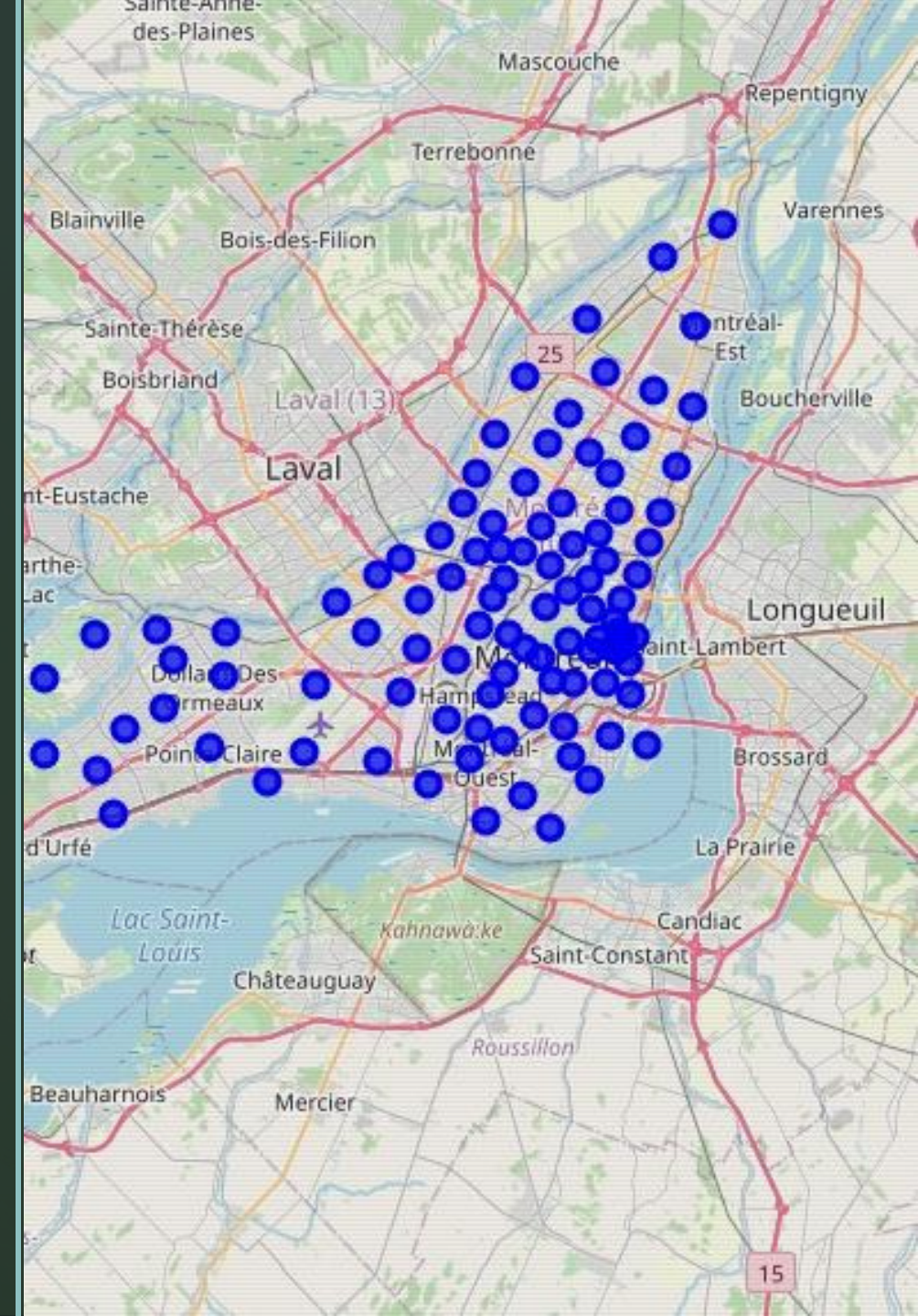
# Analysis' Highlights

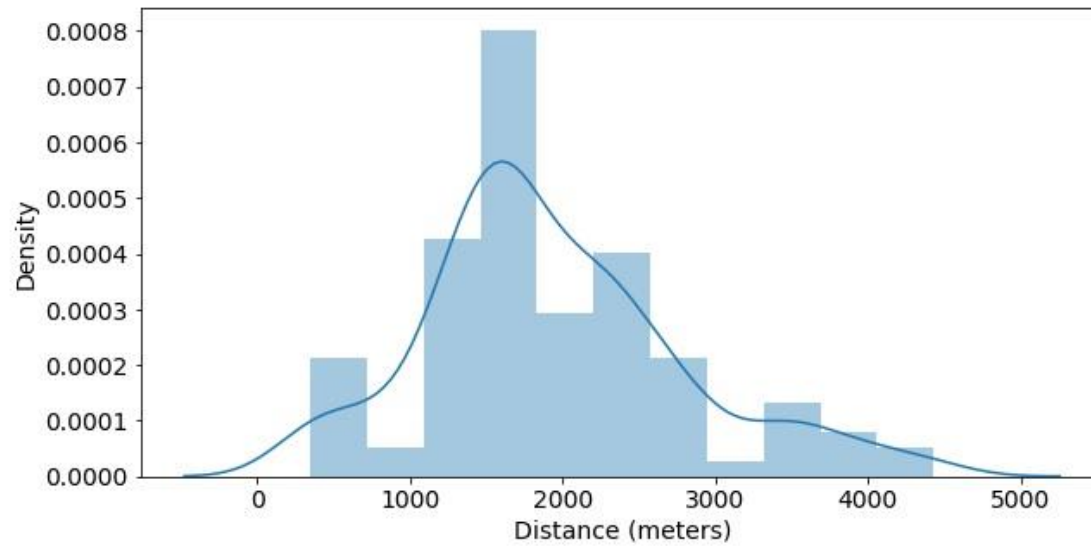
- Leverage FourSquare API to get the venues in each neighborhood of Montréal.
- Find correlations between the broad categories of venues:
  - Restaurants, Arts, Wellness, Fast Foods, Artisanal Food, Bars, Cafés, Public Area, Essentials.
- Biggest difference between actual and expectation (business opportunities):
  1. Ahuntsic Sud-Est
  2. Verdun Nord
  3. Hochelaga



# Methodology

- Neighborhoods according to Wikipedia:
  - Raw: 124. Cleaned: 101.
- Venues categories counting in Wellness:
  - Athletics & Sports, Boxing Gym, Climbing Gym, College Gym, Dance Studio, Gym, Gym / Fitness Center, Gym Pool, Martial Arts School, Massage Studio, Spa, Sports Club, Yoga Studio.
- Find the most correlated categories to Wellness to apply Multiple Linear Regression.





# FourSquare API

Need to specify the radius. What is the optimal radius?

Answer: 1000 meters

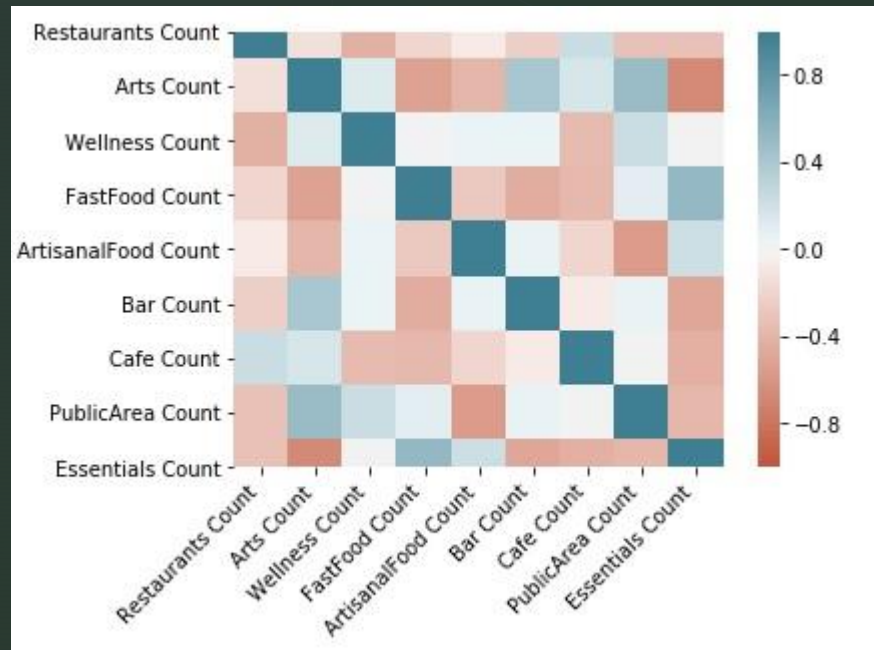
# What are the venues returned?

- Mean number N of venues returned: 41.
- We select only neighborhoods with  $N > 50$ .
- 101 neighborhoods → 31 neighborhoods.

Category	Percentage
Restaurants	27.1%
Arts	7.1%
Wellness	4.7%
Fast Foods	9.7%
Artisanal Food	10.0%
Bars	9.0%
Cafés	12.7%
Public Area	6.4%
Essentials	13.4%



# Correlations between categories



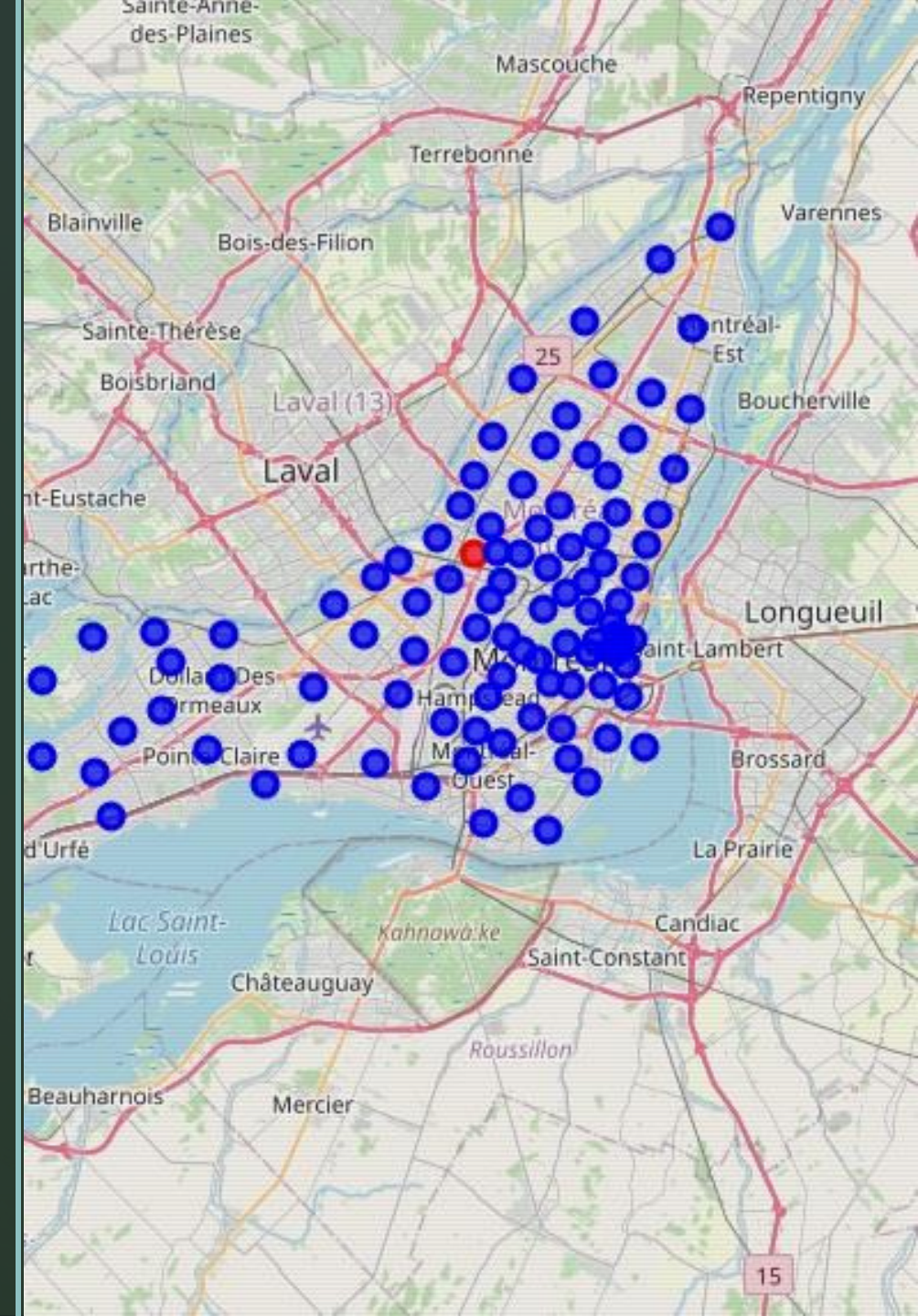
# Best predictors

- Restaurants
  - Pearson Correlation Coefficient: -0.43
  - P-value: 0.017 ( $<0.05$ )
- Cafés
  - Pearson Correlation Coefficient: -0.36
  - P-value: 0.044 ( $<0.05$ )



# Multiple Linear Regression

- Largest negative error (business opportunity):
  - $y - \hat{y} = -0.045$
  - Ahuntsic Sud-Est



# Ahuntsic Sud-Est

Which wellness facility should we invest in?

	Wellness Facility	Count
0	Athletics & Sports	0
1	Boxing Gym	0
2	Climbing Gym	0
3	College Gym	0
4	Dance Studio	0
5	Gym	0
6	Gym / Fitness Center	1
7	Gym Pool	0
8	Martial Arts School	0
9	Massage Studio	0
10	Spa	0
11	Sports Club	0
12	Yoga Studio	0



# Summary

- Ahuntsic Sud-Est seems to be the best neighborhood where to open a wellness facility.
- Excellent starting point, but not the end of the road:
  - What about the other neighborhoods with large negative errors such as Verdun Nord and Hochelaga?
  - Which kind of fitness facility should we invest in?
  - Can we quantify the impact of the chosen parameters on the analysis' results?



Thank you

