



APPLIED DATA SCIENCE CAPSTONE

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Executive Summary

- The entry of Norwegian salmon onto the global sushi plate can be described as a disruption. It opened up a new market for Norwegian salmon, in which margins were substantially higher and volume eventually exploded during the rise of the global sushi trend. Norway's **fresh salmon exports to Poland grew 15% in 2018**, combined with a Substantial rise in export price of fresh salmon.
 - At same time, Poland is home to Business services centers of companies from **41 countries**. The city of **Kraków** has most of jobs in the sector with **70,000 employees**, which means a 23% share in Poland. The sector created more than **56,000** jobs in Warsaw and **47,500** jobs in Wrocław. Therefore it is advantageous to compare that growing cities and the trends with sushi restaurants.
 - In this Project I am using the Foursquare API to explore Wrocław and Kraków, evaluating infrastructure and trending restaurants using a Folium to visualize the results on interactive maps.
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Introduction

- In this project I've decided to leverage the Foursquare location data to compare differences between the cities of Wrocław and Kraków. Our target audience are salmon exporters, taking in consideration the cities Wrocław and Kraków which are growing with headcounts for Business services centers.
 - While evaluating venues such as restaurants and obtaining additional information about other venues we expect to provide insights about which city would represent a better choice for salmon exporters, based on Foursquare ratings.
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Literature review

- Trade insights: Norway's fresh salmon exports to Poland grew 15% in 2018

<https://www.undercurrentnews.com/2019/01/21/trade-update-norways-fresh-salmon-exports-to-poland-grow-15-in-2018/>

- Substantial rise in export price of fresh salmon:

<https://www.ssb.no/en/utenriksokonomi/artikler-og-publikasjoner/substantial-rise-in-export-price-of-fresh-salmon--390240>

- How Norway disrupted sushi:

<https://implementconsultinggroup.com/how-norway-disrupted-sushi/>

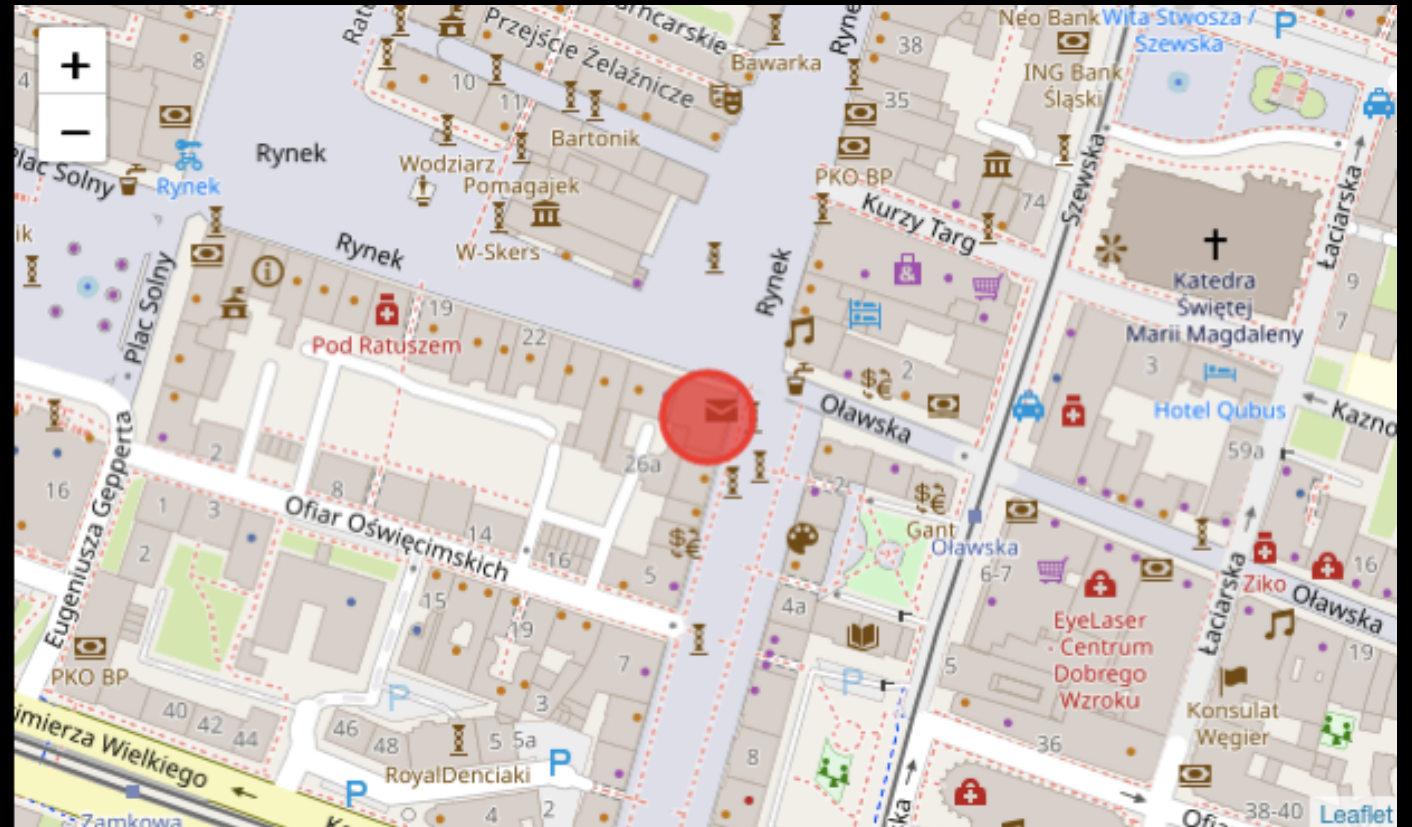
- Report "Business services sector in Poland in 2019"

https://absl.pl/wp-content/uploads/2019/06/raport_absl_2019_EN_190602_epub.pdf

Methodology

- The project is using data from the Foursquare API to solve the problem and obtain maps for Wrocław and Kraków. Other datasets are used in combination with the Foursquare location data to provide adequate explanation and discussion with examples provided on the next slides.
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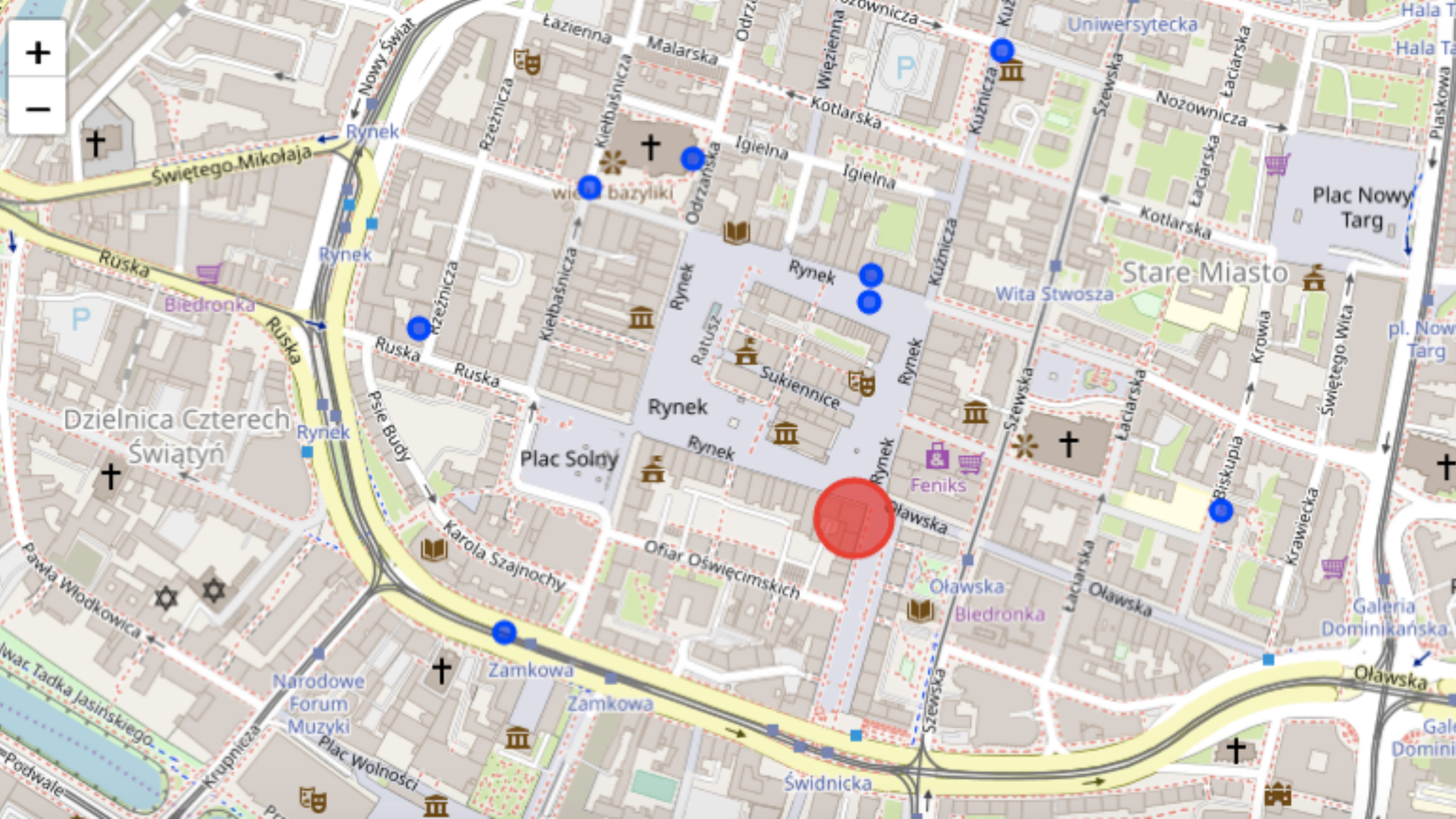
Results



Results

Descriptive Statistics

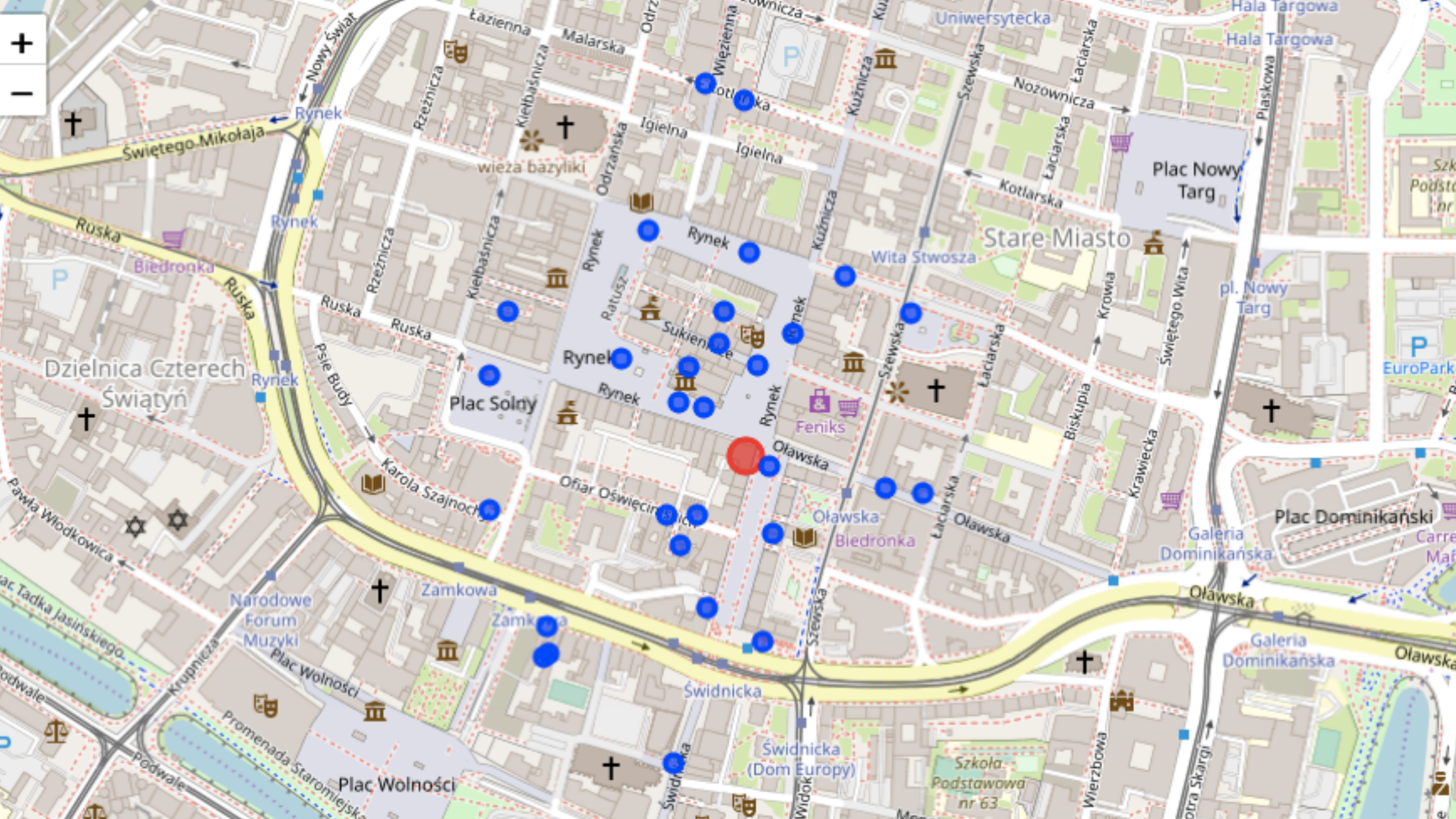
- First we've got coordinates for the **Market Square in Wroclaw**, searching for Japanese restaurants. We've got the closest venues and their ratings. We've identified the restaurant with higher ratings and get a foursquare user tips. We've been able to get insights about users and their details.
 - For Wroclaw there are 30 interesting spots around Szajnochy 11 restaurant, which got the best ratings on Market Square. The location was chosen because is central to Business service companies. The first visualization is shown in the next slide.
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Results

Descriptive Statistics

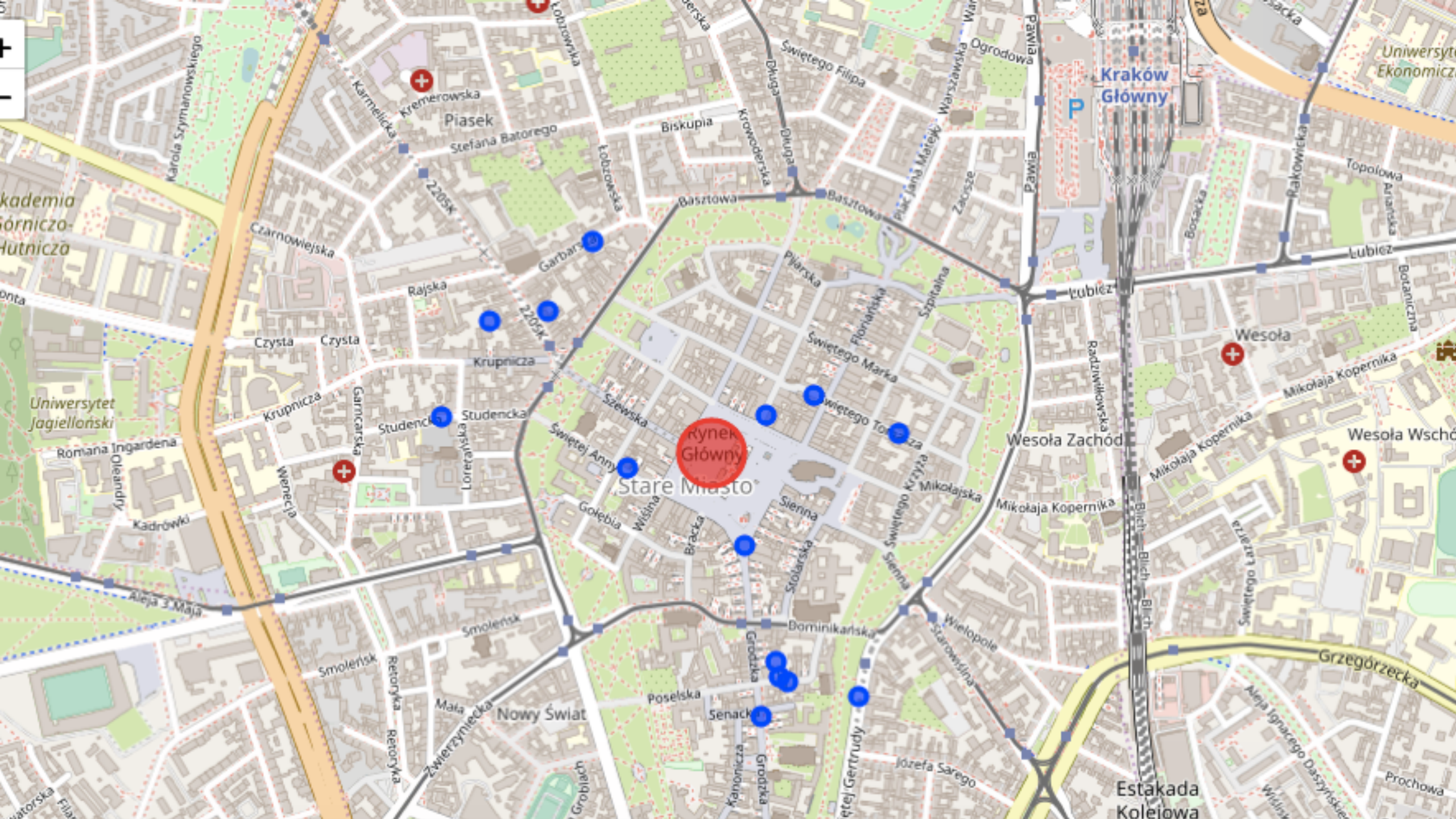
- I have started exploring the closest venues and concentrate in the one with highest rates, “Szajnochy 11”. That had 15 tips on Foursquare, after filtering the tips I’ve searched for a Foursquare user which had more than 300 tips on Foursquare. We’ve been able to obtain details from that user and check his friends.
 - The next thing to do was to get the latitude and longitude for that location, which generate a map in Wrocław with more than 30 trendy venues. I’ve generate a new map, which is shown in the next slide.
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Results

Descriptive Statistics

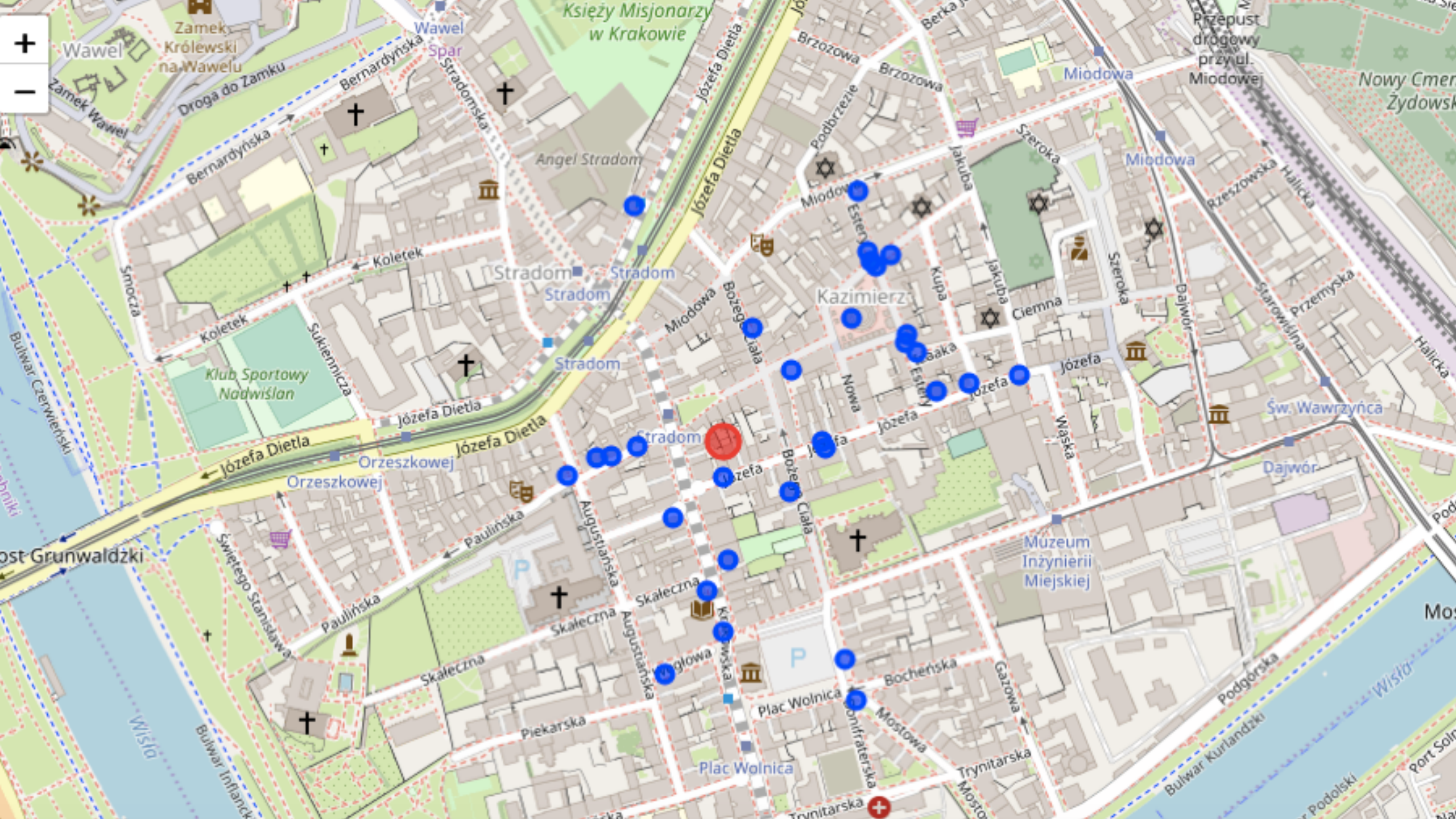
- After we've got coordinates for the **Market Square in Kraków**, searching for Japanese restaurants. We've got the closest venues and their ratings. We've identified the restaurant with higher ratings and get a foursquare user tips. We've been able to get insights about users and their details.
 - For Kraków there are 30 interesting spots around Youmiko Sushi restaurant, which got the best ratings on Market Square. The location was chosen because is central to Business service companies. The first visualization is shown in the next slide.
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Results

Descriptive Statistics

- I have started exploring the closest venues and concentrate in the one with highest rates, Youmiko Sushi . That had 76 tips on Foursquare, after filtering the tips I've searched for a Foursquare user which had only a few tips on Foursquare (which indicates more tips from multiple users). We've been able to obtain details from that user and check her friends.
 - The next thing to do was to get the latitude and longitude for that location, which generate a map in Kraków, with more than 30 trendy venues. I've generate a new map, which is shown in the next slide.
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Discussion

- The research is showing cities which are similar in terms of sushi places, however with a different mix of users. The main tips in one city were coming from foreigners visiting the city with friends from other countries, which is writing a lot of tips during his travels. The other city has a more reserved type of reviewer, which are locals with friends from other countries.
 - In the context of salmon exporters, there's a ripe market in both cities, however having more foreigners increase opportunities for business in other countries. That can be easily explained by the distance of the first city from the borders of Germany and Czech republic, while the second town is geographically isolated. Most likely people eating on that venues were not coming by plane only.
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Conclusion

- In this project I've decided to leverage the Foursquare location data to compare differences between the cities of Wrocław and Kraków. Our target audience are salmon exporters, taking in consideration the cities Wrocław and Kraków which are growing with headcounts for Business services centers.
 - While evaluating venues such as restaurants and obtaining additional information about other venues we have gained insights about which city would represent a better choice for salmon exporters, based on Foursquare ratings. Based in the criteria described in our discussion, our recommendation is to invest in Wrocław.
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