



BATTLE OF NEIGHBORHOODS: CHOOSING LOCATION FOR A NEW RESTAURANT IN MOSCOW, RUSSIA

IBM Applied Data Science capstone project

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Evaluating Moscow's districts

Moscow is a 12-mln city with highly competitive business environment.

Evaluating the city's districts in terms of seats availability (=market saturation) will facilitate decision-making process for:

- investors planning a new business in the eating-out industry,
- existing business proprietors,
- city authorities and regulators.



The Data

- Moscow districts (12 polygons) with polygonal coordinates:

<http://gis-lab.info/data/mos-adm/ao.geojson>

- Detailed data for Moscow's eating-out locations – scraped from the city administration website (data.mos.ru):

https://raw.githubusercontent.com/RunnerTony/CoureraProjectsRepo/master/moscow_eatout_json_utf8.txt (contains 16299 rows & 16 columns)

- Dataset with population data by district – scraped from statdata.ru:

https://raw.githubusercontent.com/RunnerTony/CoureraProjectsRepo/master/moscow_population_v2.csv

Connecting the datapoints

Муниципальное образование	Все население	В т.ч. городское	В т.ч. сельское
Город федерального значения - г. Москва	12 197 596	12 054 243	143 353
Восточный округ	1 495 835	1 495 835	0
в том числе муниципальные образования Восточного округа:			
Богородское	106 828	106 828	0
Вешняки	121 693	121 693	0

Address	AdmArea	...	Name	SeatsCount
улица Егора Абакумова, дом 9	Северо-Восточный административный округ		СМЕТАНА	48
улица Талалихина, дом 2/1, корпус 1	Центральный административный округ		Родник	35

District	Population	SeatsCount
Северо-Восточный	1 402 928	90 083
Центральный	760 690	245 833
Восточный	1 495 835	74 862
...		

aggregate by district



The “Saturation” measure

$$\text{Saturation} = 1000 \times \text{SeatsCount} / \text{Population}$$

The idea is to measure the degree of market saturation in each district's eating-out industry. The saturation measure equals number of seats available in restaurants/cafes etc. per '000 of population. The higher the measure, the more saturated the market in a given district.

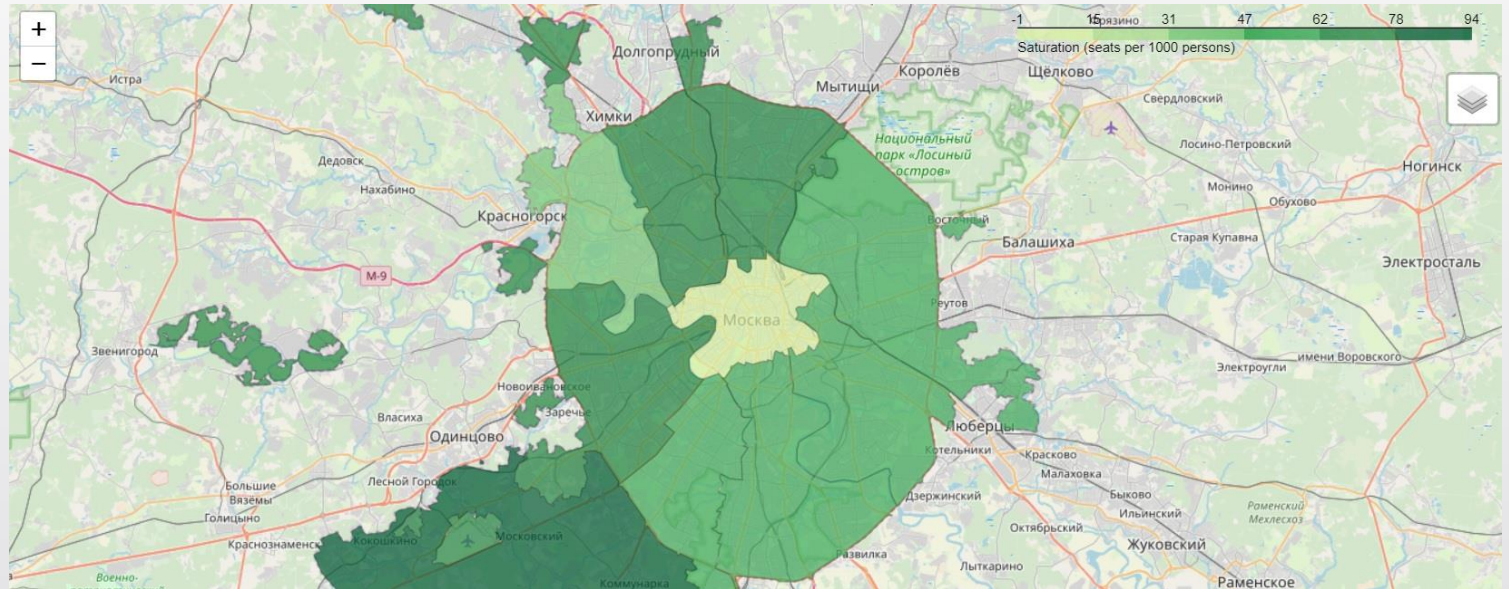
The result

District	Saturation
Центральный	323.2
Новомосковский	93.0
Зеленоградский	73.9
Западный	68.2
Северо-Восточный	64.2
Троицкий	63.9
Северный	63.3
Южный	58.9
Восточный	50.0
Юго-Восточный	48.3
Юго-Западный	46.8
Северо-Западный	45.1

I've calculated the saturation measure for each of the 12 districts. The results suggest that prospective investors making a choice of location for a new restaurant/café/snack-bar should focus on the least saturated districts, namely, “Северо-Западный” (North-West), “Юго-Западный” (South-West) and “Юго-Восточный” (South-East).

Visual representation

Here, the results are shown as a “heat-map” of Moscow, with darker colors corresponding to most saturated districts (the Central district is excluded, as its extremely high saturation value makes an outlier).





Conclusion

This project resulted in a visually recognizable evaluation of Moscow districts in terms of eating-out market saturation. The results should be of particular interest for decision-maker both in the industry itself, and in the city's administration.

Prospective enhancement of this project might include:

- getting down to the next level of detail and performing similar analysis with neighborhoods data,
- refining the analysis by adding data on consumer traffic, population income levels etc.
- introducing more specific analysis by distinguishing among different types of premises (restaurant, café, canteen etc.)