

# The Battle of Neighborhoods in Yangzhou\_Week1

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## **1.0 Introduction**

### **1.1 Background**

Yangzhou is a prefecture-level city in central of Jiangsu Province in China. It possesses unique geographical advantage of natural resources for its position sitting on the north bank of the Yangtze River. At present, the population of Yangzhou has reached over 4 million with higher percentage of the young generation feature ages between 18 and 40 as there exists many educational institutions and college centers locating in it, attracting even more students come to Yangzhou for future career. In addition, Yangzhou is a city with relatively slow pace, compared other cities at a similar level. Therefore, restaurants are quite prevalent among people living in this city and drinks like coffee are also become more popular.

### **1.2 Business problem**

College students coming from national regions bring energy to this city and new business opportunities. For example, many foreigners choose to open restaurants at streets around Yangzhou University and along historical attractions. Of course, some of them have tried to open a coffee as that type of shop provides relaxing space for students in line with the pace of frequent work and studies. However, many cases proving the failure for those coffees opening within noisy malls or on daily busy roads. To overcome that problem, this study would focus on Luckin's location strategy in Yangzhou and those of existing coffee shop competitors, considering their stable profits and distribution of business activities over this city and other neighborhoods.

## 2.0 Data Description

To cope with this problem of location selection, these factors will be considered:

- 1.number of existing restaurants in the neighborhood
- 2.type of surrounding entertainments (attractive factors to target and potential customers)
- 3.commercial clusters identification
- 4.location of city center and relevant traffics distributed in subareas

We decide to use regularly spaced grid of locations, centered around city center, to define our neighborhoods. The data sources are shown as following:

- 1.get Yangzhou geometry information from CYBPO (<https://postal-codes.cybo.com/china/yangzhou/>),in which website the geometry data sets provided
- 2.get the detailed information in each circle by applying Foursquare API
- 3.calculate geometry information, under specific conditions (e.g., about 3 km from city center, and each has 600 meters each circle apart)(here mostly for screening appropriate geographic postion, including city center, commercial clusters, and finally, opportunities)

	PostalCode	Borough	Neighborhood	Latitude	Longitude
2	211400	Yizheng	Yangtzu Garden	32.2754	119.1779
3	211405	Yizheng	Yangtzu Garden	32.3408	119.2415
4	211423	Yizheng	Yangtzu Garden,Yizheng market	32.3842	119.2895
5	211900	Yizheng	Yizheng market	32.2826	119.1471
6	211931	Yizheng	Renmen garden,Yizheng market	32.2968	119.1047
7	225000	Yangzhou	Yangzhou University	32.3825	119.4102
8	225001	Guangling	Shouxi Lake	32.3945	119.4368
9	225002	Guangling	Yangzhou University	32.3982	119.4286
10	225003	Guangling	Dongguan Street	32.3897	119.4619
11	225004	Guangling	Guangling campus	32.3645	119.4701

## 3.0 Methodology

We create the dataframe and load data from Yangzhou geometry platform, and then, we plot local map to identify the city center and determine where we could make further explorations by Foursquare. And the result has been shown below:



Next, we explore the venues of boroughs. There are five distinct districts in Yangzhou city and by creating venues groups, the surrounding conditions also become cleared. So, the target groups could be clustered through features like surrounding entertainment types for further determination.

3	Shouxi Lake	32.3945	119.4368	Starbucks (星巴克)	32.393923	119.433171	Coffee Shop
4	Shouxi Lake	32.3945	119.4368	Starbucks (星巴克)	32.396130	119.432859	Coffee Shop
5	Shouxi Lake	32.3945	119.4368	WuTing Teahouse - 五亭迎春茶社	32.393282	119.435813	Jiangsu Restaurant
6	Shouxi Lake	32.3945	119.4368	Yechun Teahouse (冶春茶社)	32.396262	119.437189	Dim Sum Restaurant
7	Yangzhou University	32.3982	119.4286	McDonald's (麦当劳)	32.397288	119.428544	Fast Food Restaurant
8	Yangzhou University	32.3982	119.4286	Starbucks (星巴克)	32.396130	119.432859	Coffee Shop
9	Yangzhou University	32.3982	119.4286	文昌阁	32.396305	119.428296	Historic Site
10	Yangzhou University	32.3982	119.4286	KFC (肯德基)	32.402125	119.426613	Fast Food Restaurant
11	Yangzhou University	32.3982	119.4286	四望亭	32.399364	119.428172	Historic Site

For frequency analysis, we could determine the potential attractiveness of these locations to target customers and figure out what on earth are they interested in, based on 'neighborhood' and venue categories.

	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
0	Dongguan Street	Hotel	Park	Fast Food Restaurant	Buffet	Café	Chinese Restaurant
1	Ge Garden,Dongguan Street	Motel	Jiangsu Restaurant	Huaiyang Restaurant	Hotpot Restaurant	Hotel	Park
2	Sea Park	Café	Multiplex	Fast Food Restaurant	Park	Buffet	Chinese Restaurant
3	Shouxi Lake	Coffee Shop	Jiangsu Restaurant	Dim Sum Restaurant	Park	Fast Food Restaurant	Buffet
4	Shouxi Lake,Yangzhou University	Park	Coffee Shop	Multiplex	Buffet	Café	Chinese Restaurant

Finally, we do the clustering to group these commercial circles to determine the appropriate place for opening coffee shop. Essentially, five groups are obtained here and directly, we can find Dongguang Street and Shouxi Lake could be most attractive to customers because of ecological environment.



## 4.0 Discussion and results

From above analysis, it could be found that although Dongguan Street located at the city center and closed to commercial circles, but there are two main reasons for us to reject our business site there. First, tea is a popular drink type and more prevalent around Dongguan Street, and it is better to choose places where coffee is more

acceptable to consumers. Second, the competition environment is fierce and surrounding attractions or entertainment places are crowded and may be too noisy. There, it is not a good idea to open coffee shops around Dongguan Street, responding to the existing situation that only few coffee shops survive in Dongguan Street, for example, Starbucks.

However, we had better consider opening coffee shops in Guangling District according to clustering analysis. There are several reasons supporting for that decision. First, Guangling is very close to the largest commercial circle in Yangzhou. Second, the infrastructure of Guangling encourages coffee consumption and longer stay for customer, implying higher possibility of consumptions. Last but not the least, the customers in Guangling is more accustomed to drinking coffee based on higher frequency, compared with other places. Therefore, if we want to choose a appropriate location to open a new restaurant, we choose from the target.