

House price*

Yufei Liu

November 30, 2023

1 Introduction

Since the population in China has grown a lot in recent years.

2 Data

2.1 Data description

2.2 Data visualization

3 Model

4 Result

RUNNING TIME

5 Discussion

*Code and data are available at: <https://github.com/Florence-Liu/house-price>

Table 1: Description for variables

Variable	Type	Definition
Total_Price	Continuous	Total house price in yuan
Unit_Price	Continuous	Unit house price in yuan/ m^2
District	Character	District where the house is located
Area	Continuous	Floor area of the house in m^2
Furnished	Character	Decoration status of the house
Bedroom	Discrete	Number of bedrooms
Living_Room	Discrete	Number of living/dining rooms
Total_Floors	Discrete	Total floors of the building
Detailed_Floor	Discrete	Floor level of the house
Facing_South	Dummy	Whether the house is facing south

Table 2: Descriptive statistics about house price in each districts

District	Average total price	Average unit price	Average floor area
Gaochun	87	7429	114
Gulou	423	43679	95
Jiangning	277	23618	114
Jianye	541	43996	115
Lishui	104	9617	106
Liuhe	112	12852	87
Pukou	268	22384	115
Qinhuai	313	35973	85
Qixia	359	29722	113
Xuanwu	319	36517	86
Yuhuatai	317	30537	99

Table 3: Summary of different metrics for test and train data for two models

Model	MAE	RMSE
MIG train	40.9	68.7
MLG test	42.6	73.3
RF train	3.7	14.2
RF test	7.3	30.3

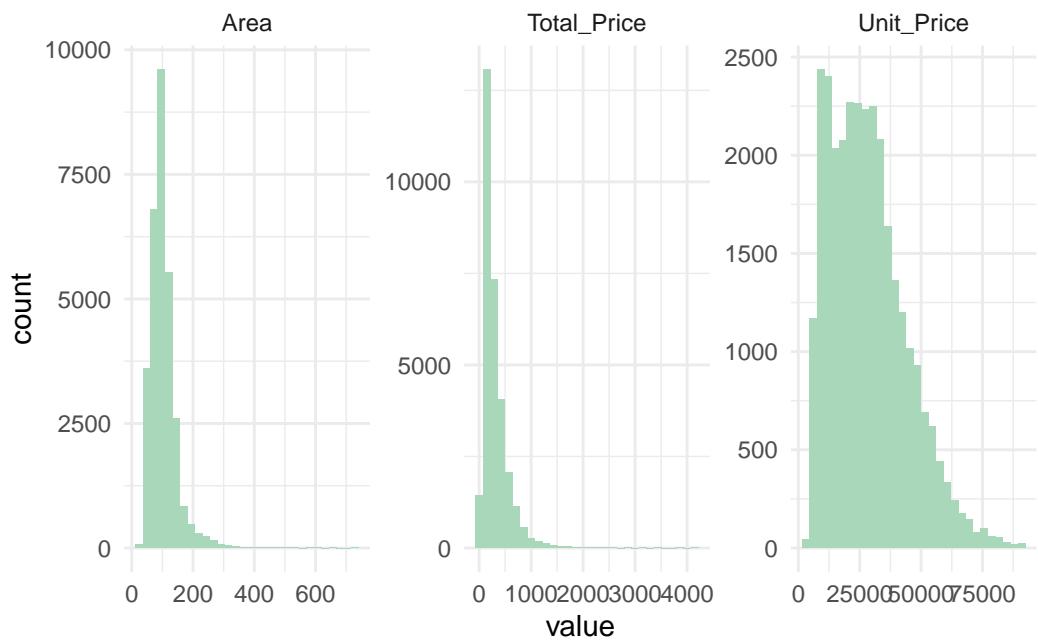


Figure 1: ?(caption)

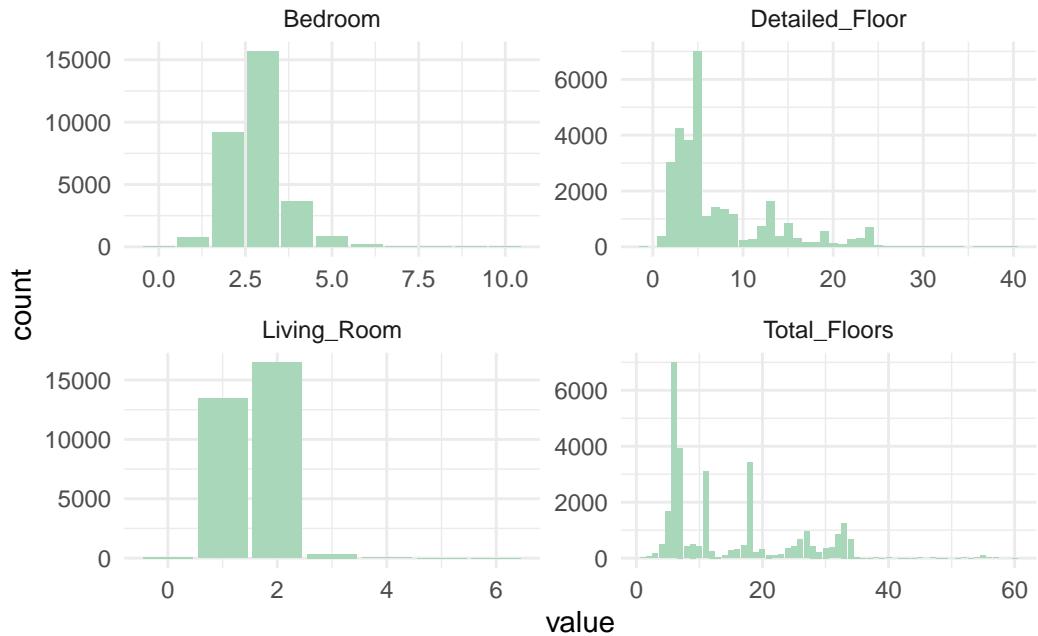


Figure 2: ?(caption)

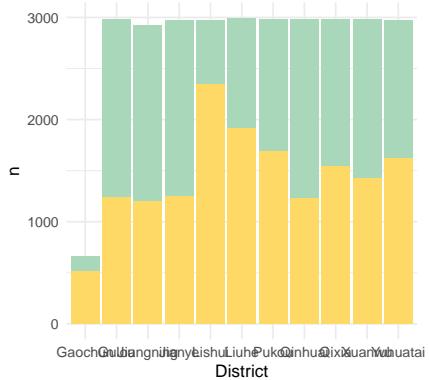


Figure 3: ?(caption)

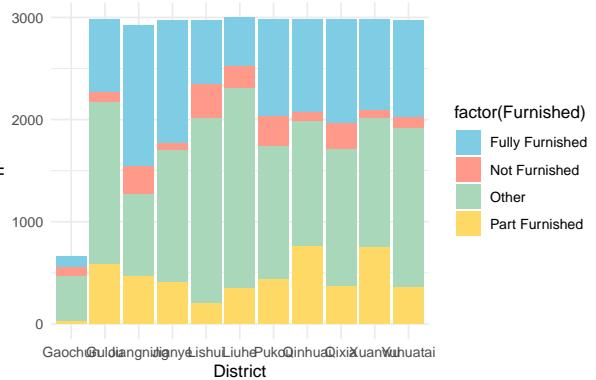


Figure 4: ?(caption)

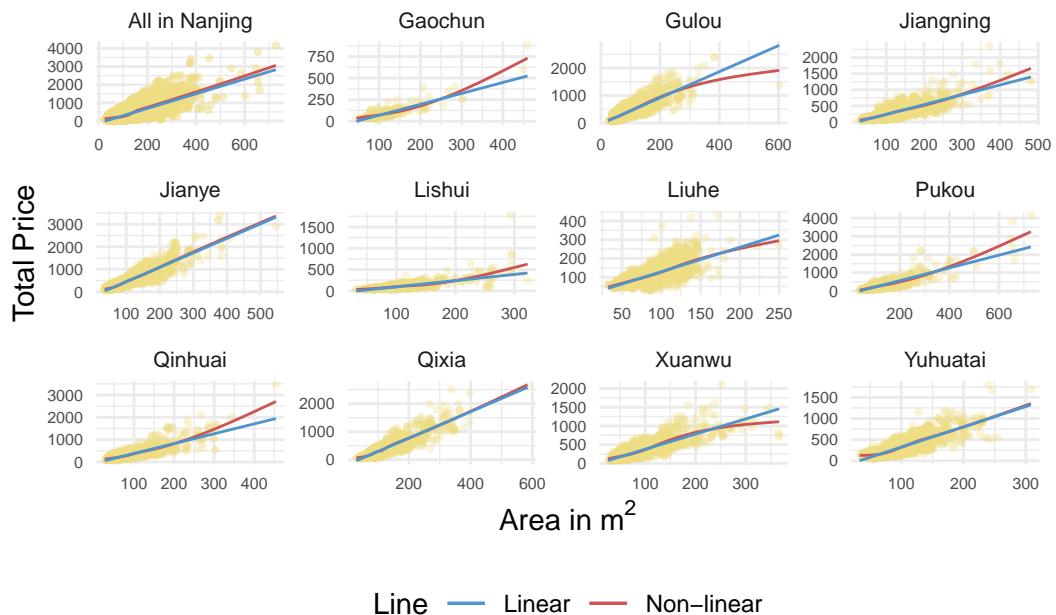


Figure 5: ?(caption)

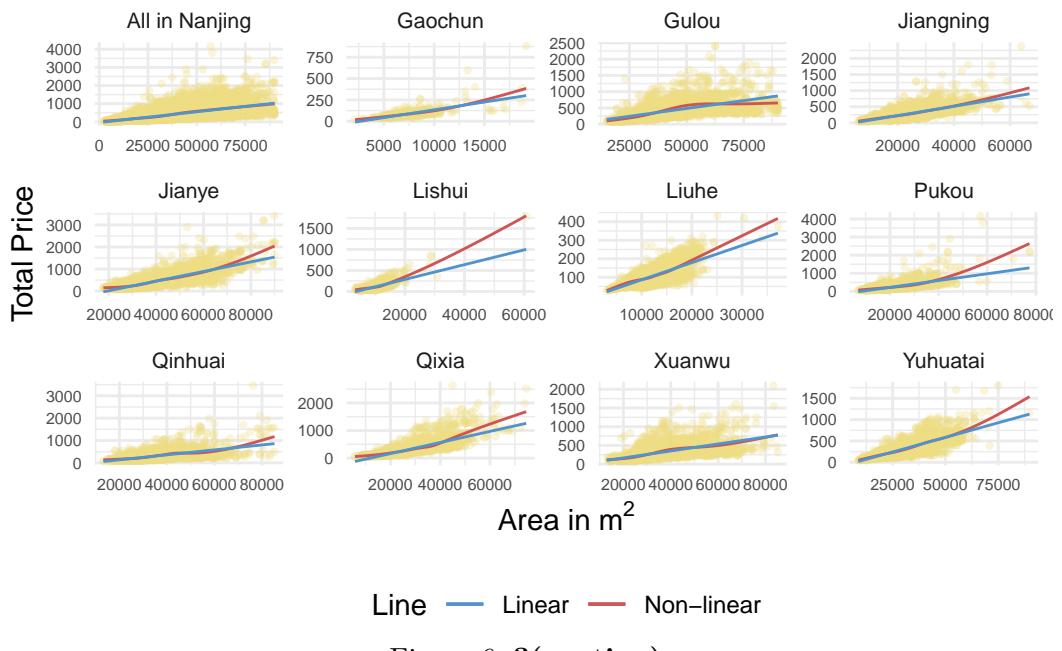


Figure 6: ?(caption)

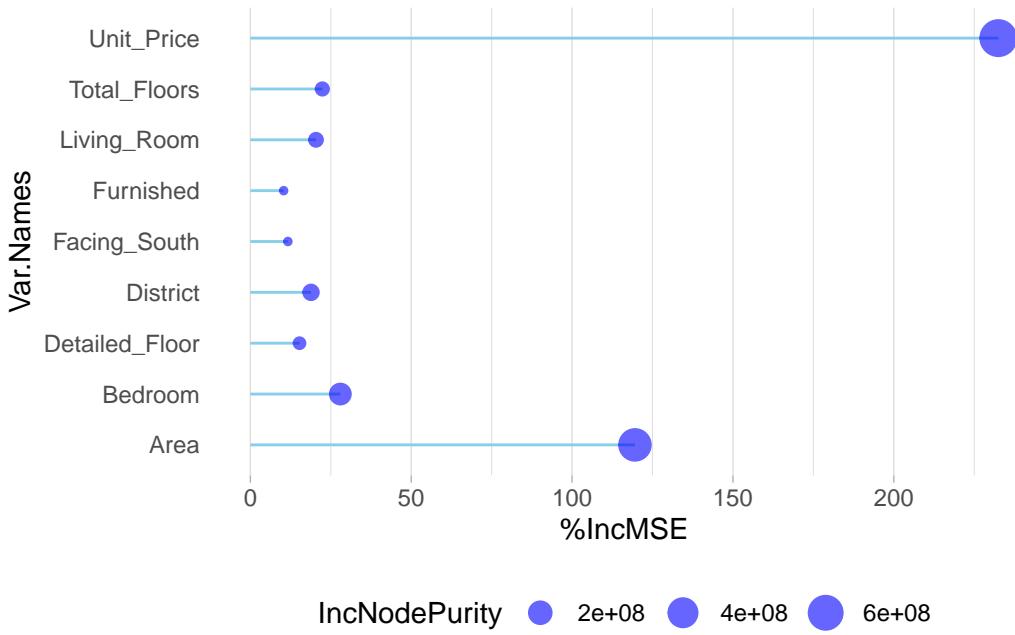


Figure 7: ?(caption)

Table 4: Summary of the multiple linear regression model

	(1)
(Intercept)	-372.275 (3.879)
Unit_Price	0.010 (0.000)
DistrictGulou	28.151 (3.812)
DistrictJiangning	23.994 (3.483)
DistrictJianye	70.496 (3.777)
DistrictLishui	18.433 (3.369)
DistrictLiuhe	60.561 (3.403)
DistrictPukou	22.117 (3.440)
DistrictQinhuai	32.303 (3.699)
DistrictQixia	44.620 (3.526)
DistrictXuanwu	31.561 (3.700)
DistrictYuhuatai	42.944 (3.563)
Area	3.838 (0.016)
FurnishedNot Furnished	1.336 (1.969)
FurnishedOther	2.276 (1.051)
FurnishedPart Furnished	-0.019 (1.410)
Bedroom	-18.007 (0.794)
Living_Room	-5.608 (1.018)
Total_Floors	0.234 (0.072)
Detailed_Floor	0.524 (0.124)
Facing_South	2.026 (0.916)
Num.Obs.	6
R2	0.924
R2 Adj.	0.924
AIC	274 897.2
BIC	275 075.4
Log.Lik.	-137 426.601
RMSE	68.72



Figure 8: ?(caption)

6 Reference