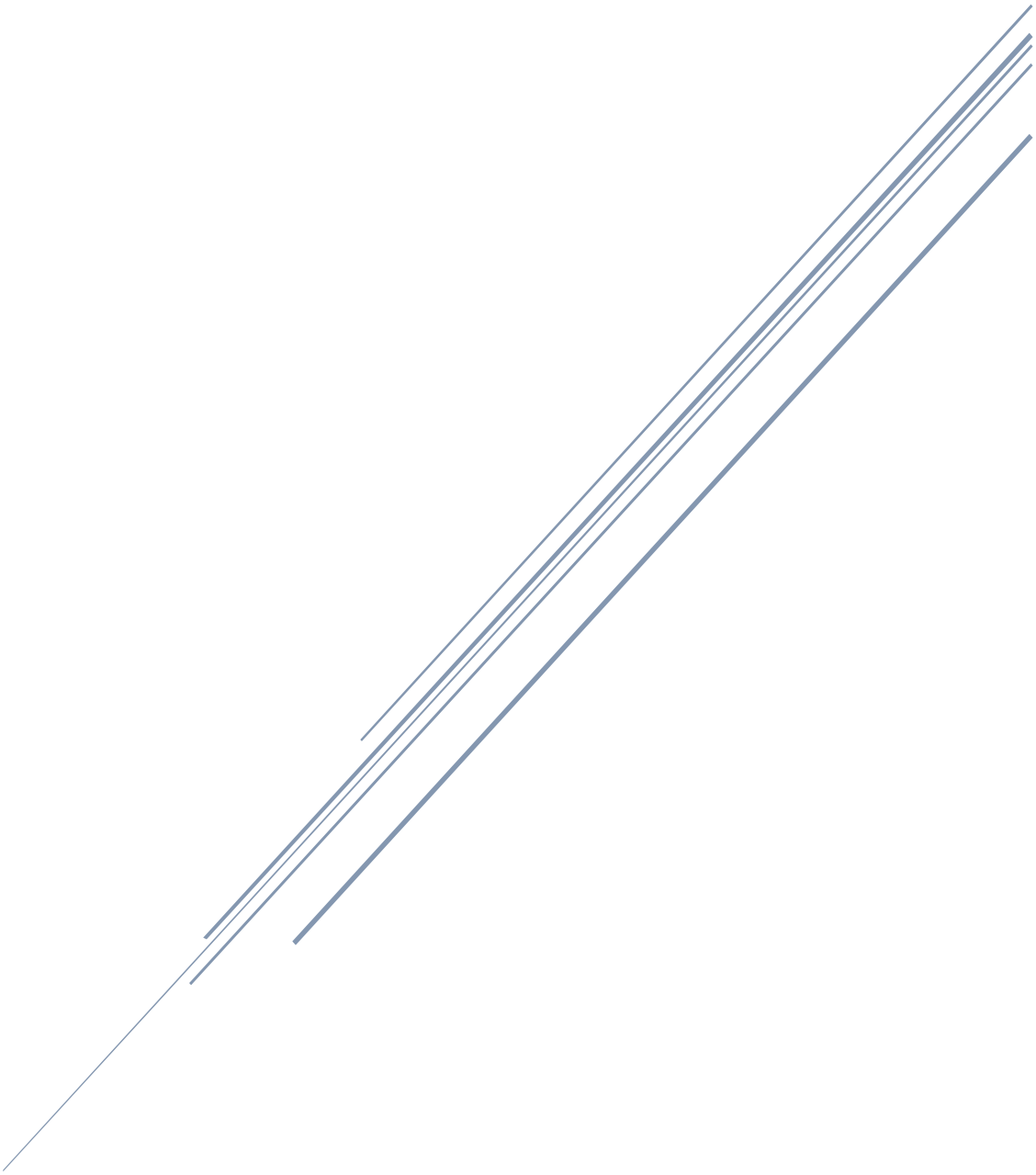
Peer-graded Assignment: Battle of Neighbourhoods – Final Report

Potential Analysis - Germany



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1.Introduction

1.1. Disclaimer

All details are given without guarantee.

All information mentioned here has been prepared for the course: "Capstone Project - The Battle of Neighborhoods" and does not serve the purpose of business use. Likewise, it is not a recommendation which is hereby pronounced.

1.2. Background

Currently there is no possibility to have all data in one place, so it is not visible and has to be evaluated again and again. Pytohn offers the possibility to evaluate the data based on the libraries.

1.3. Problem

A person who on the one hand works in a large company or can be a private individual needs to make a decision, where a new store is opened, usually comprehensive location information. This information can be information about the population in a city, the GDP per person or how many coffee's there are already in a city. On the basis of this information, as a person of a company not operating in Germany, you can get an overview of which areas within Germany have the potential to open a business.

In addition to the advantages mentioned above, this chart can also be used to illustrate real estate investment decisions.

1.4. Interest

The interests are to learn, as an outsider, how the German economy is organised. This is pointed out by the GDP per head. Furthermore it is represented by the Foursqare API how many Caffees are within the city centre. In combination of these two data, it can be balanced which city is suitable for the opening of a coffee bar.

2.Data acquisition and cleaning

2.1. Data sources

The project is based on various publicly available data.

This includes information from Wikipedia:

https://de.wikipedia.org/wiki/Liste_der_Gro%C3%9Fst%C3%A4dte_in_Deutschland

https://de.wikipedia.org/wiki/Liste_der_deutschen_St%C3%A4dte_nach_Bruttoinlandsprodukt

Furthermore, information was extracted from the Foursqare API.

2.2. Data cleaning

	City	Inhabitants_2018	Area km²(2016)	Inahb./km²(2018)	Region
0	Berlin	3.644.826	89168	4.088	Berlin
1	Hamburg	1.841.179	75522	2.438	Hamburg
2	München	1.471.508	31070	4.736	Bayern
3	Köln	1.085.664	40502	2.681	Nordrhein-Westfalen
4	Frankfurt am Main	753.056	24831	3.033	Hessen

	City	Bruttoinlandsproduktin Mio. €	Bruttoinlandsproduktpro Kopf in €
0	Berlin	130.537	36.798
1	Hamburg	112.959	62.793
2	München	109.571	75.186
3	Frankfurt am Main	66.917	91.099
4	Köln	63.463	59.407

	City	Inhabitants_2018	Area km²(2016)	Inahb./km²(2018)	Region	GDP in MIO	GDP per capita	Avearage GDP per capita (Region)
0	Berlin	3.644.826	89168	4.088	Berlin	130.537	36.798	40.568
1	Hamburg	1.841.179	75522	2.438	Hamburg	112.959	62.793	65.603
2	München	1.471.508	31070	4.736	Bayern	109.571	75.186	47.946
3	Nürnberg	518.365	18638	2.781	Bayern	28.130	55.071	47.946
4	Augsburg	295.135	14684	2.010	Bayern	14.060	48.824	47.946

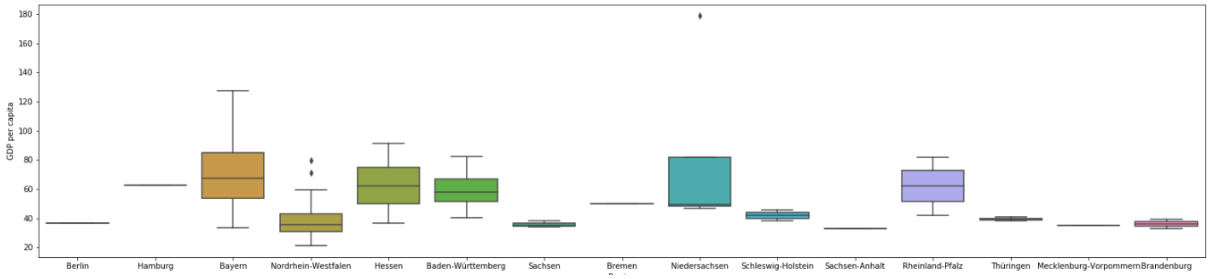
	City	Inhabitants_2018	Area km²(2016)	Inahb./km²(2018)	Region	GDP in MIO	GDP per capita	Avearage GDP per capita (Region)	Latitude	Longitude
0	Berlin	3.644.826	89168	4.088	Berlin	130.537	36.798	40.568	52.517037	13.388860
1	Hamburg	1.841.179	75522	2.438	Hamburg	112.959	62.793	65.603	53.550341	10.000654
2	München	1.471.508	31070	4.736	Bayern	109.571	75.186	47.946	48.137108	11.575382
3	Nürnberg	518.365	18638	2.781	Bayern	28.130	55.071	47.946	49.453872	11.077298
4	Augsburg	295.135	14684	2.010	Bayern	14.060	48.824	47.946	48.366804	10.898697

	name	categories	address	city	distance	lat	lng	state

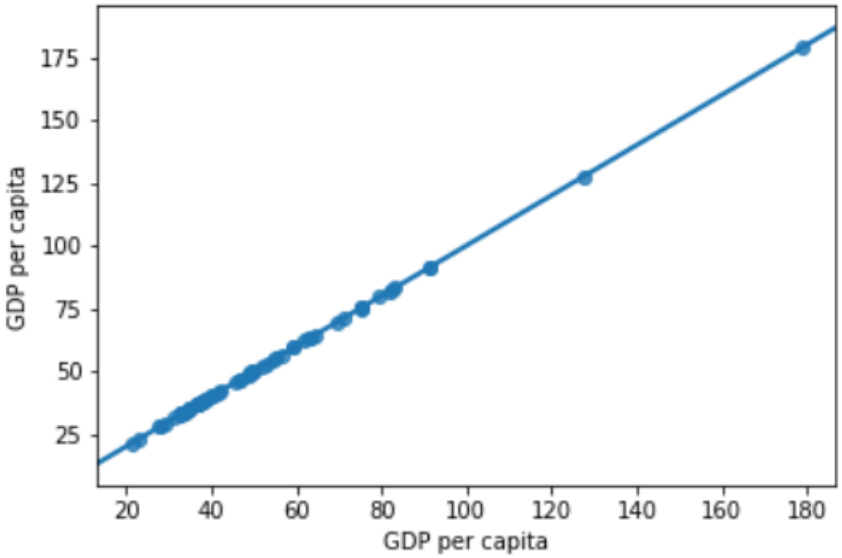
2.3. Feature selection

3.Exploratory Data Analysis

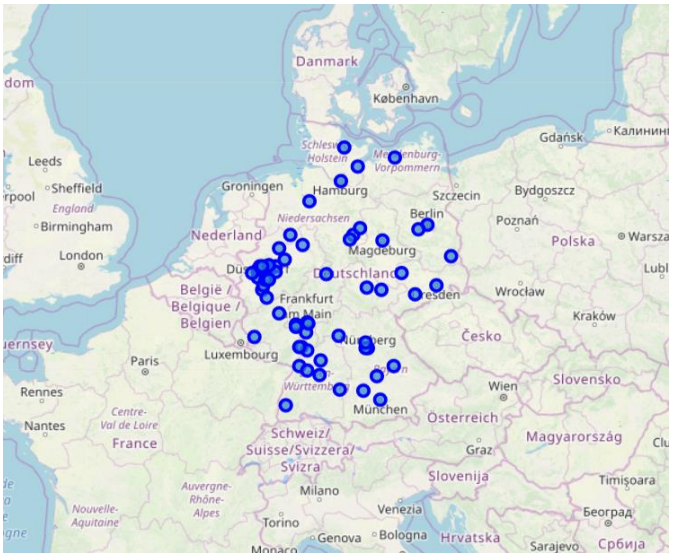
3.1. Calculation of target variable

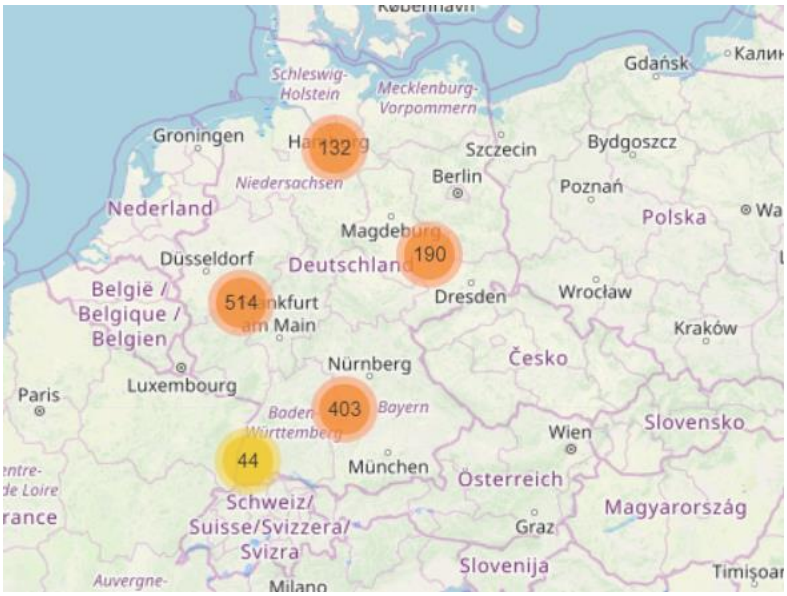


3.2. Relationship between improvement and age



3.3. Relationship between improvement and overall ability





4.Predictive Modeling

5.Conclusions

6.Future directions