

Capstone Project - The Battle of Neighborhoods (Week 2)

Restaurant guide information for sightseers

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1. Introduction where you discuss the business problem and who would be interested in this project.

National Chi Nan University is a research-intensive university in Pu Li, Taiwan. The university nearly famous attraction “Sun Moon Lake” and a lot of foreign sightseers visiting. Chi Nan University has the beautiful campus and opens to visit the general Public.

The school side hope that more public and foreign sightseers visit campus, but campus have not enough restaurant, sightseers must go to Pu Li town look for restaurant, The school side want to make restaurant guide information for foreign sightseers and want to know restaurant style, address, telephone number on school around, of course, foreign sightseers don't want to eat McDonald's or fast food restaurant, so the school side hope collect Taiwanese cuisine restaurant, Chinese cuisine restaurant and Taiwan tea restaurant information, the information will help sightseers looking for own interested restaurant style and improve visit willingness.

2. describe the data

In the project, I will use Foursquare API to search for venues and make the call to the Foursquare database and in return, I use K-means clustering to do classification restaurant style and distance, the data form:

```
'https://api.foursquare.com/v2/venues/search?client_id={} &client_secret={} &ll={}, {  
&v={} &query={} &radius={} &limit={}'.format(CLIENT_ID, CLIENT_SECRET,  
latitude, longitude, VERSION, ***_query, radius, LIMIT).
```

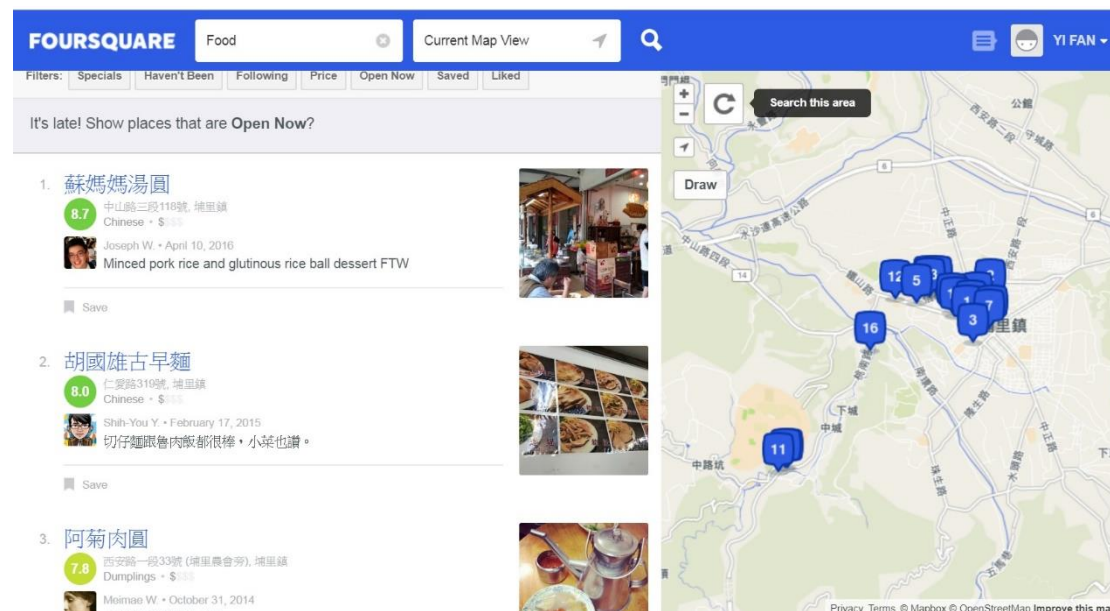
And I must analysis distance for venues, sightseers will understand how many restaurant style, address, telephone number and distance, the school side will can make restaurant guide information for sightseers.

3.Conclusion

First, we see the map center on National chi nan university:



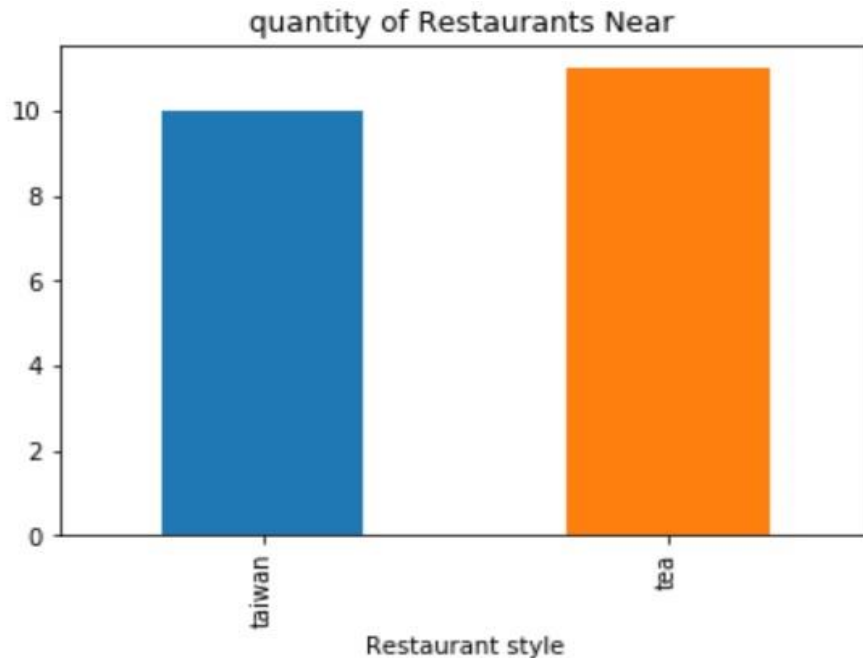
We can see restaurant mark very few, it is unusual, so we open Foursquare website to research pu li restaurant information, the conclusion as follows:



These restaurant name marked not use English, it is use Chinese that a troubled for foreign sightseers, the school side hope have enough restaurant information provide to foreign sightseers, but the conclusion not achieve the school side's claim.

4. What is problem?

We know pu li town is historic spot, why restaurant information so few, even a lot of foreign sightseers visited but have not enough restaurant information in Foursquare database, form analysis conclusion as follows:



Taiwanese cuisine restaurant quantity is 10, Taiwan tea restaurant is 11, and I can't find any Chinese restaurant mark in Chinese key word, we think foreign sightseers may be can't identify difference of Taiwanese cuisine and Chinese cuisine or they do not know how to mark restaurant information in Romanization.

Restaurant quantity and distance as follows:

```
type
taiwan    6607.000000
tea       7858.909091
Name: distance, dtype: float64
```

```
avgDis.plot(kind = 'Bar')
plt.title('quantity of Restaurants Near pu li')
plt.xlabel('Restaurant style')
plt.show()
```

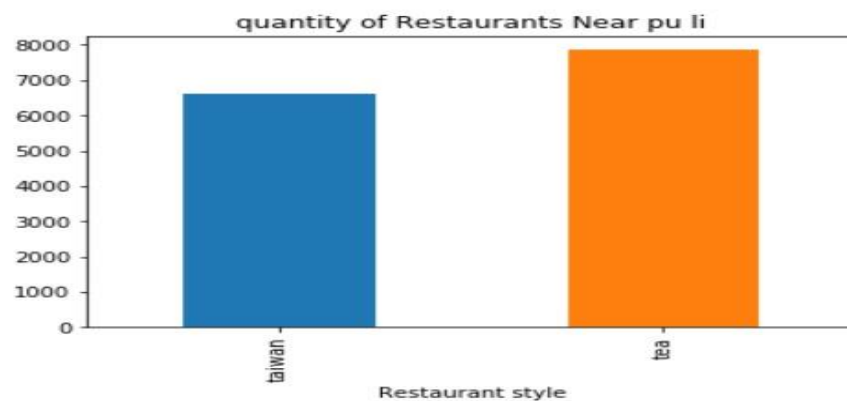


Chart show Taiwan tea restaurant quantity than more Taiwanese cuisine restaurant and distance too far, obviously the school side must collect more restaurant information from different source of information.

5.How to solve the problem.

The school side can help restaurant set up Romanization, it will help provide enough restaurant information, National Chi Nan University is a research-intensive university and have enough ability to do the thing, if the school side hope more foreign sightseers visit campus, enough restaurant information is required, of course contain traffic information that how to go to the school.