



# PRAGUE

## IS THERE AN OPPORTUNITY FOR A DENTIST ?

# Background and Business Problem

Czech Republic is one of the Eastern European countries that went through a successful transformation from ex-communist to market economy. The country has a diversified economy that grows by 3-5% per annum compared to 1.5-2.5% on average for EU. The per capita GDP (nominal) is 22.6 kUSD, services sector accounts for about 60% of the economy.

Our presentation covers the dental services supply in Prague. Our report is targeted at the stakeholders interested in opening a dental clinic in this city.



HOW MANY DENTISTS ARE THERE? IS THIS ENOUGH?

WHERE ARE THEY LOCATED? IS THERE ANY PATTERN?

IS THE COMPETITION HIGH OR LOW COMPARED TO OTHER CITIES?

# APPROACH AND METHODOLOGY



## **CITIES**

Select comparable cities based on population size and per capita income



## **DENTISTS**

Get dentists locations using Google API



## **ALGORITHMS**

- Detect location patterns using machine learning
- Calculate distances between locations



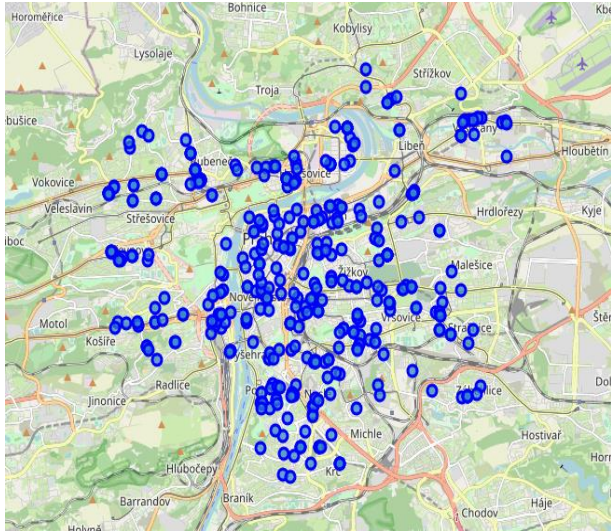
## **MEANING**

Discuss the results and implications

USING THE GOOGLE PLACES API WE COLLECTED THE INFORMATION ON DENTAL CLINICS LOCATIONS IN SELECTED CITIES AND COMPARED THE PATTERN AND DENSITY OF THESE LOCATIONS IN ORDER TO UNDERSTAND IF PRAGUE IS AN ATTRACTIVE PLACE TO START A DENTAL SERVICES BUSINESS



# DENTISTS' QUANTITY AND LOCATIONS

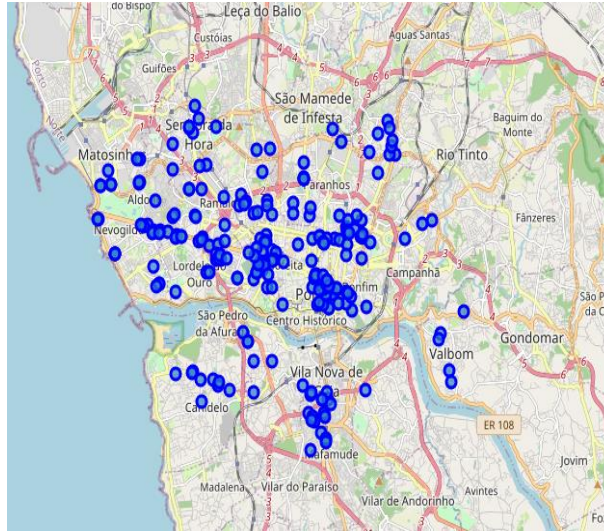


## PRAGUE

Population: 1.3 million

Country's GDP per capita: 22.6 kUSD

Dentists in the city center: 449

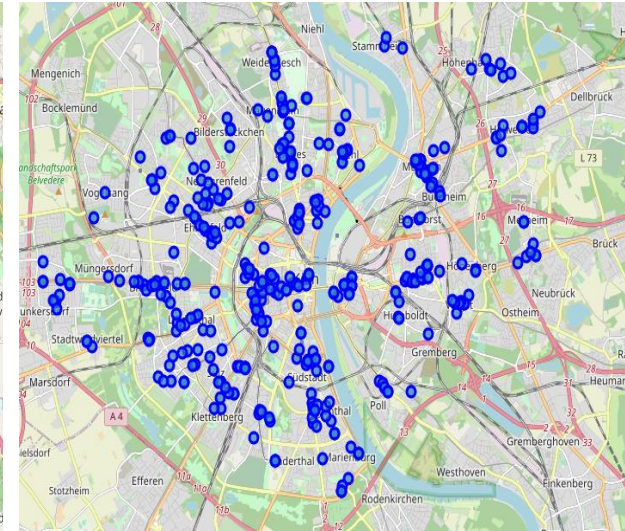


## PORTO

Population: 1.3 million

Country's GDP per capita: 21.6 kUSD

Dentists in the city center: 241



## COLOGNE

Population: 1.1 million

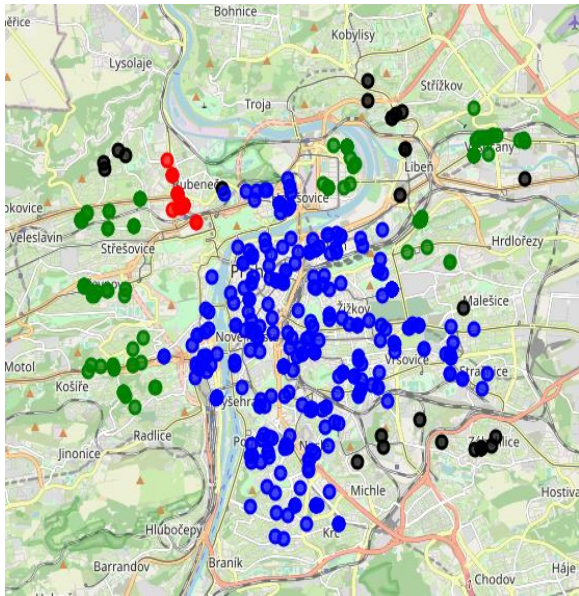
Country's GDP per capita: 45.5 kUSD

Dentists in the city center: 422

WE'VE SELECTED ONE CITY WITH SIMILAR POPULATION FROM A COUNTRY WITH SIMILAR GDP PER CAPITA; AND ANOTHER SIMILAR CITY FROM A RICHER COUNTRY. BOTH THESE CITIES HAVE LESS DENTISTS THAN PRAGUE.



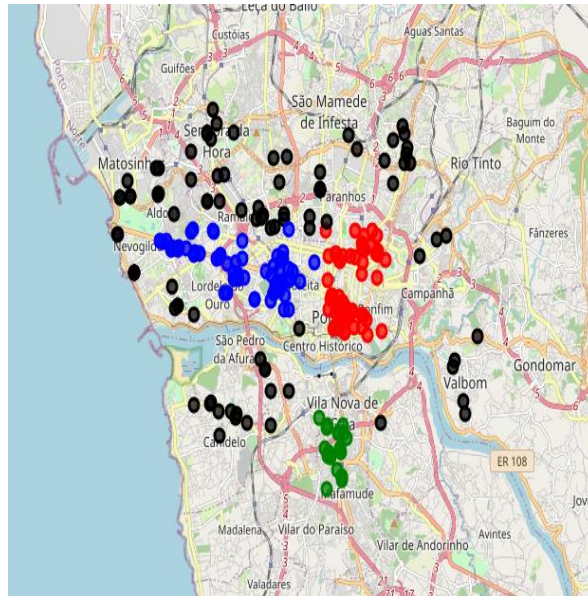
# LOCATION PATTERNS



## PRAGUE

A single large cluster with high density covers the city center

Smaller clusters form separate groups; there are few stand-alone locations (shown in black)

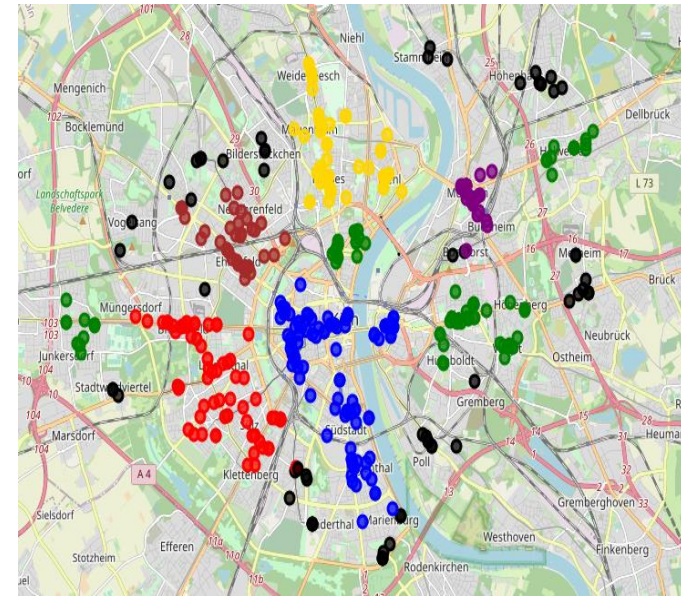


## PORTO

Overall lower density

Three separate groups / clusters

More of stand-alone locations scattered around the city (in black)



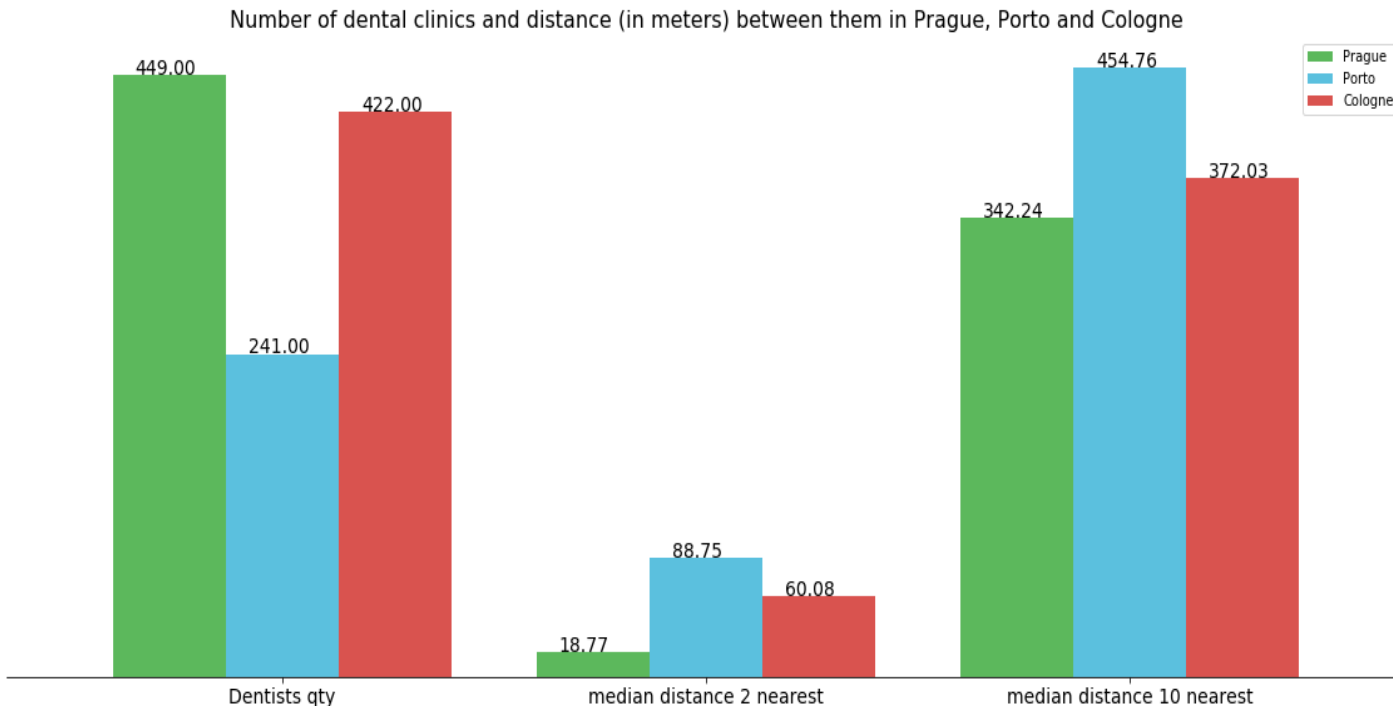
## COLOGNE

Distinctive clusters, few stand-alone locations

Overall density lower than in Prague (spaces between clusters)

IN ALL CITIES DENTISTS TEND TO BE LOCATED NEAR EACH OTHER. CLUSTER ANALYSIS SHOWS THAT COMPARED TO OTHER CITIES PRAGUE HAS THE MOST DENSE NETWORK OF DENTAL CLINICS IN THE DOWNTOWN.

# SUMMARY OF FINDINGS



The size and density of the dentists' network in Prague is larger than in Porto and even larger than in Cologne – a city in Germany which has per capita income twice as large as Czech Republic.

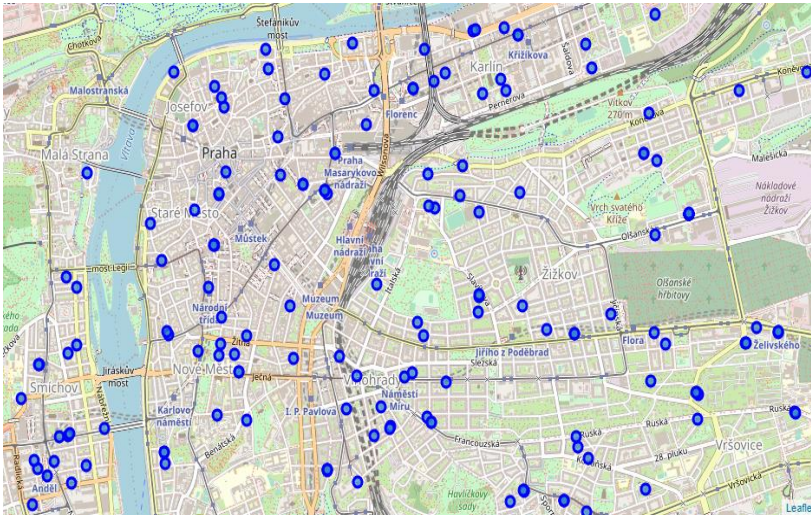
In the center of Prague  $\frac{1}{2}$  of the dentists are in just about 20 meters from each other, for Cologne and Porto this distance is larger but still less than 100 meters.

**LOOKS LIKE PRAGUE IS ALREADY OVERCROWDED WITH DENTISTS.  
WHY?**

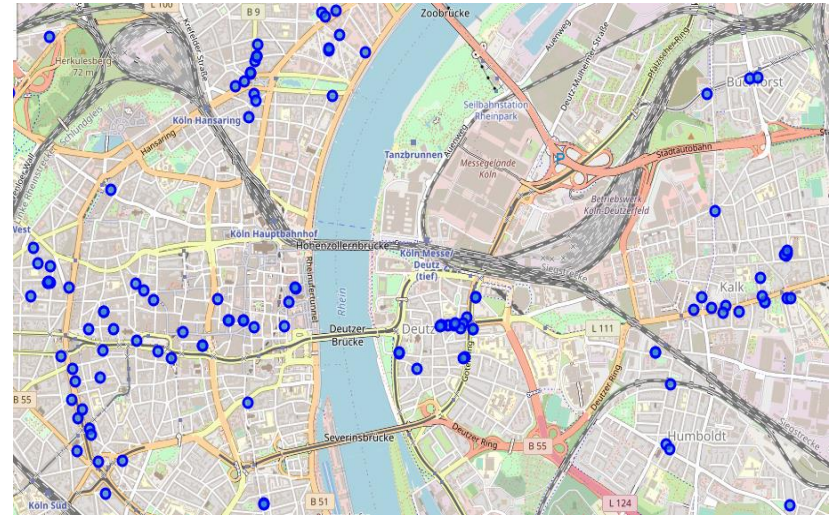


# DISCUSSION AND CONCLUSION

## DENTISTS - PRAGUE CENTER



## DENTISTS - COLOGNE CENTER



The competition among dentists in Prague is much stronger than one could expect given just the size of the city and per capita income of the country.

A possible explanation for such situation could be that this network of clinics has developed to serve not only local customers, but also “medical tourists” from richer countries – Germany and Austria are within few hours’ driving distance from Prague while prices in local currency are lower than in these countries.

**IN OUR OPINION TOURISTS REPRESENT A SIGNIFICANT PART OF CUSTOMERS.  
STAKEHOLDERS INTERESTED IN DENTAL SERVICES BUSINESS IN PRAGUE  
SHOULD BE CAREFUL ABOUT WHAT CLIENT SEGMENT TO TARGET.**