



PORTO

Fraunhofer Spaghettis

Introduction

How can tourism be quantified in a business meaningful way?

What data is available for solving this problem?

What geographical granularity would provide the most value?

Background - Literature Review

- Several factors account for considering successful tourism:
Transport offer,
- Analysis of Critical Success Factors for Entertainment
Tourism Destinations: The Supply Perspective

Background - Data

What are we looking for?

Most precise
geographical location
possible.

Successful tourism
factors.

Problem Definition

How can we quantify how interesting are particular areas of the city?

Supply

Cultural offers
Leisure opportunities
Accessibility capabilities



Demand

Network usage levels
Interaction with Points of
Interest
Commercial Flow

Solution - Supply

- Supply can be defined as the offers that a particular area, which the visitors can use and spend time on;
- Datasets used:
 - Cultural points of interest: “Cinemas”, “Estátuas”, “Bibliotecas”, “Miradouros”, “Monumentos”, “Museus e Centros Temáticos”, “Concertos”, “Teatros”;
 - Accessibility points: “STCP Paragens”, “Metro Paragens”, “Praças de Taxi”;

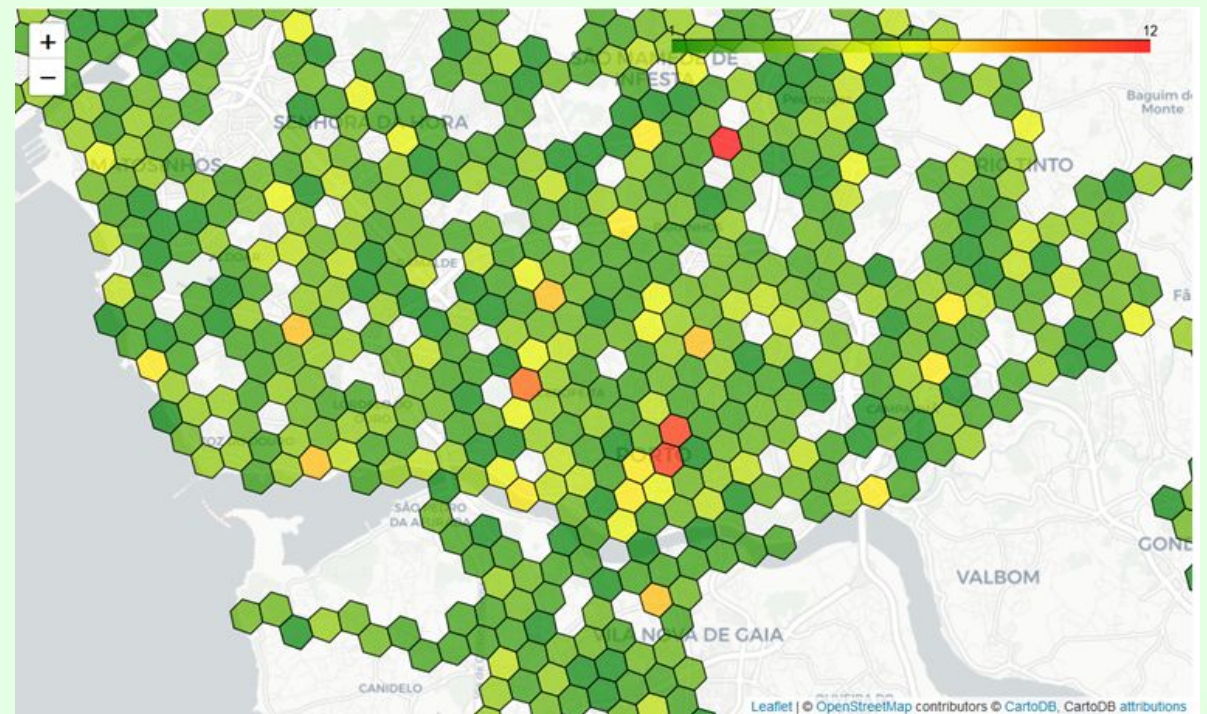
Solution - Demand

- Demand can be defined as the amount of search for products of services that exists in a particular area;
- Datasets used:
 - Internet usage: “Wifi AP”
 - Interaction with points of interest: “Points of Interest”
 - Transport usage: “E-scooter trips”

Solution - Geographical Division

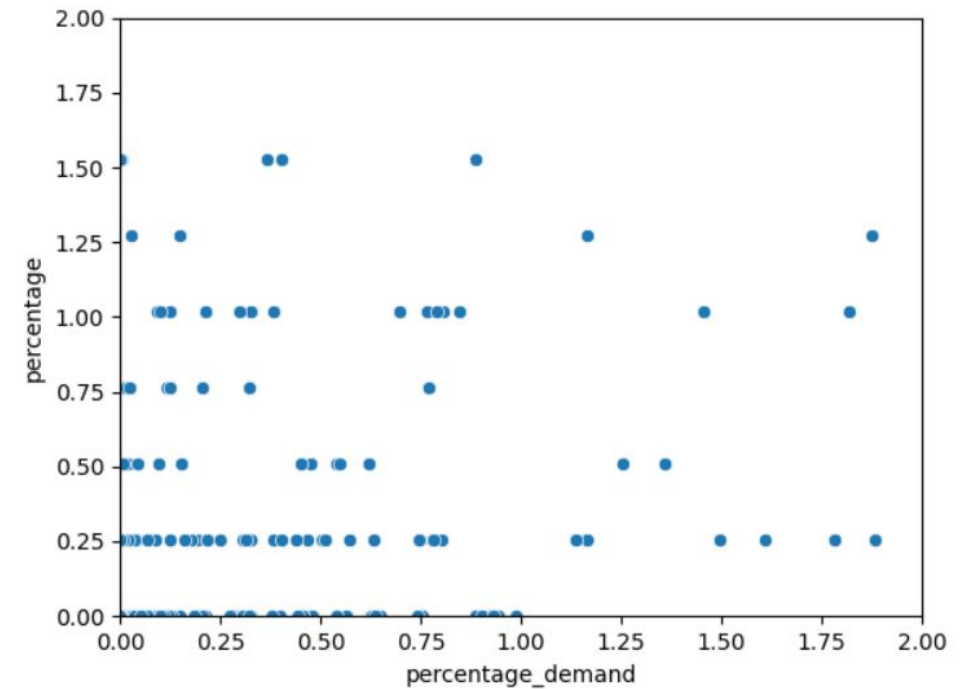
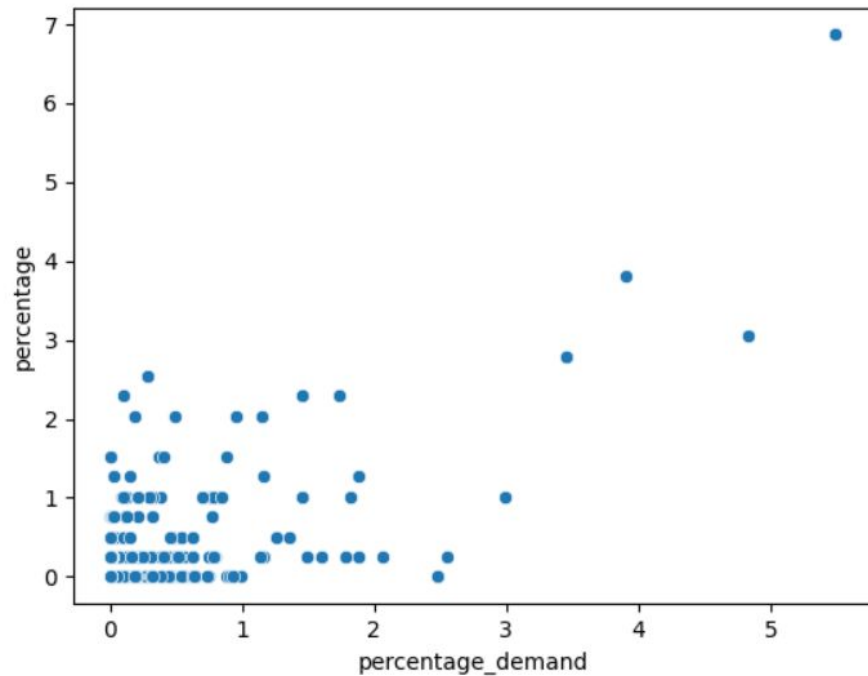


By Parish (source: @magamig, Github)

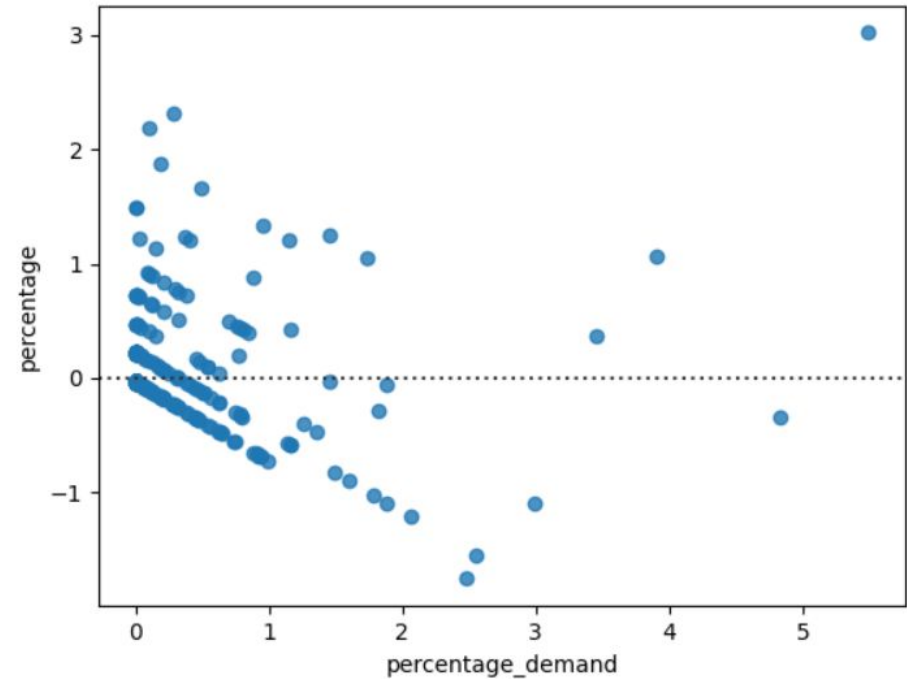
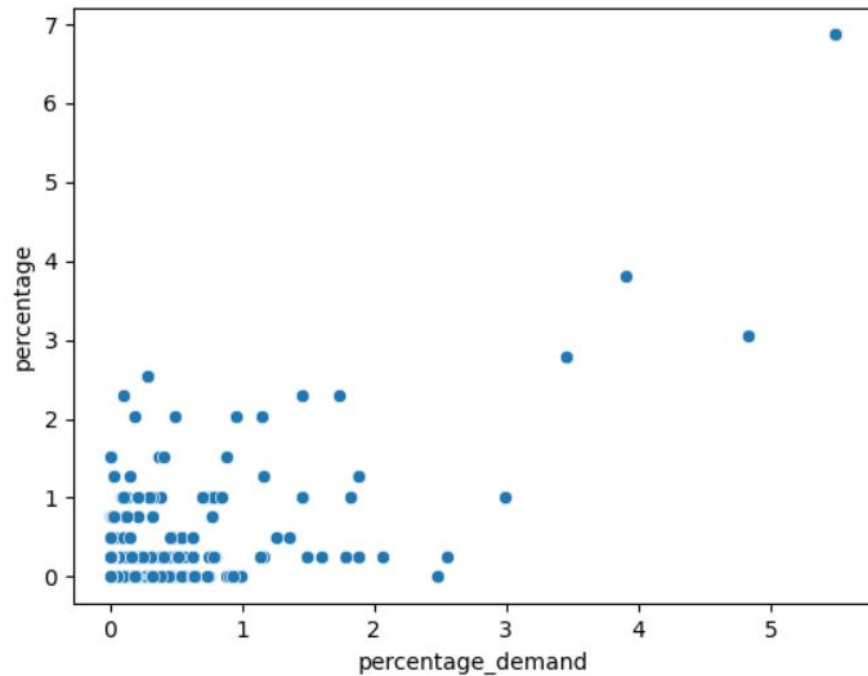


By Hexagon

Results



Results



Conclusion

- Supply & Demand By Hexagons solution: Interesting and feasible;
- Limitation: Lack of geographical location data;

Data Quality Improvements

- Include precise geographical location in the datasets;
- Increase granularity of data (hourly);
- Standardization of available data formats (csv, geojson, etc..)

Future Work

- Usage of datasets from other domains (Commercial Flow, Transport Frequency, Social Media platforms ...)
- Forecasting the demand or supply level depending on the area characteristics;
- Explore other possibilities of defining the demand and supply formulas;
- Explore demand and supply variability across time;

Thank you!