Capstone Project - The Battle of Neighborhoods

1) Introduction

1.1) Background

Since I will soon be moving to Berlin to start a new Job (as a Data scientist of course) I find myself wondering in which Neighborhood I would preferably live in. So far I am offered two apartments in two different Neighborhoods. In order to choose an apartment, I would like to know which Neighborhood offers more leisure activities and food preferences that suit my taste.

1.2) Problem

Location Data may help me to compare two Neighborhoods and decide me were to move. In the following report I will compare the Kreuzberg and Charlottenburg.
In detail, I want to find out which of the two flats has more

- Organic grocery stores
- Vietnamese Restaurants
- Theaters

within walking distance of two kilometers of each apartment.

2) Data

2.1) Data acquisition

In order to tackle my Problem and thus to compare the two locations I use the data from foursquare, an independent location data and location technology platform. The location data provided by foursquare can be accessed by the foursquare API. Please use on the link below for more information: https://developer.foursquare.com/places
The data set provides one with knowledge about location all over the world. And has a comprehensive data on venues.

Furthermore, I needed the latitude and longitude of the two Neighborhoods, Kreuzberg and Charlottenburg,I want to compare. From www.findlatitudeandlongitude.com I obtained the following coordinates for the two apartments:

Apartment / Neighborhood	Latitude	Longitude
Apartment 1 in Kreuzberg	52.498604	13.391799
Apatment 2 in Charlottenburg	52.511055	13.301506

Table 1: Coordinates of the potential Apartments in Kreuzberg and Charlottenburg

2.2) Data cleaning

To use the data mentioned above, no big effort was necessary since the data already came in the right form.

To obtain and use the foursquare data, I simply had to connected to the foursquare API.

In order to use the coordinate data, I manually created a Pandas Dataframe similar to Table 1.

3) Analysis of the Neighboorhoods

After I obtained and prepared the necessary data, I requested the Top 200 venues within walking distance of each apartment. I defined walking distance to be two kilometers.

I then created a data frame for each of the two neighborhoods Kreuzberg and Charlottenburg and filtered by venue category. I thus obtained two data frames witch show the number of each venues category for the two neighborhoods.

Finally, I did some formatting. I dropped and renamed some columns and finally filtered the venues of interest for both areas.

4) Results

In this section I will show the two tables containing the results.

The following Table shows amount of the Venues of interest ‘Organic Grocery Stores’, ‘Vietnamese Restaurants’ and ‘Theaters’ within walking distance of both apartments.

Venue Category	**Count Kreuzberg**	**Count Charlottenburg**
Organic Grocery	NaN	3
Vietnamese Restaurant	2	6
Theater	2	NaN

Table 2: Venues of interest in Kreuzberg and Charlottenburg

5) Discussion

As can be seen easily, There is a trade off between the two Neighborhoods. Both, the Charlottenburg apartmnet as well as the Kreuzberg apartment have Vietnamese Restaurants within

walking distance. Though there is way more choice in Charlottenburg which has 6 vietnamese restaurants than in Kreuzberg which has only two. However, Charlottenburg does not offer any theaters while there are two in Kreuzberg. On the other hand there is no organic Grocery Store within walking distance of the Kreuzberg apartment while there is 3 organic grocery stores within walking distance of the Charlottenburg place.

6) Conclusion

The question at hand, which apartment offers more leisure activities and food preferences that suit my taste within walking distance of two kilometers is can not be easily answered since there is a trade-off between the possibility to visit Theaters and the possibility of going to an organic Grocery Store.