

# Examining Conditions To Open A Specific Restaurant In Hamburg, Germany!

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## 1 Outlining

### 1.1 Introduction to Business Problem

After Berlin Hamburg is the largest city in Germany and largest non-capital city in the European Union with almost 1.9 million inhabitants. It is known for its long rich history dating back more than 1,000 years, famous architecture (e.g. Elbphilharmonie, UNESCO awarded Speicherstadt etc.) and it is famous night life, like the Reeperbahn. Furthermore Hamburg is very diverse. On the one hand there are in comparison poor boroughs with small income and high unemployment rate while some boroughs are extraordinary wealthy. The true potential lies in the density of the city. With 2,453 people per square meter and more than 300,000 commuters every day it has potential customers that their belly wants to be filled on a regular basis. The exciting part for a data scientist is to analyze with Foursquare the ideal location within Hamburg and what kind of cuisine should be offered when the restaurant is opening.

### 1.2 Approach

Next to the cuisine skills all economic options should be considered when opening a restaurant. The lack of information regarding the location, competitors in the neighborhood and appeal of them can be reduced by using the Foursquare API. A similar known approach like New York City and Toronto will be chosen for the destination Hamburg, Germany. After extracting the data for Hamburg from Foursquare an examination will be done as follows:

1. What is a suitable location?
2. What kind of cuisine should be offered?
3. What are necessary informations about the chosen location?

In the end a summary will give a recommendation of a location.

## 2 Data Description

To describe the area of Hamburg a list of the 7 boroughs and 104 neighborhoods has been downloaded<sup>1</sup>. After loading the list into a dataframe and editing it has the following features:

Neighborhood	Borough	Area (square kilometers)	Population	Population Density per Sq.km	Latitude	Longitude
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*Ill. 1: Features of Dataframe df\_hh, see Appendix for full list.*

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<sup>1</sup> Source '[https://de.wikipedia.org/wiki/Liste\\_der\\_Bezirke\\_und\\_Stadtteile\\_Hamburgs](https://de.wikipedia.org/wiki/Liste_der_Bezirke_und_Stadtteile_Hamburgs)'

A map is used to describe the location of neighborhoods:



III. 2 Map of

Hamburg (red dots are neighborhoods)

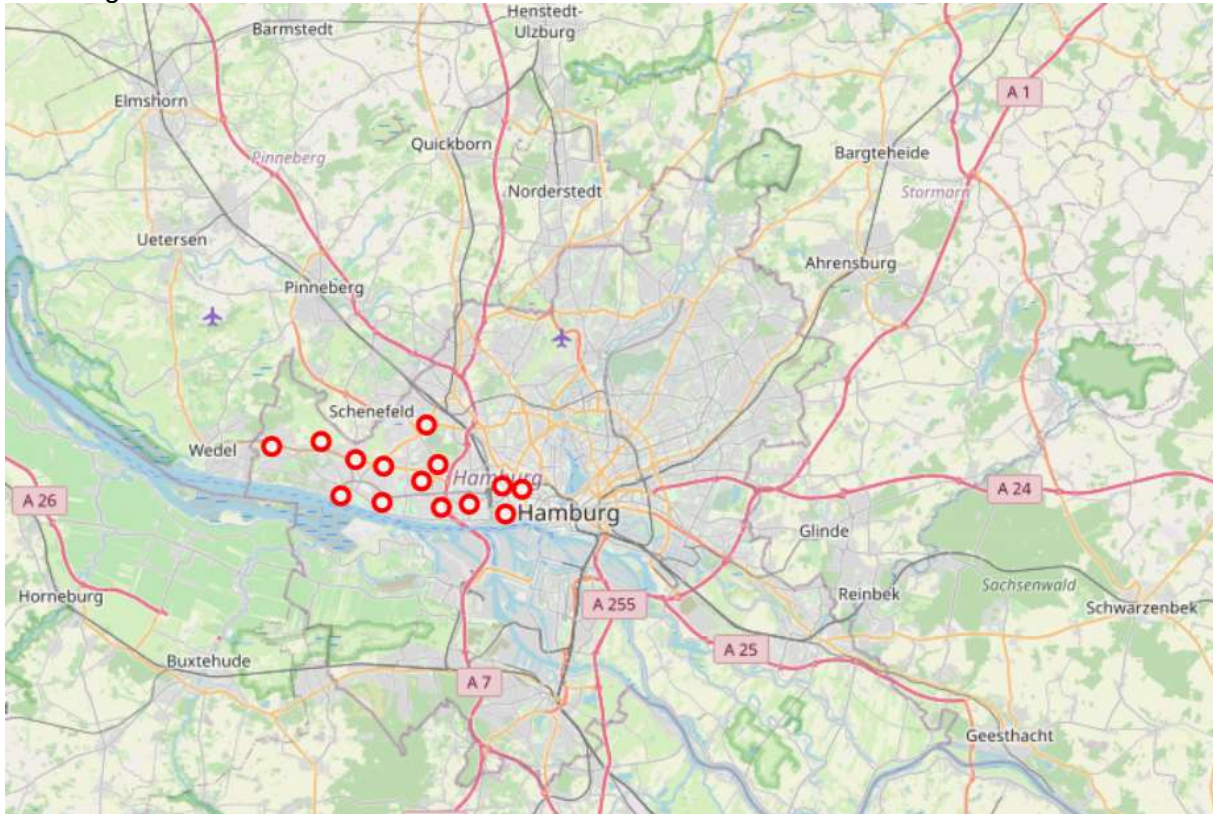
With these features the geographics attitudes of Hamburg can be described. Furthermore another dataframe which is grouped by borough has been built on top of this one:

	Area (square kilometers)	Population	Population Density per Sq.km
Borough			
Hamburg-Nord	57.9	314593	5433.0
Eimsbüttel	49.9	267051	5352.0
Altona	77.9	275264	3534.0
Wandsbek	147.7	441012	2986.0
Hamburg-Mitte	144.8	295411	2040.0
Harburg	124.8	169426	1358.0
Bergedorf	154.7	130290	842.0

III. 3: df\_HH\_boroughs with features Population and Pop. Density per Sq.km

### 3 Data Analyzing

Firstly a borough which will be analyzed should be chosen. A good criteria is to show the density of a borough ist he Population Density per Squarekilometer as shown in Illustration 2. It is shown that Altona is the third most dense borough. It happens that Altona is also very centered while Hamburg-Nord and Eimsbüttel are more in the north located:



III. 4 Location of Altonas neighborhoods

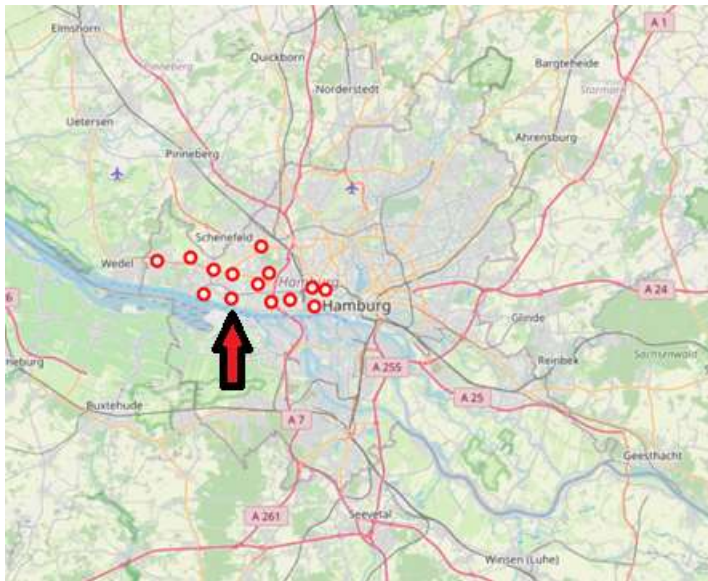
The next step is to analyze which of the neighborhoods would be a suitable restaurant location. To determine this firstly the Top 10 venues will be shown:

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0 Altona-Altstadt	Gym / Fitness Center	Italian Restaurant	Pub	Hotel	Tapas Restaurant	Cocktail Bar	Clothing Store	Furniture / Home Store	Drugstore	Sports Club
1 Altona-Nord	Bakery	Brewery	Bus Stop	Hotel	French Restaurant	Furniture / Home Store	Shipping Store	Plaza	German Restaurant	Playground
2 Bahrenfeld	Italian Restaurant	Gym / Fitness Center	Restaurant	Bus Stop	Sandwich Place	Asian Restaurant	Event Space	Hotel	Pet Store	Record Shop
3 Blankenese	Café	Seafood Restaurant	Ice Cream Shop	Pier	Supermarket	Tapas Restaurant	Harbor / Marina	Tea Room	Hotel	Plaza
4 Groß Flottbek	Supermarket	Hotel	German Restaurant	Restaurant	Café	Grocery Store	Pharmacy	Farmers Market	Bakery	Park
5 Iserbrook	Hotel	Bakery	Bank	Organic Grocery	Pet Store	Supermarket	Wine Shop	Park	Rental Car Location	Record Shop
6 Lurup	Supermarket	Playground	Bus Stop	Paper / Office Supplies Store	Rental Car Location	Record Shop	Pub	Plaza	Pizza Place	Pier
7 Nienstedten	Wine Bar	Garden	Bakery	Ice Cream Shop	Hotel	Flower Shop	Grocery Store	Pharmacy	Park	Record Shop
8 Osdorf	Bank	Wine Shop	Chinese Restaurant	Supermarket	Pet Store	Liquor Store	Ice Cream Shop	Drugstore	Indie Movie Theater	Beach Bar
9 Othmarschen	Bus Stop	German Restaurant	Wine Shop	Paper / Office Supplies Store	Rental Car Location	Record Shop	Pub	Plaza	Playground	Pizza Place
10 Ottensen	Ice Cream Shop	Restaurant	Dessert Shop	Bus Stop	Spanish Restaurant	Grocery Store	Soccer Field	Taverna	Playground	Bakery
11 Rissen	Supermarket	Ice Cream Shop	Drugstore	Indian Restaurant	Bakery	Light Rail Station	Pharmacy	Park	Paper / Office Supplies Store	Record Shop
12 Sternschanze	Bar	Café	Coffee Shop	Clothing Store	Restaurant	Gastropub	Falafel Restaurant	Wine Shop	Optical Shop	Pizza Place
13 Sülldorf	Rental Car Location	Farm	Organic Grocery	Wine Shop	Park	Record Shop	Pub	Plaza	Playground	Pizza Place

III. 5 Top 10 Venues in Neighborhoods of Altona

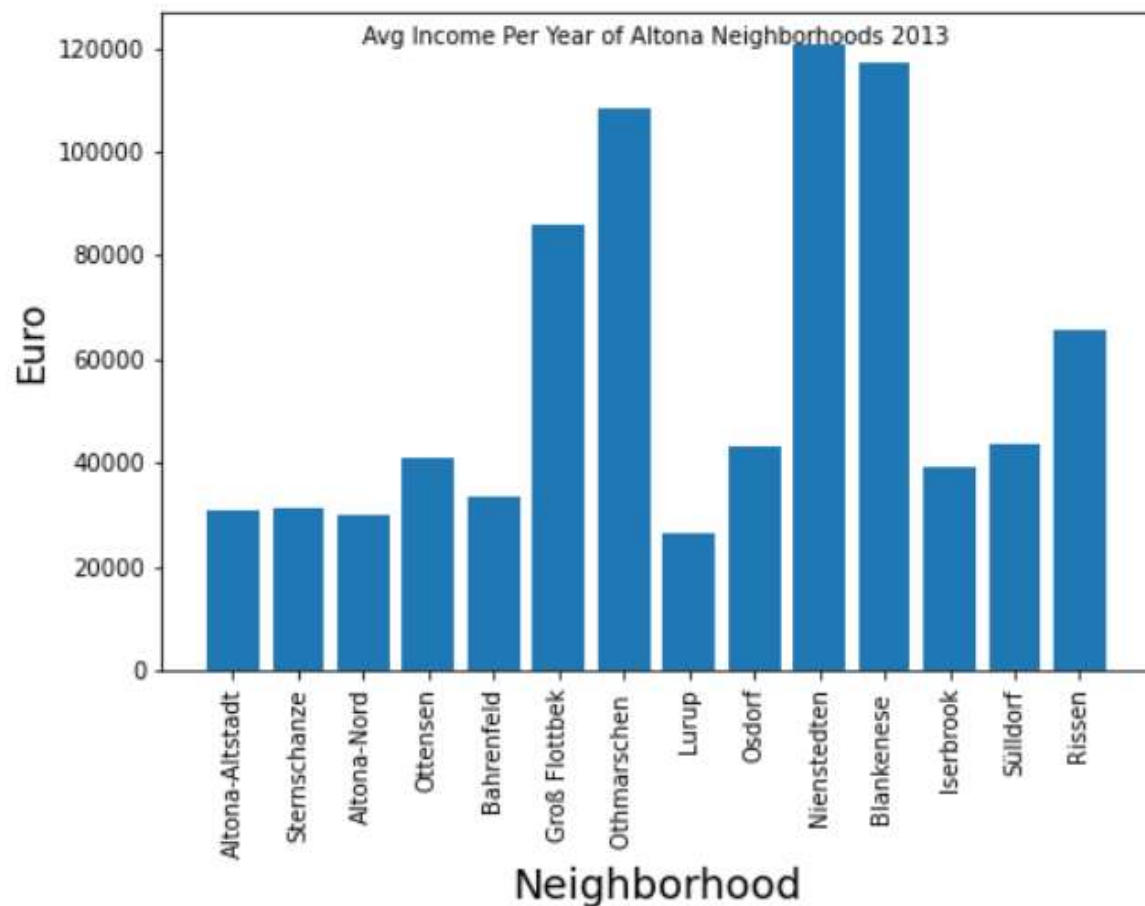


Nienstedten (No. 7) seems ideally because there is no restaurant indicated in the top 10 indicated. Now to locate Nienstedten on the map:



III. 6 Location Nienstedten on Hamburg Map

Nienstedten is also rather central and has the river Elbe as tourist attraction nearby. The wealth of the inhabitants of the neighborhoods also may matter:



III. 7 Average Income per Year 2013 in Neighborhood

Nienstedtens inhabitants are seeming to be extraordinary wealthy.

## **4 Conclusion & Outlook**

A restaurant can be opened in Nienstedten Hamburg. Arguments that this could be advised are that it's borough Altona is rather centered, has wealthy inhabitants and lacks of really good restaurant according to Foursquare Top 10 venues. The cuisine style does not matter in this stage because there are no top 10 restaurants at all listed as venues.

If any interested is given the next steps would be to Get more information about the neighborhood Nienstedten. For example, what is the rent for space of a restaurant, what are the inhabitants demands and wishes, since they are wealthy, are there any excellent restaurants in nearby neighborhoods etc.