

THE BATTLE OF THE NEIGHBORHOODS

НЕ ПАНІ!

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INTRODUCTION

The purpose is to find a second-hand apartment in Yangpu Area that is subject to the following conditions:

1. Apartment with min 2 bedrooms and min 80 square meters with price not to exceed 6,000,000RMB
2. Area with ammenties like subway metro station, supermarket and cinemas within walking distance(<=1.5 km)

A relevant project for a person who wants to find a better place to live and work, since the approach and methodologies used here are applicable in all cases.

DATA

In order to make a good choice of a good apartment in Shanghai, the following data is required:

1. Listed second-hand apartments in Yangpu Area with descriptions (price, location, how many bedrooms, area)
2. Geodata (latitude, longitude) of the second-hand apartments
3. Venues and ammenities in the neighborhoods

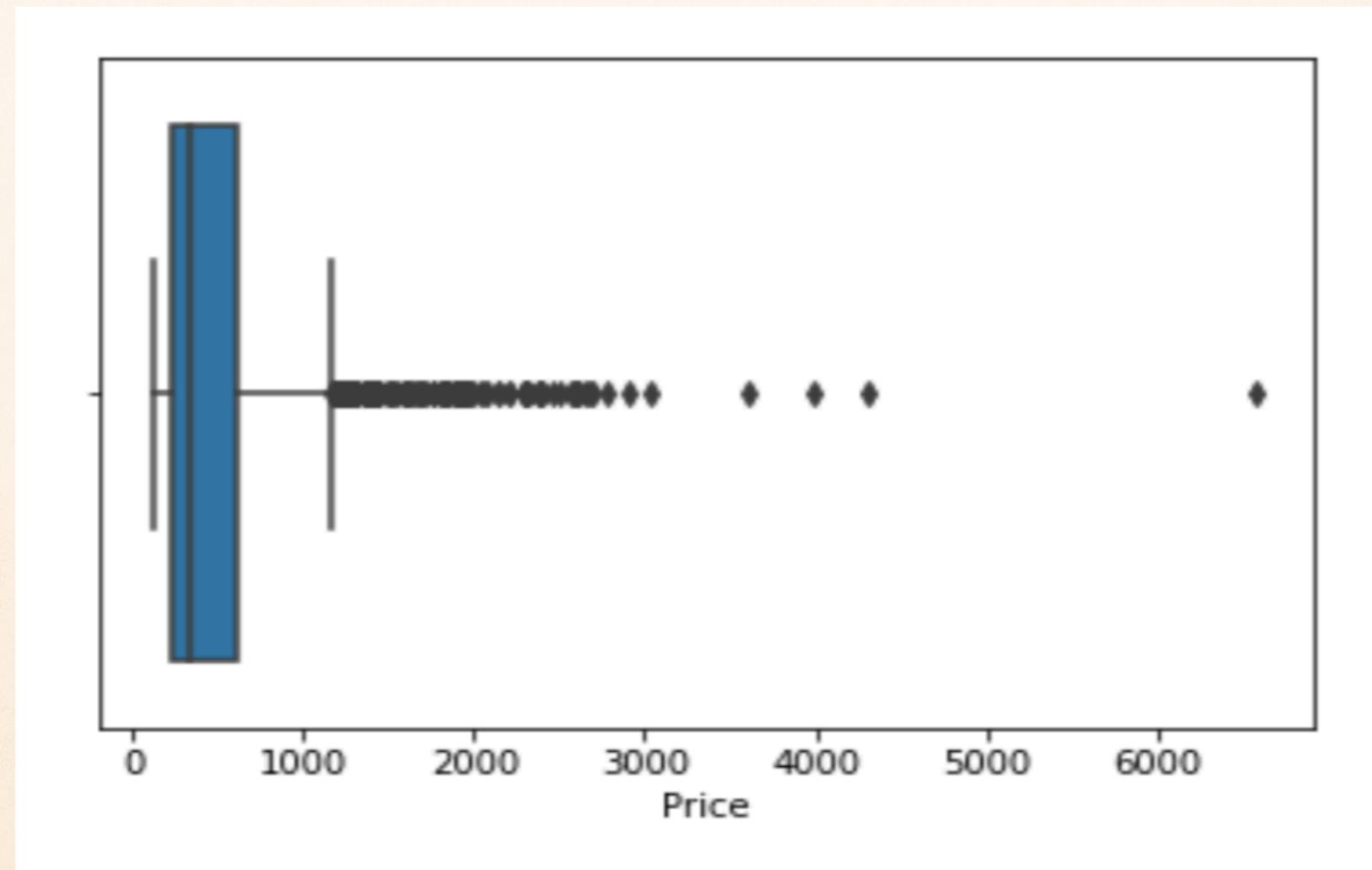
Here are some samples.

	Address	Price	Bedrooms	Area	Longitude	Latitude	metro station	Supermarket	Cinema	Price/m^2
0	阳明新城	558.0	3	89.79	121.527805	31.275399	7	7	5	6.214501
1	阳明新城	575.0	3	89.79	121.527805	31.275399	7	7	5	6.403831
2	阳明新城	568.0	3	89.79	121.527805	31.275399	7	7	5	6.325871
3	文化名园	570.0	3	92.70	121.498061	31.312913	6	9	5	6.148867
4	鞍山四村第二小区	550.0	2	87.90	121.514984	31.283729	10	6	7	6.257110

RESULTS AND DISCUSSION

For all apartments in the area:

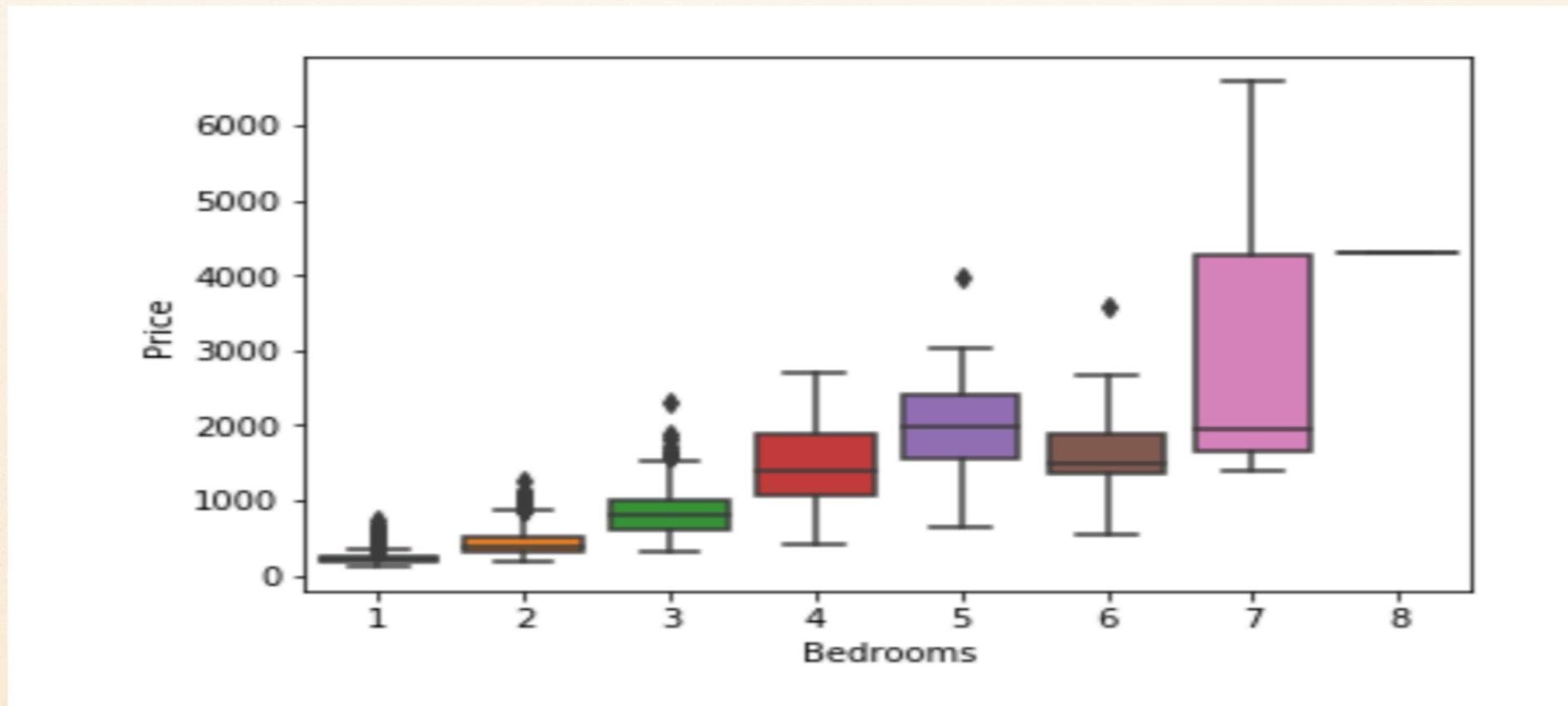
The median is around 3,000,000RMB, 3 quarters are less than 7,500,000RMB;



RESULTS AND DISCUSSION

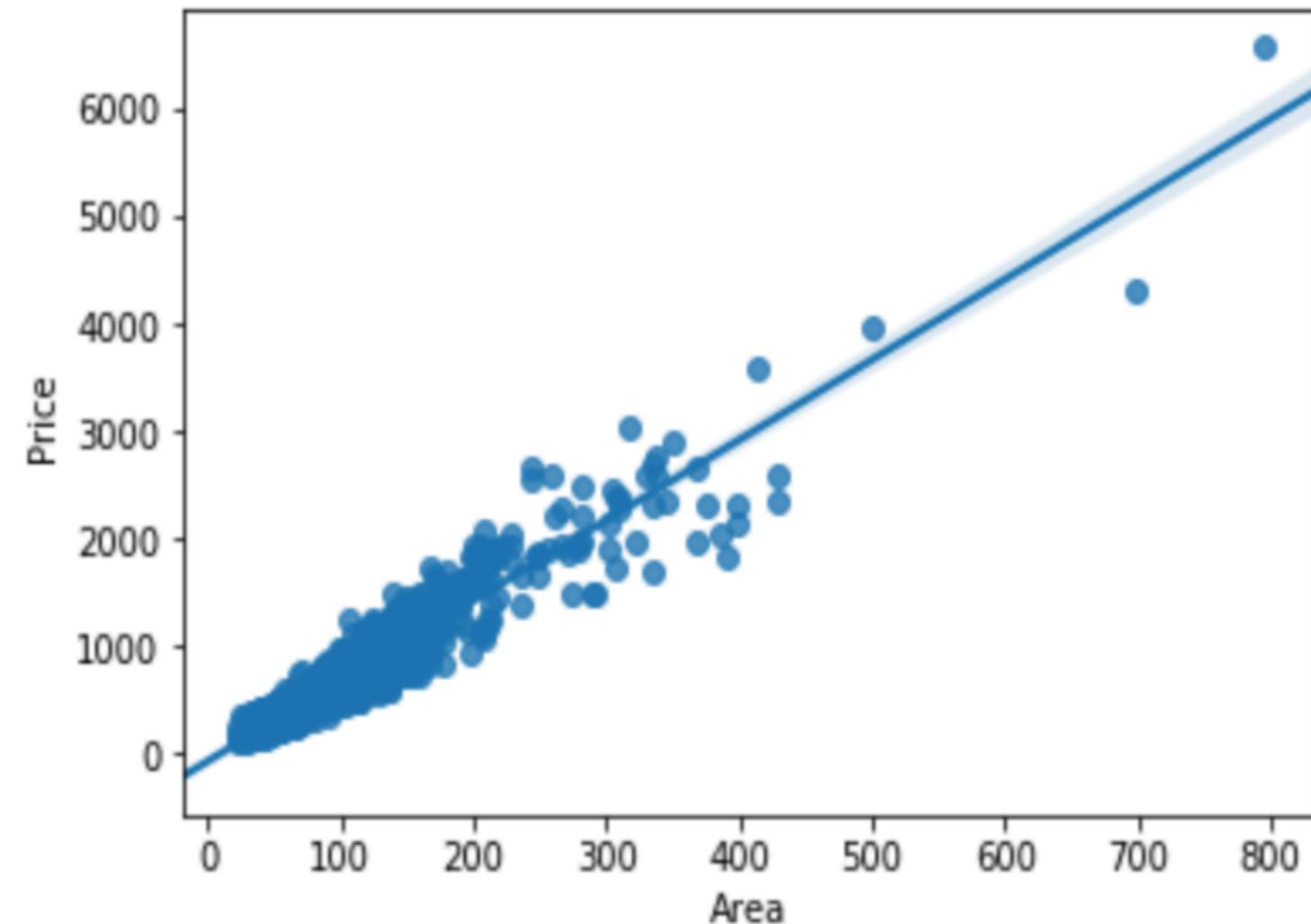
For all apartments in the area:

Price of apartment with 1,2,3 rooms differs obviously while price of apartment with 4,5,6,7 rooms differs slightly. One interesting finding is that apartments with 6 rooms are a little cheaper than those with 5 rooms;



RESULTS AND DISCUSSION

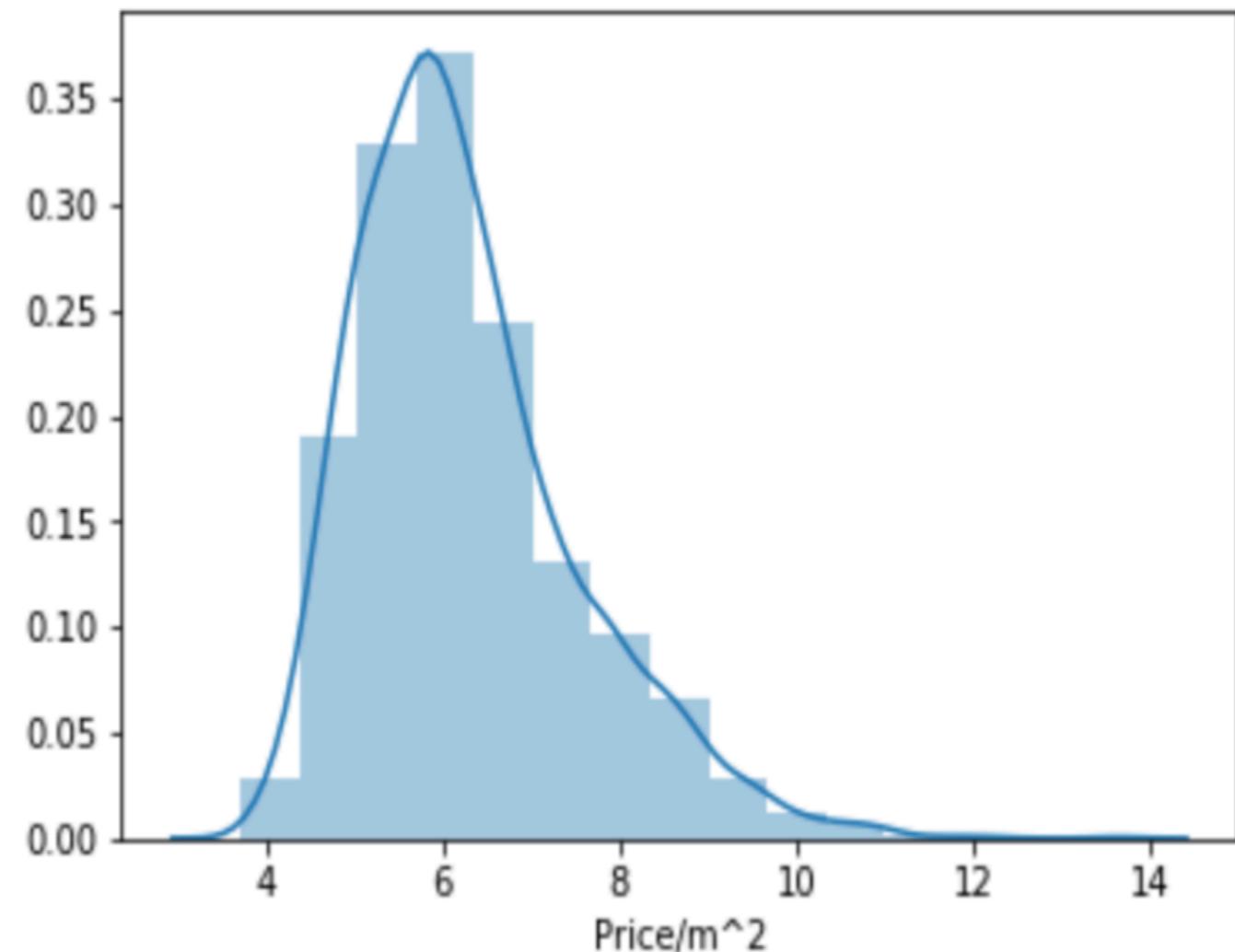
For all apartments in the area:
Price and area are highly correlated;



RESULTS AND DISCUSSION

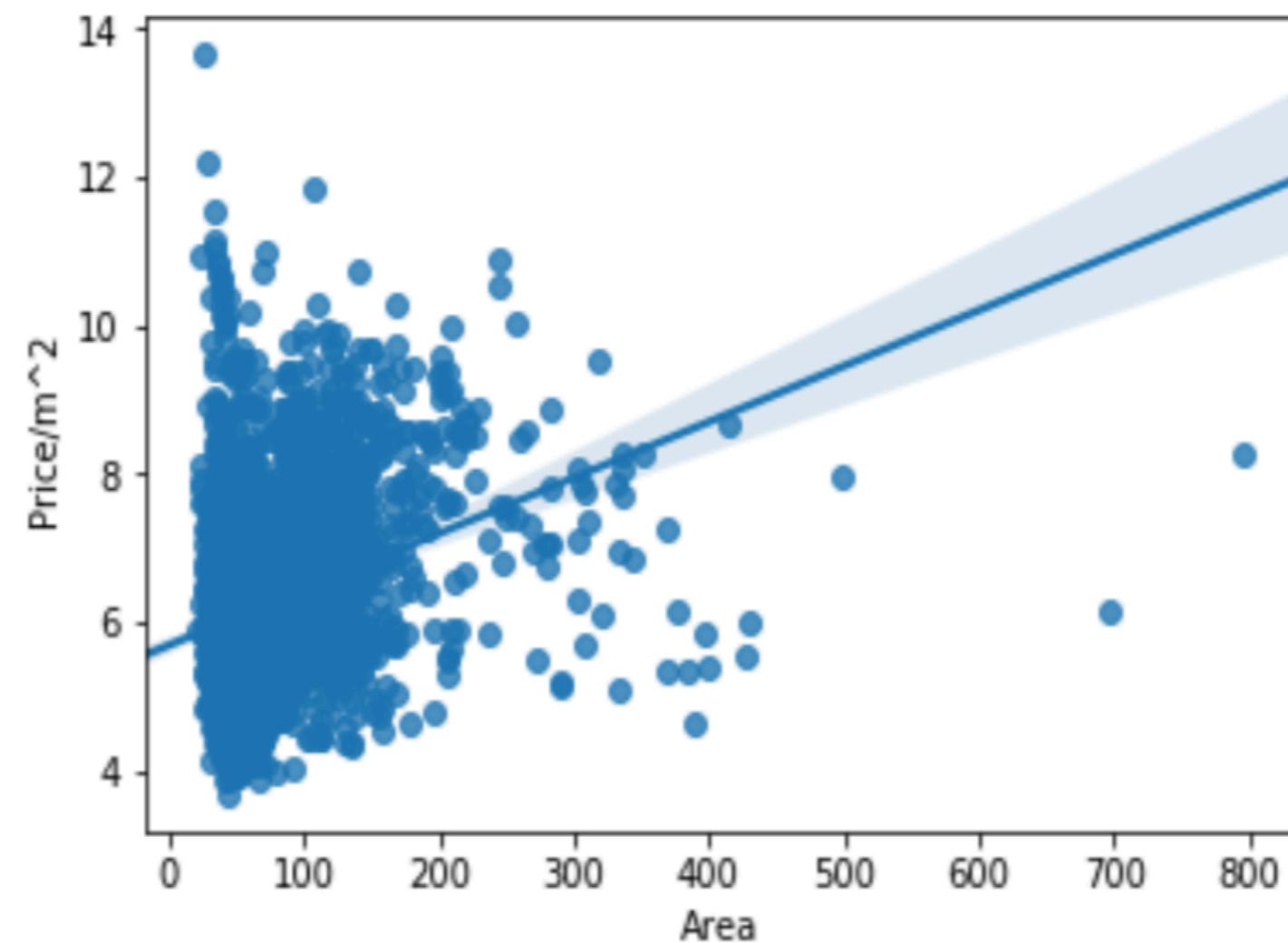
For all apartments in the area:

The most frequent price/m² is 60,000 RMB/m²;



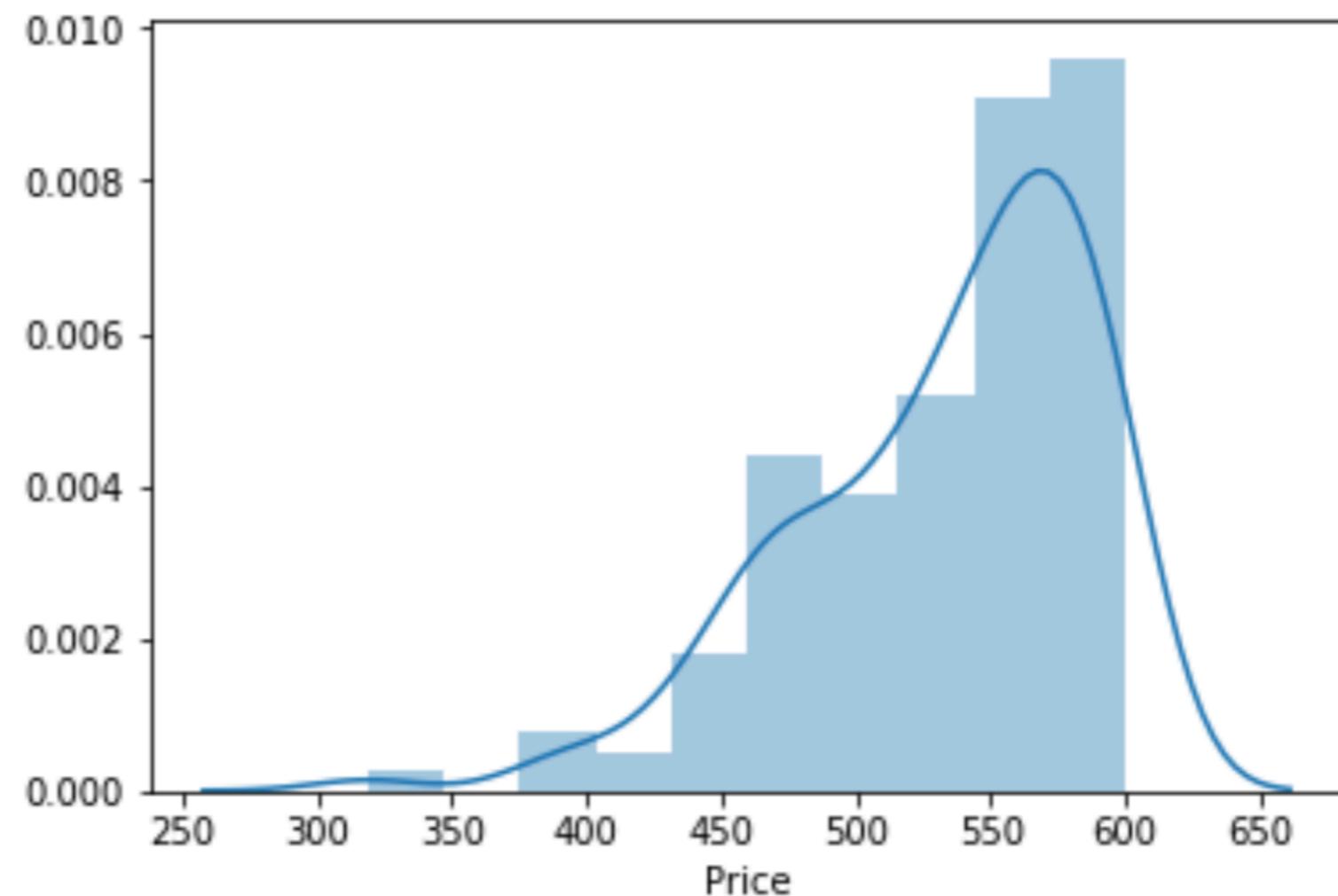
RESULTS AND DISCUSSION

For all apartments in the area:
No correlation between unit price and area;



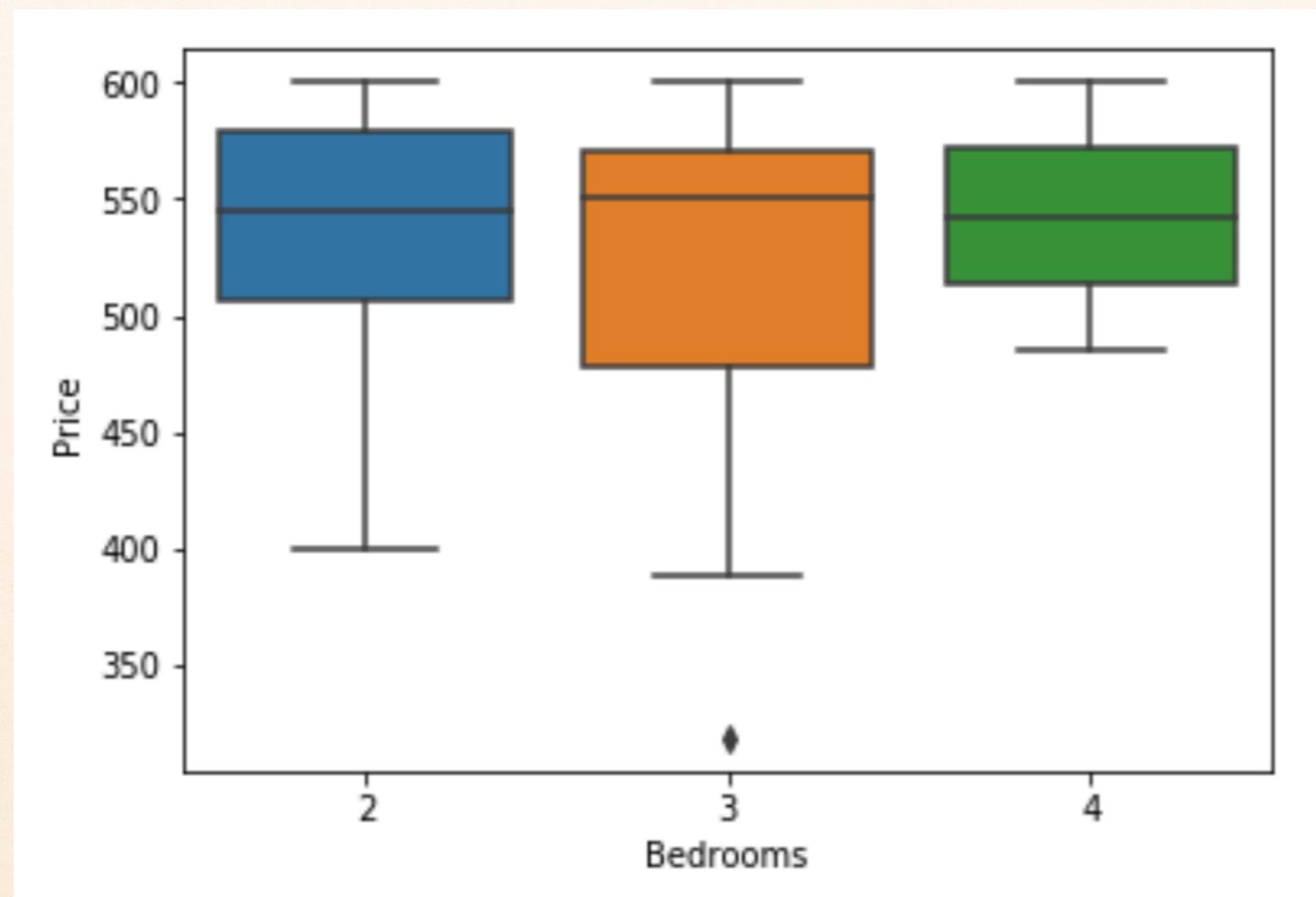
RESULTS AND DISCUSSION

For selected convenient apartments :
Most apartments are around 5,800,000RMB;



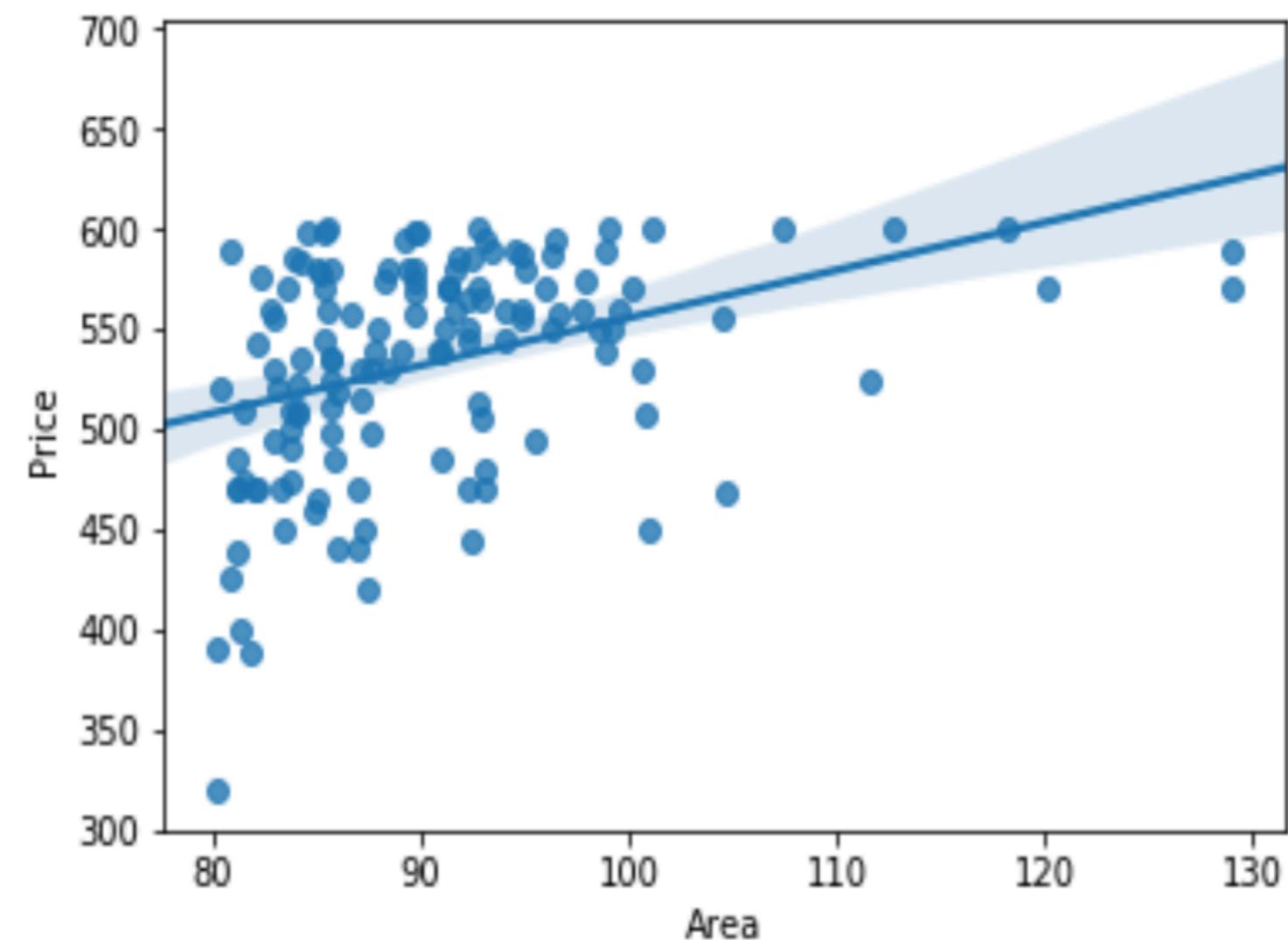
RESULTS AND DISCUSSION

For selected convenient apartments :
Almost no difference between price of apartments with different rooms;



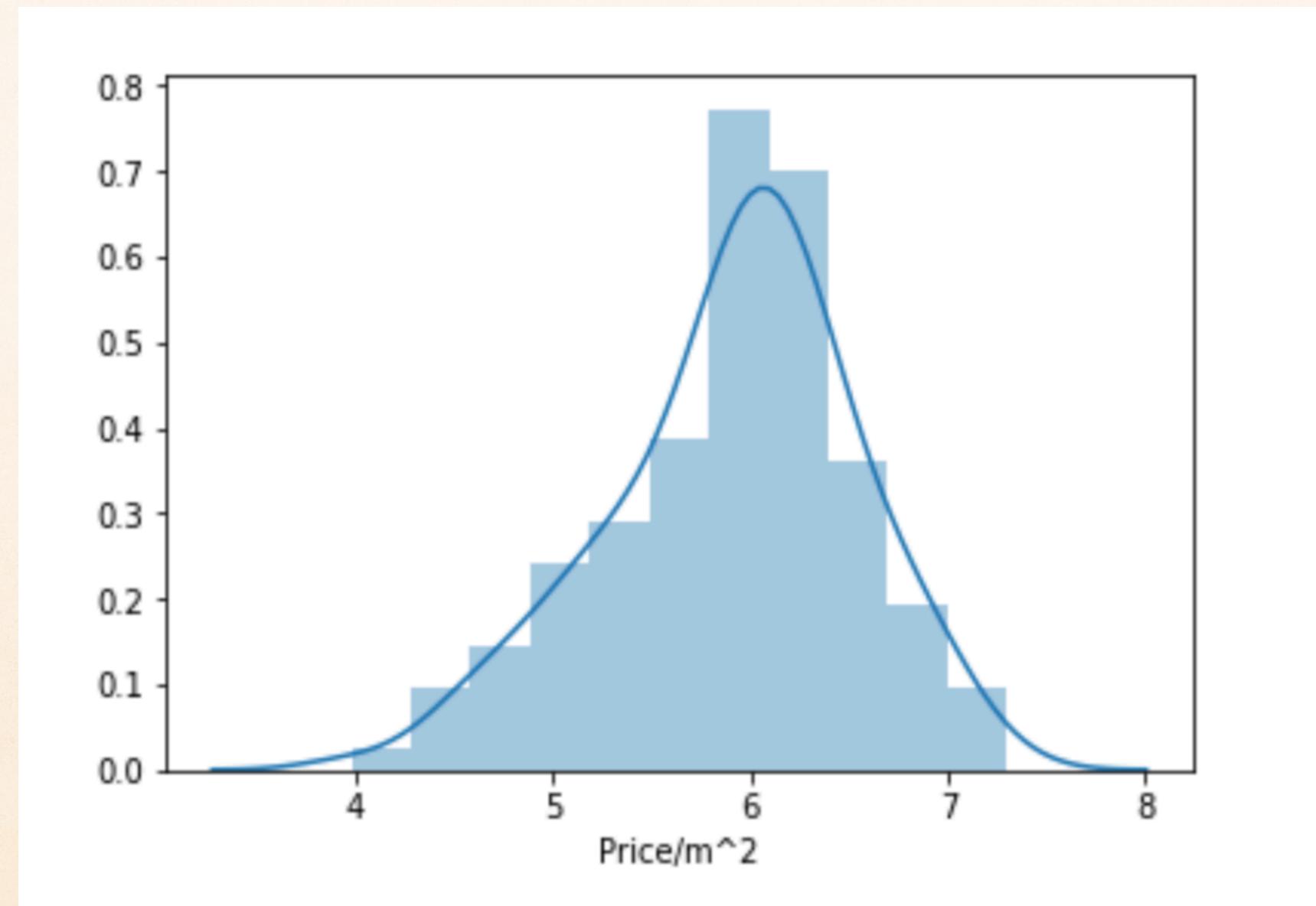
RESULTS AND DISCUSSION

For selected convenient apartments :
Price and area are slightly correlated;



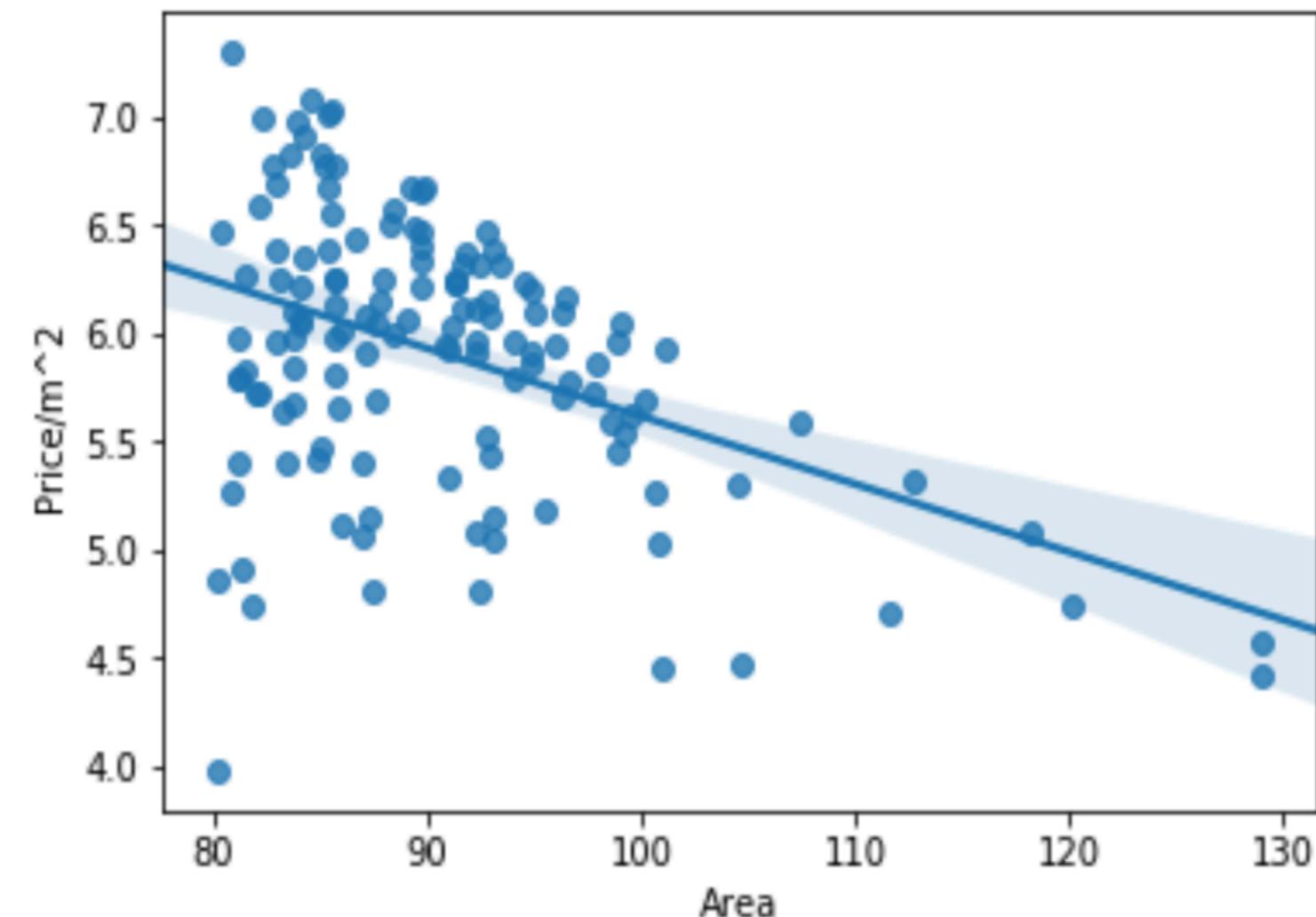
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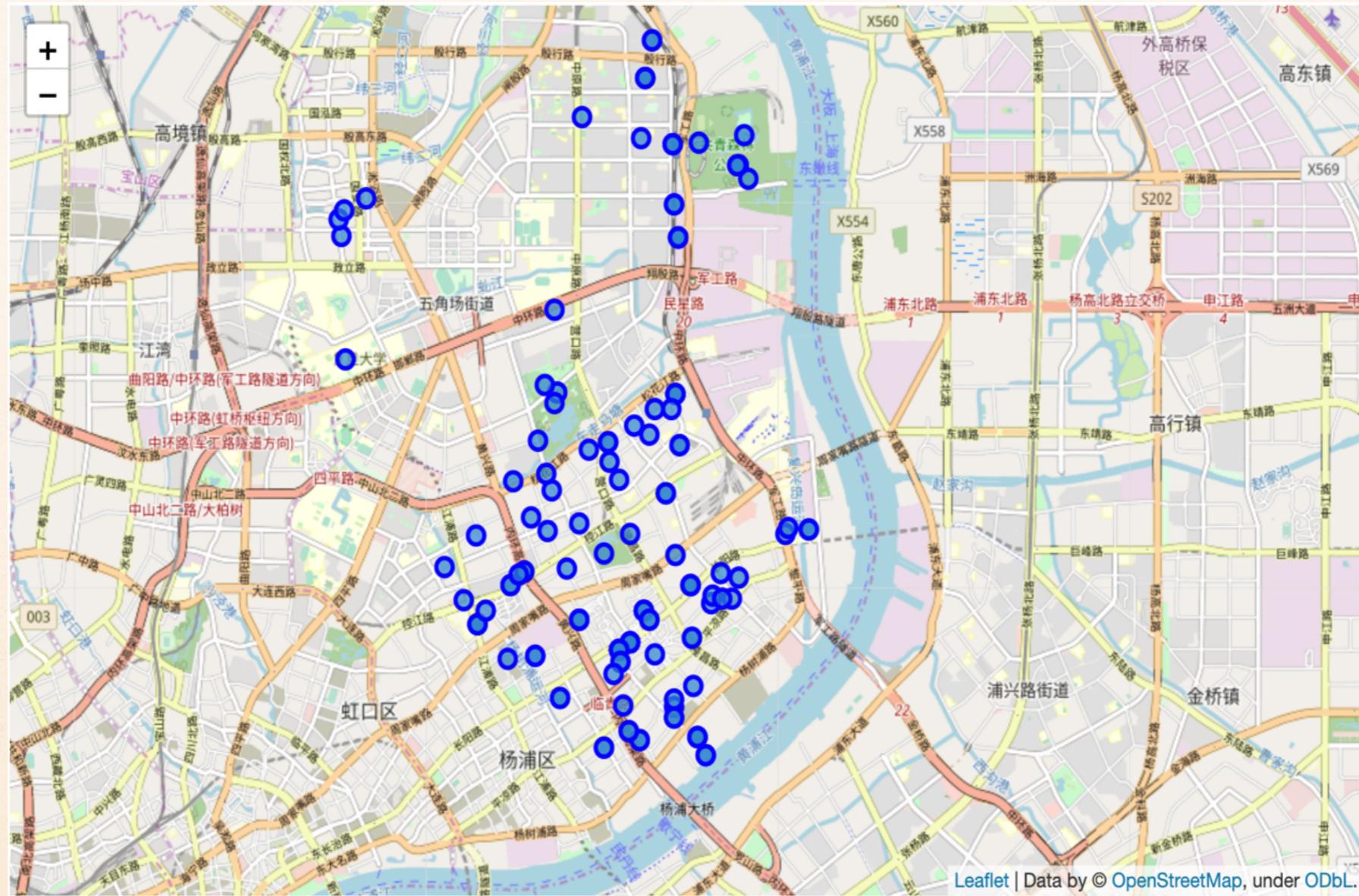
RESULTS AND DISCUSSION

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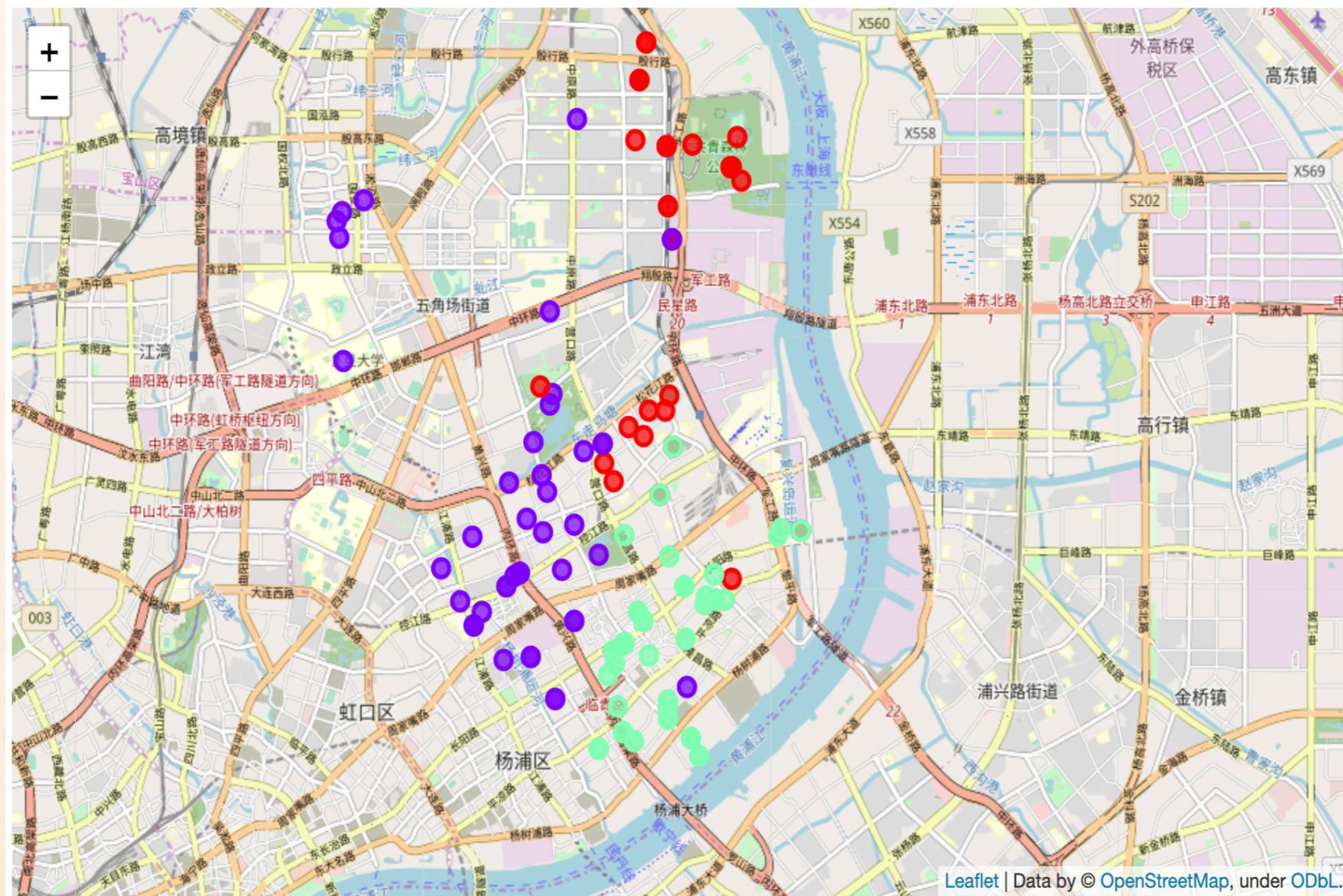
RESULTS AND DISCUSSION

Location of selected convenient apartments:



RESULTS AND DISCUSSION

Clustering of selected convenient apartments:
Cluster0 is red, Cluster1 is purple, Cluster2 is green.



RESULTS AND DISCUSSION

Clustering of selected convenient apartments:

Cluster 0: low price, small area, with fewer metro stations, supermarkets and cinemas, and low unit price.

Cluster 1: high price, large area, with many metro stations, supermarkets and cinemas, and medium unit price.

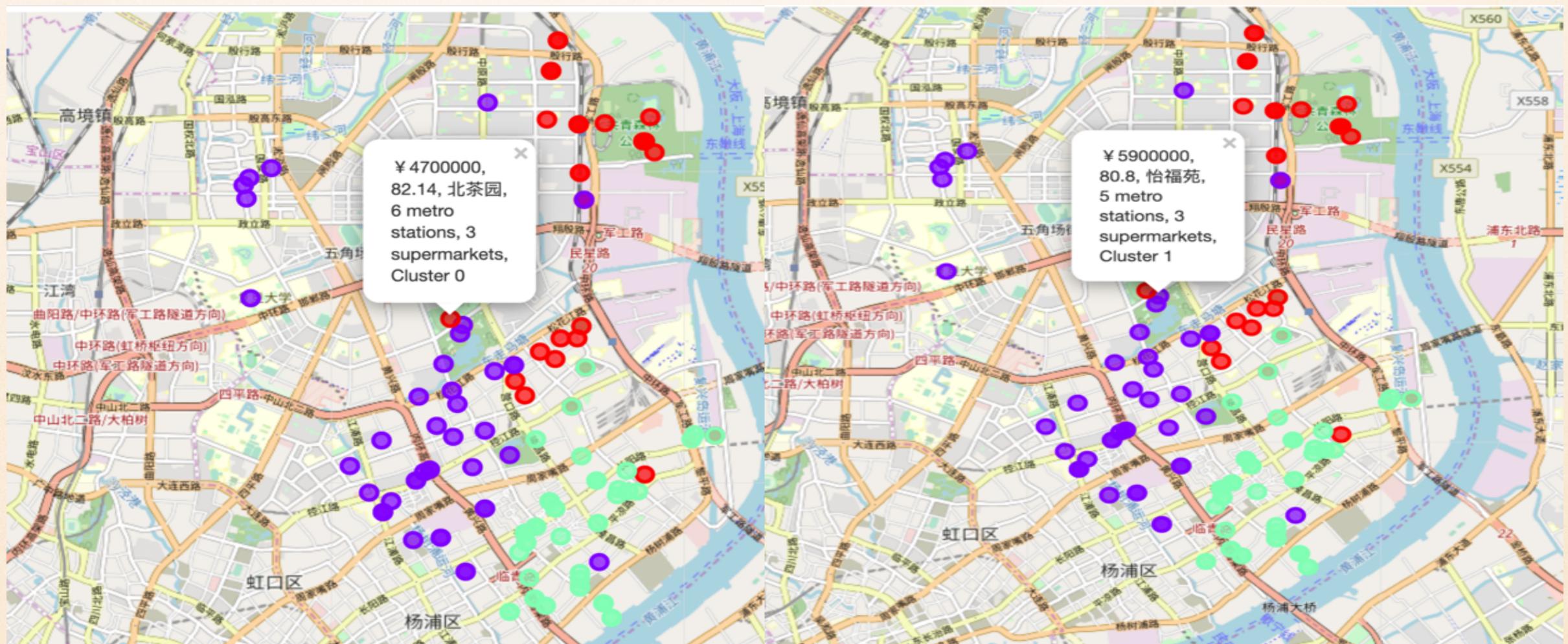
Cluster 2: medium price, medium area, with enough metro stations, supermarkets and cinemas, and high unit price.

Cluster	Price	Bedrooms	Area	Longitude	Latitude	metro station	Supermarket	Cinema	Price/m^2
0	469.735294	2.500000	86.856471	121.539964	31.311409	3.088235	2.676471	2.352941	5.418352
1	567.022727	2.477273	94.818864	121.521307	31.287489	7.181818	5.159091	4.840909	6.050149
2	544.796610	2.169492	89.697627	121.538507	31.273863	5.033898	4.237288	4.237288	6.090598

RESULTS AND DISCUSSION

A cost-efficient apartment:

A red marker means it is cheap (price and unit price). It is close to cluster1, which means it is as convenient as those apartments of Cluster1. As we compare the area, 82.14 m^2 vs 80.8 m^2 . Bravo!



CONCLUSION

we used k-means clustering method to divide them into 3 categories by price, area, location. After that we found features of each cluster as follows: Cluster 0: low price, small area, with fewer metro stations, supermarkets and cinemas, and low unit price. Cluster 1: high price, large area, with many metro stations, supermarkets and cinemas, and medium unit price. Cluster 2: medium price, medium area, with enough metro stations, supermarkets and cinemas, and high unit price.
Finally, we found a **cost efficient** apartment!