

Airbnb Host Helper

Founded: August 2008, San Francisco, CA



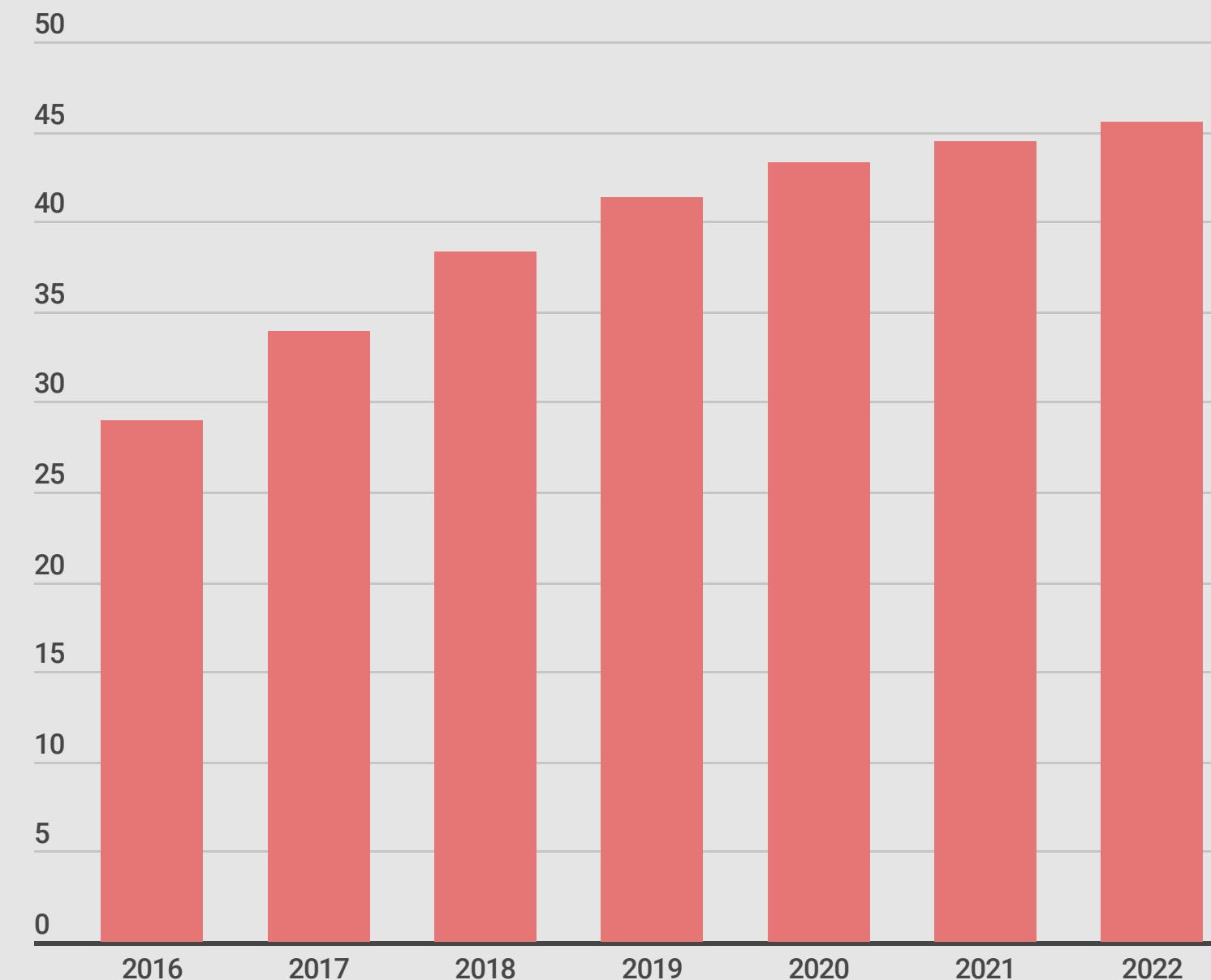
Hey, the market is still growing ● ● ●

68 Airbnb Statistics: 2019/2020 Market Share Analysis & Industry Growth | CompareCamp.com

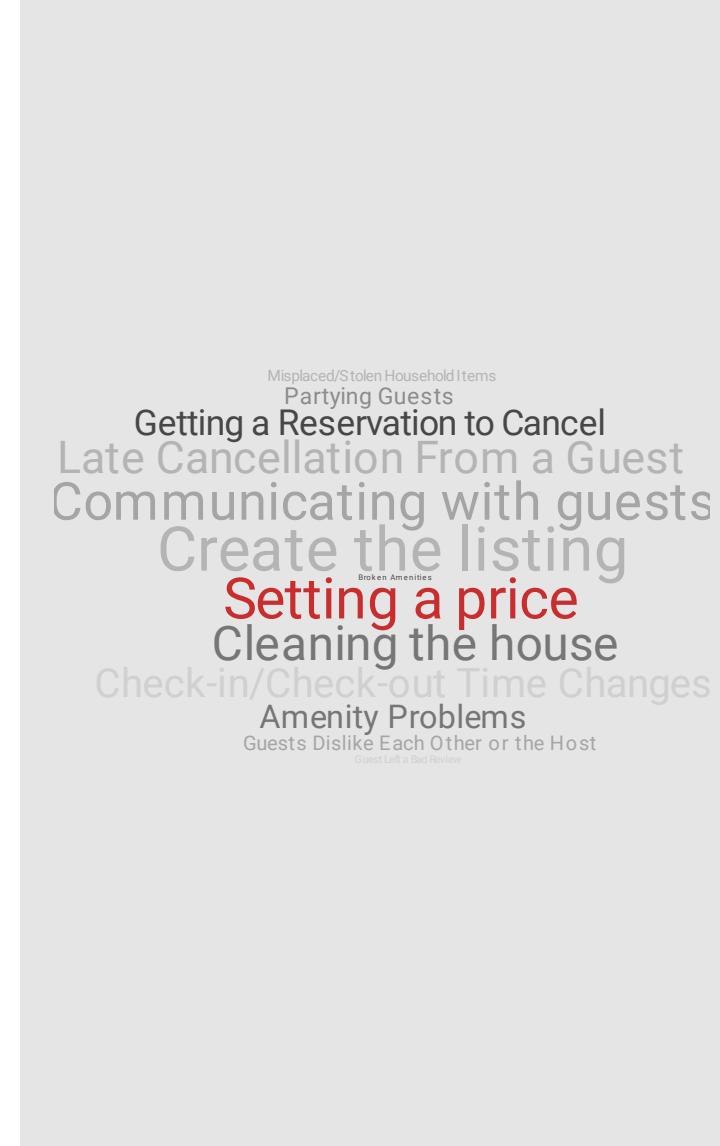
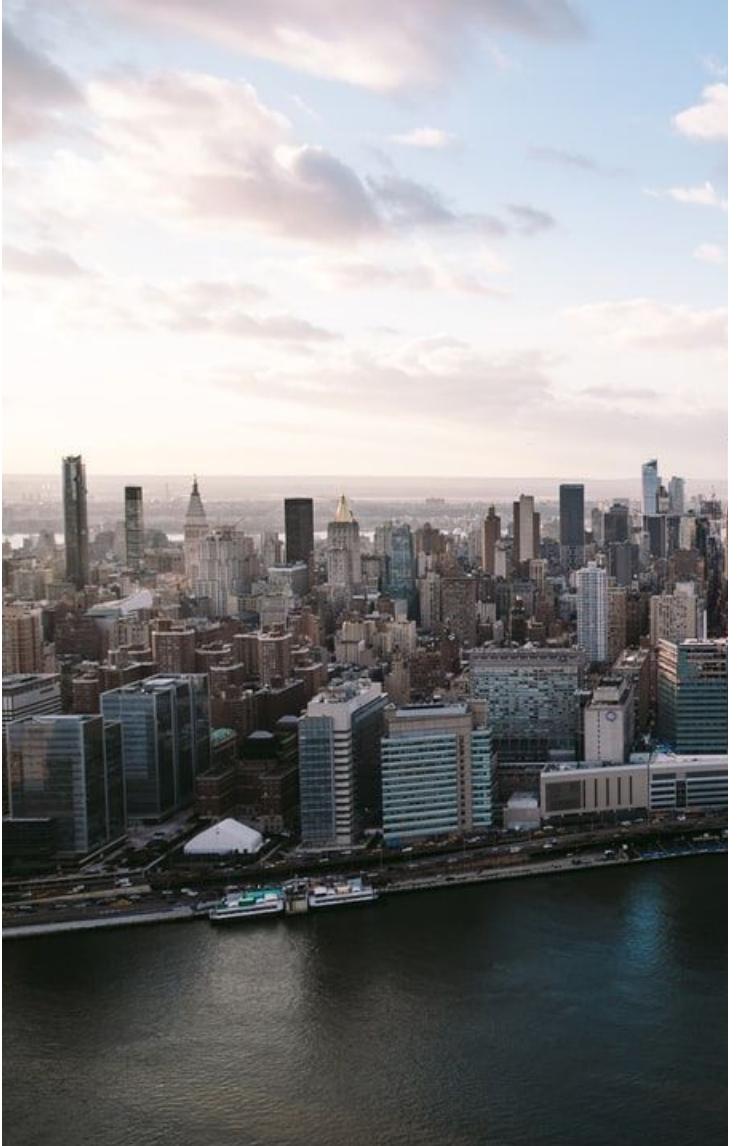
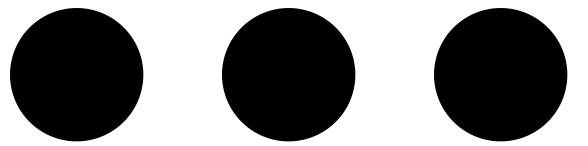
Airbnb has changed the way people travel. Here are Airbnb statistics you should know whether you want to stay in one or planning to have your place rented.

- There are over 650,000 Airbnb hosts worldwide and around 6.1 million listings.
- Over 100,000 cities worldwide have Airbnb listings as of January 2020.
- 10.4 million guests stayed in an Airbnb during the December 2019 holiday season.
- In 2018, Airbnb was valued at \$38 billion, up from \$31 billion the previous year.
- Airbnb has hosted 400 million guests since its launch in 2008.
- New York, Paris, and Tokyo are the three most popular cities for Airbnb booking experiences.
- 5.5% of the total demand for lodging in the US were composed of Airbnb listings in 2018.
- Travelers used Airbnb's platform to book almost 100 million room nights in the q2 of 2019 alone.
- Nightly rate or average daily rate of Airbnb listings stays pretty consistent at around \$100/night.

Number of Airbnb users in the U.S. 2016-2022 (Million)



Amazing, yet Challenging



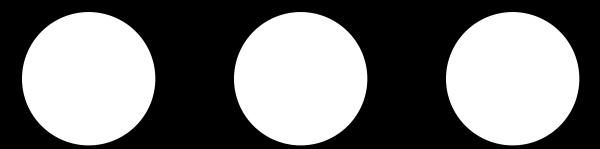
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Choosing the right price for the listing can be difficult. You want to make sure that you choose an amount that is fair based on what you are offering as a place, the time of year, events taking place, the amenities included, the location of your home, etc. You also want the amount to be fair to the guests who will be staying at your home. Taking all these factors into consideration can be quite difficult so take your time and make sure to do your research.

Challenges Faced by Hosts on Airbnb - Keycafe Blog

Being an Airbnb host brings a variety of unexpected challenges. Find out what challenges vacation rental hosts face, and how to best overcome them.

Is there a Airbnb listing going rate?



- As a new Airbnb host, how much rent should I charge customers?
- As an existing Airbnb host, is my listing price too high or too low?

- Does the listing price different before and post covid-19?

- As a traveler, is the price been charged reasonable?

Airbnb Boston Dataset Overview

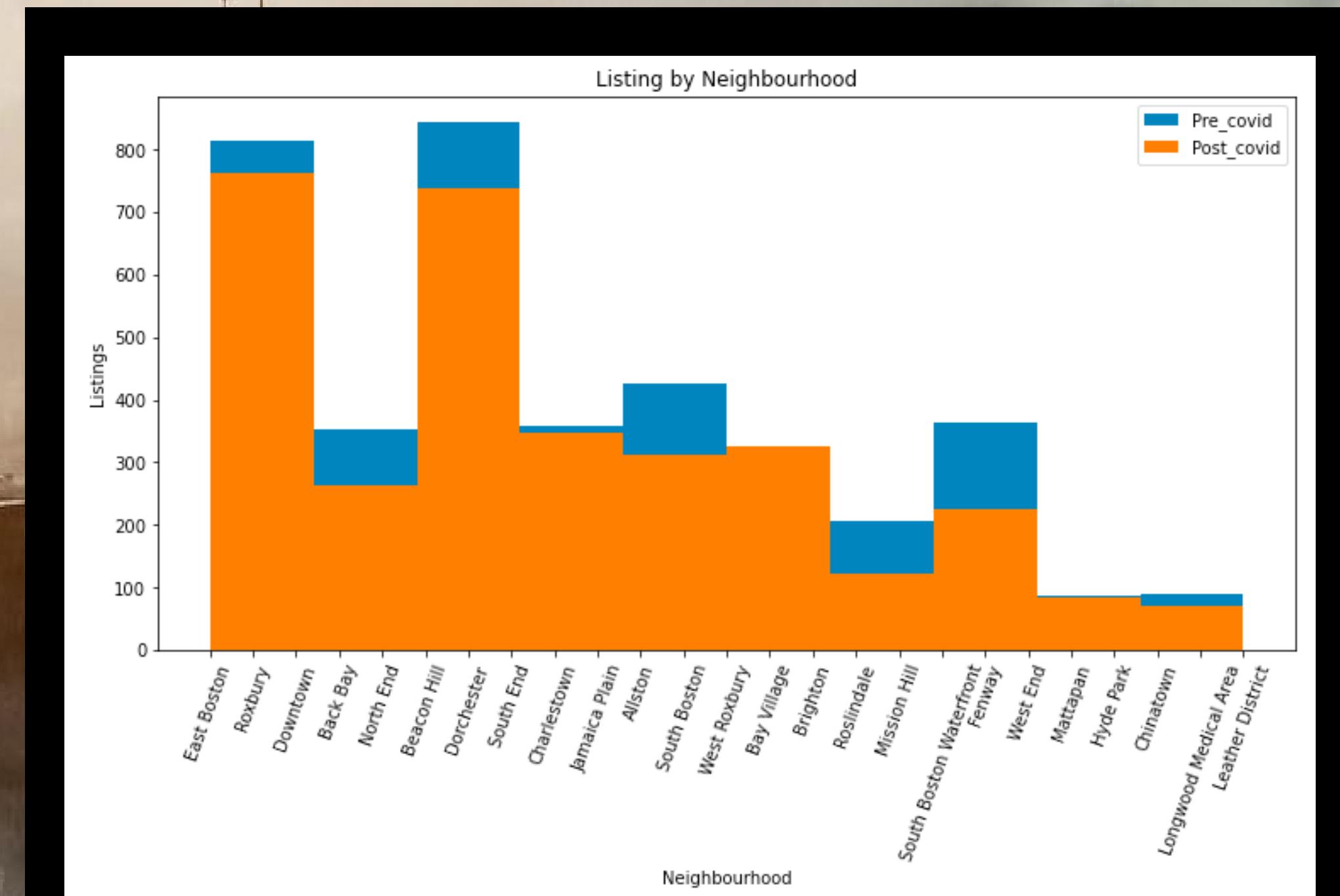
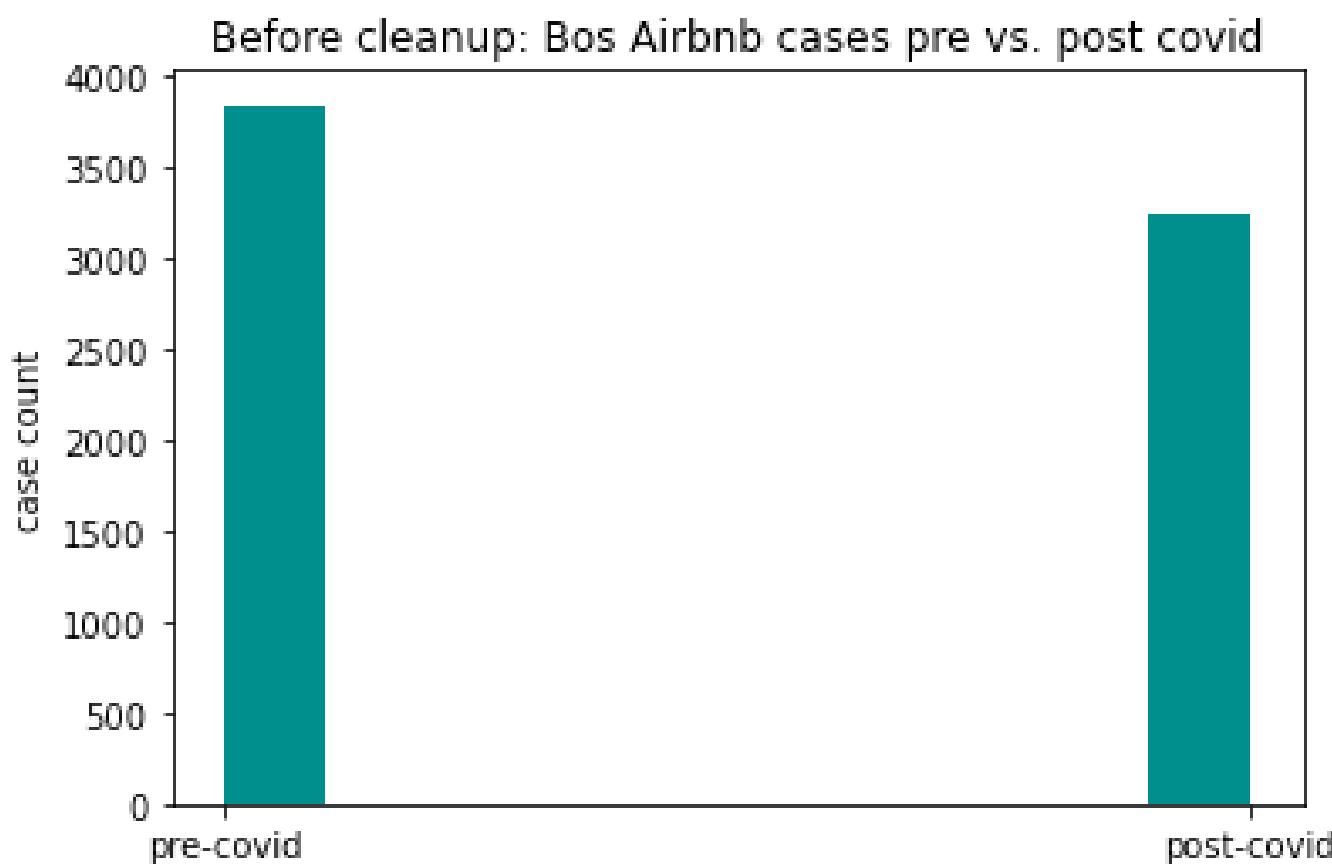


1

Airbnb Boston listing scrapped on
April 24, 2020

2

Airbnb Boston listing scrapped on
October 24, 2020

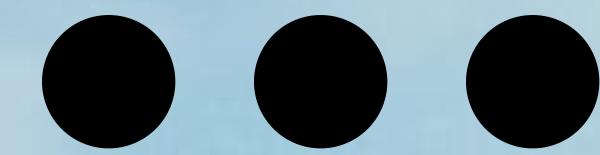


Clean-up, Pre vs. Post Covid



item	pre-covid (by Apr 2020)	post-covid (by Oct 2020)
before clean-up		
case count	3845	3254
average price	182.451	161.303
listing in both data set	2453	
Listing in pre covid only	1392	
Listing in post only		801
after clean-up		
dropped case count	25	424
case count	3820	2830
average price	183.046	167.137

EDA: Outliers in the data



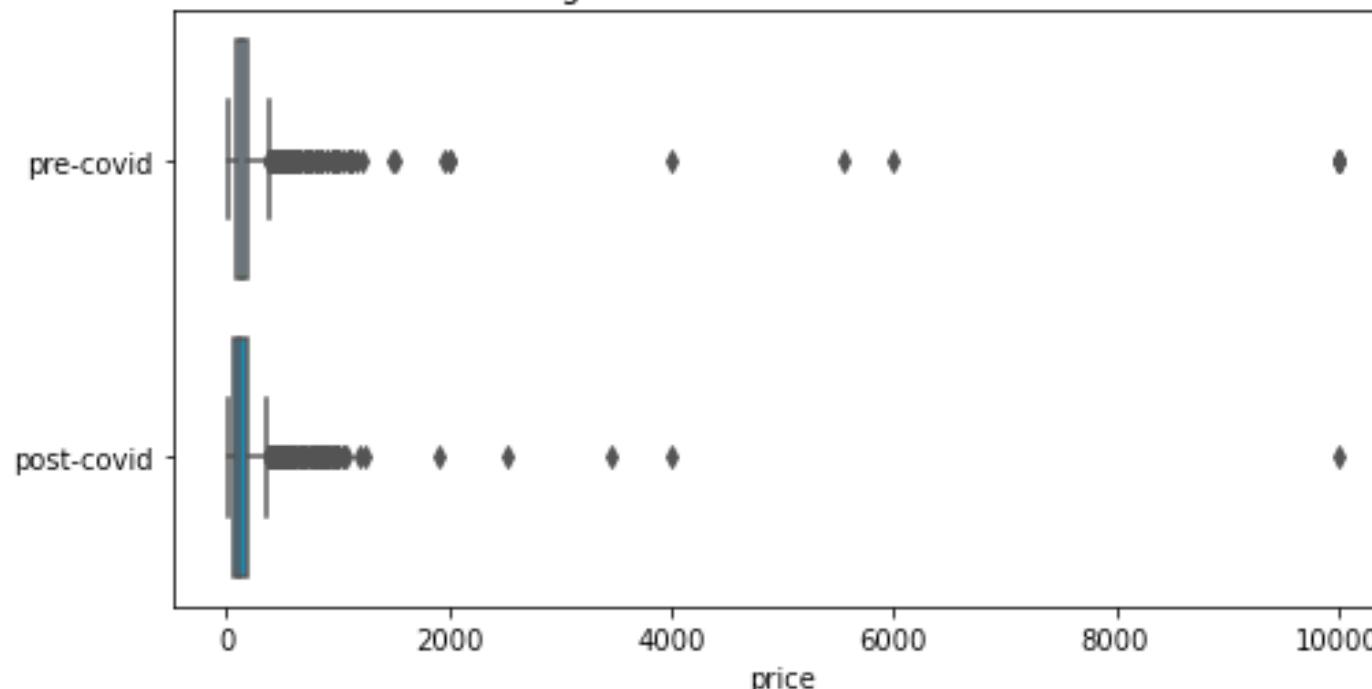
With outliers

	price	accommodates	bedrooms	beds	superhost	id_verified
count	6650.000000	6650.000000	6650.000000	6650.000000	6650.000000	6650.000000
mean	176.276241	3.253534	1.360451	1.749173	0.315188	0.552180
std	354.237285	2.219580	0.898772	1.370665	0.464626	0.497307
min	19.000000	1.000000	0.000000	0.000000	0.000000	0.000000
25%	75.000000	2.000000	1.000000	1.000000	0.000000	0.000000
50%	129.000000	2.000000	1.000000	1.000000	0.000000	1.000000
75%	199.000000	4.000000	2.000000	2.000000	1.000000	1.000000
max	10000.000000	29.000000	13.000000	22.000000	1.000000	1.000000

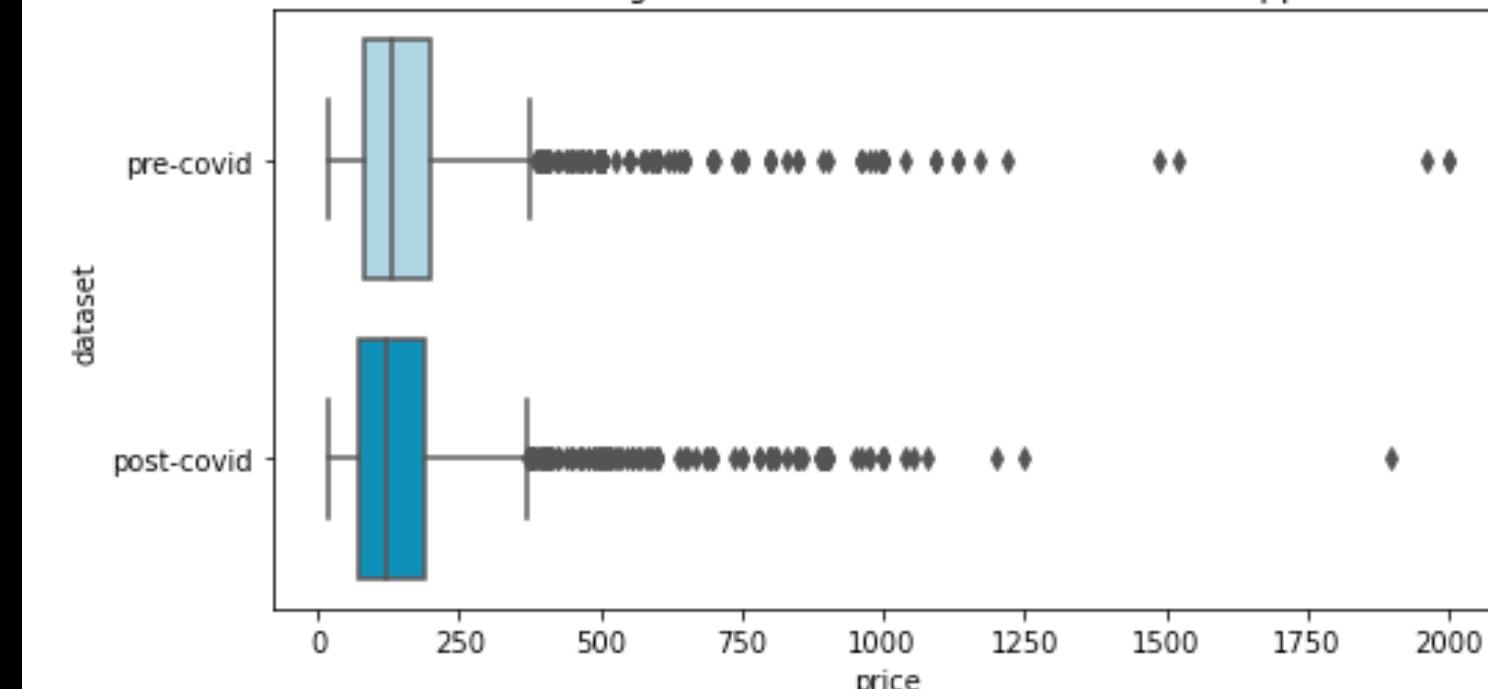
Without outliers

	price	accommodates	bedrooms	beds	superhost	id_verified
count	6638.000000	6638.000000	6638.000000	6638.000000	6638.000000	6638.000000
mean	163.712263	3.252034	1.358843	1.746158	0.315155	0.552425
std	148.340510	2.215705	0.887972	1.348735	0.464613	0.497281
min	19.000000	1.000000	0.000000	0.000000	0.000000	0.000000
25%	75.000000	2.000000	1.000000	1.000000	0.000000	0.000000
50%	128.000000	2.000000	1.000000	1.000000	0.000000	1.000000
75%	199.000000	4.000000	2.000000	2.000000	1.000000	1.000000
max	2000.000000	29.000000	13.000000	22.000000	1.000000	1.000000

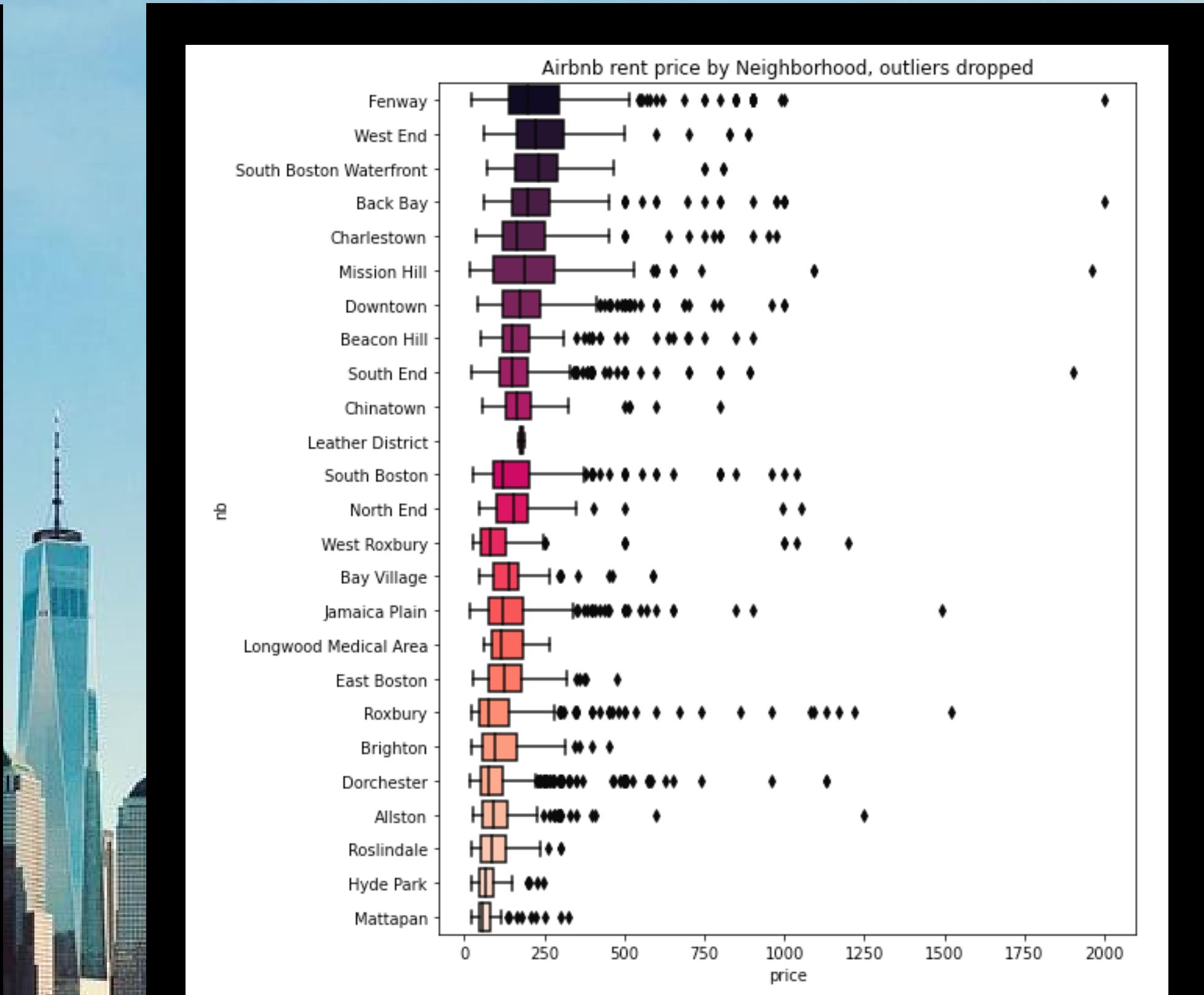
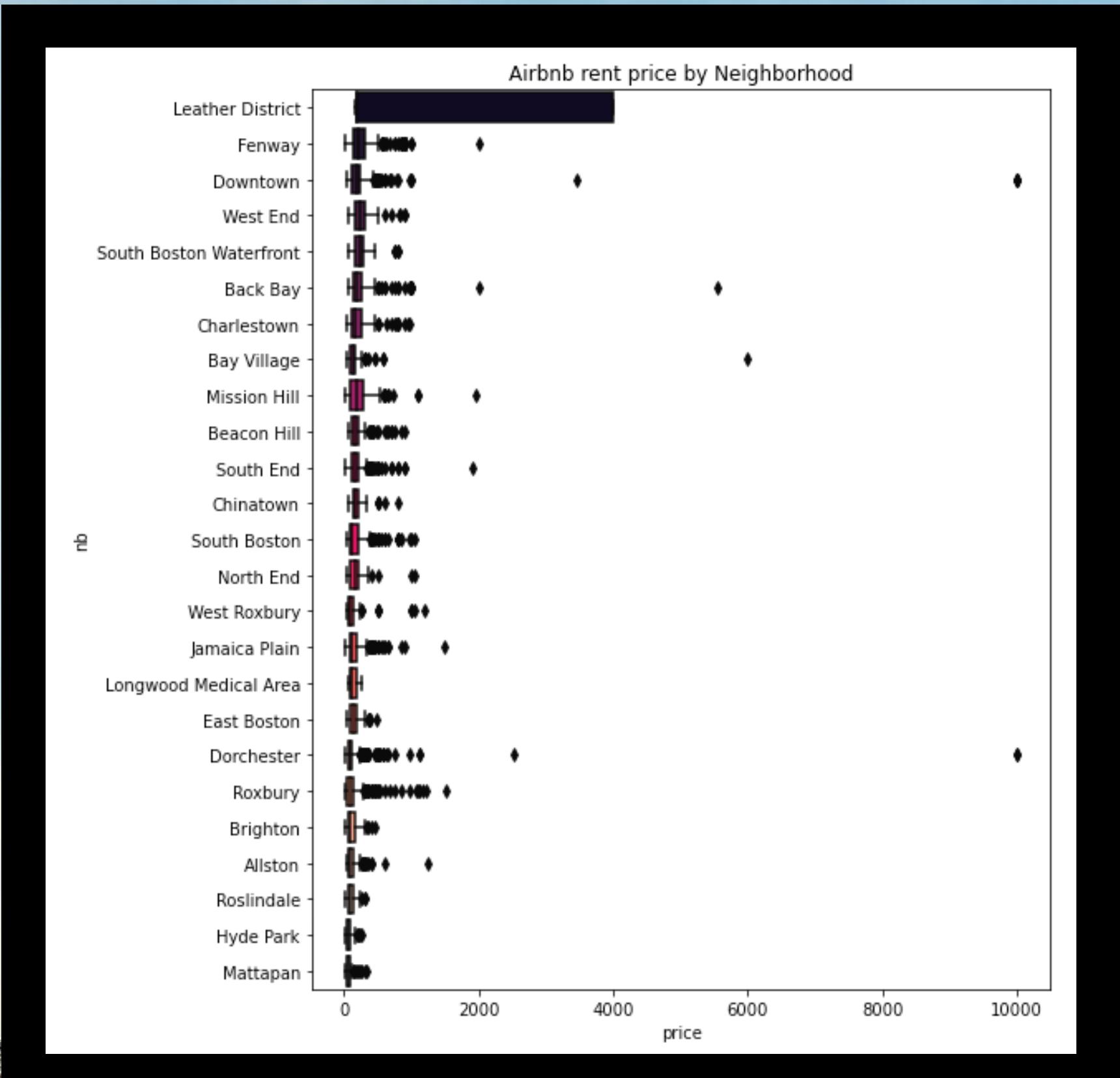
Airbnb Listing Price Pre vs. Post COVID (With outlier)



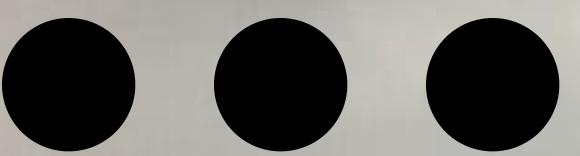
Airbnb Listing Price Pre vs. Post COVID (Outlier dropped)



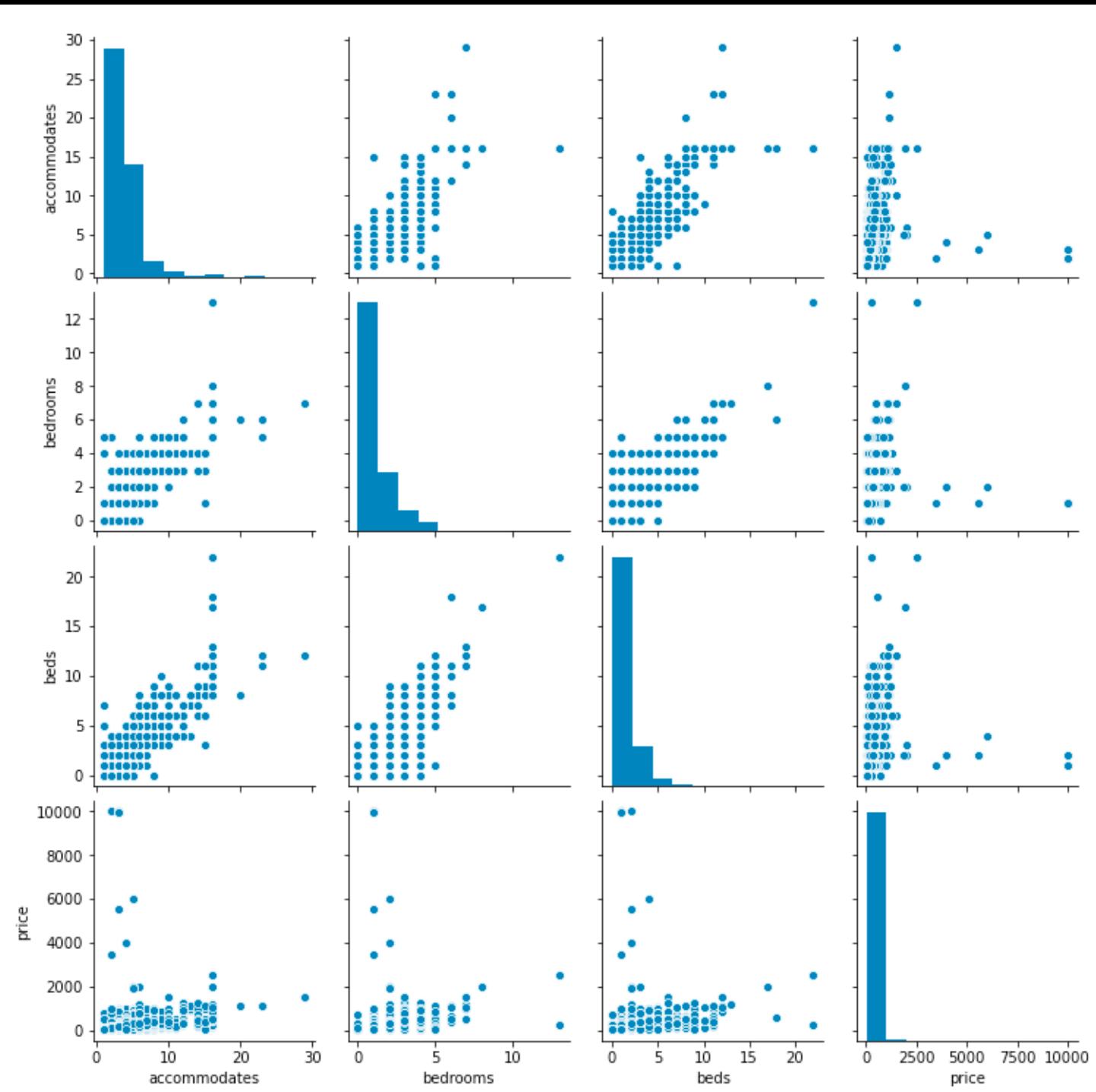
EDA: Outliers in the data



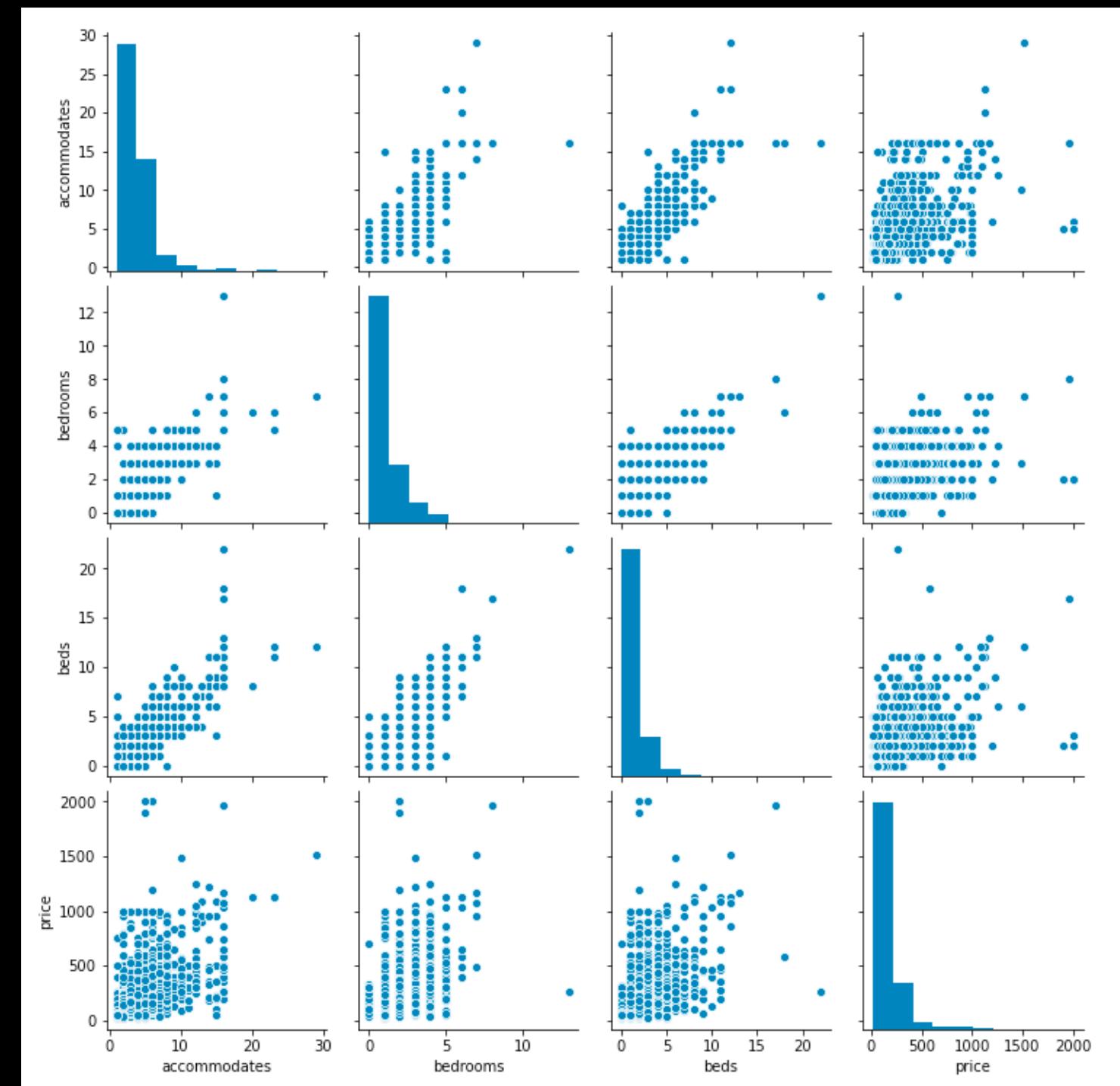
EDA - Price Factors



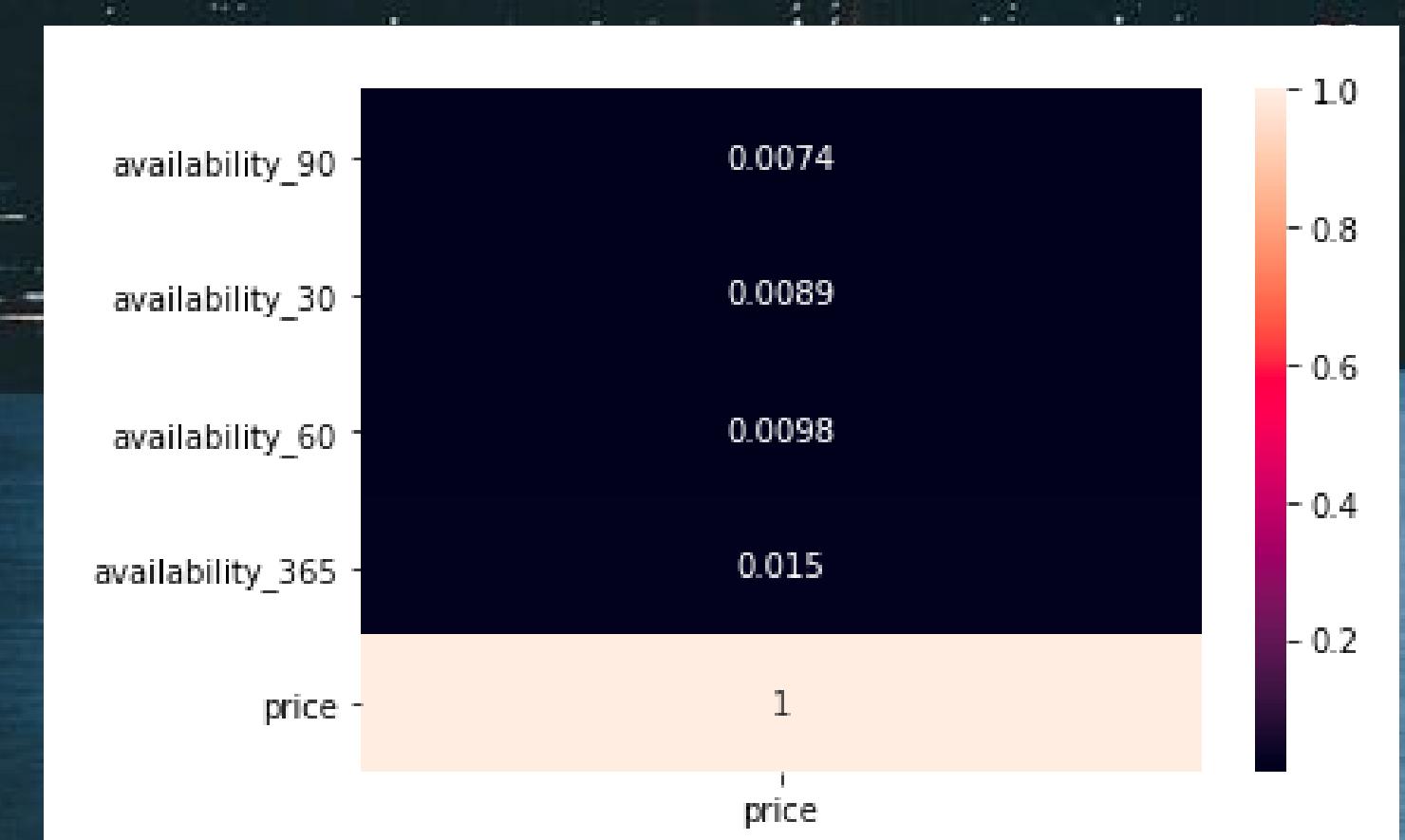
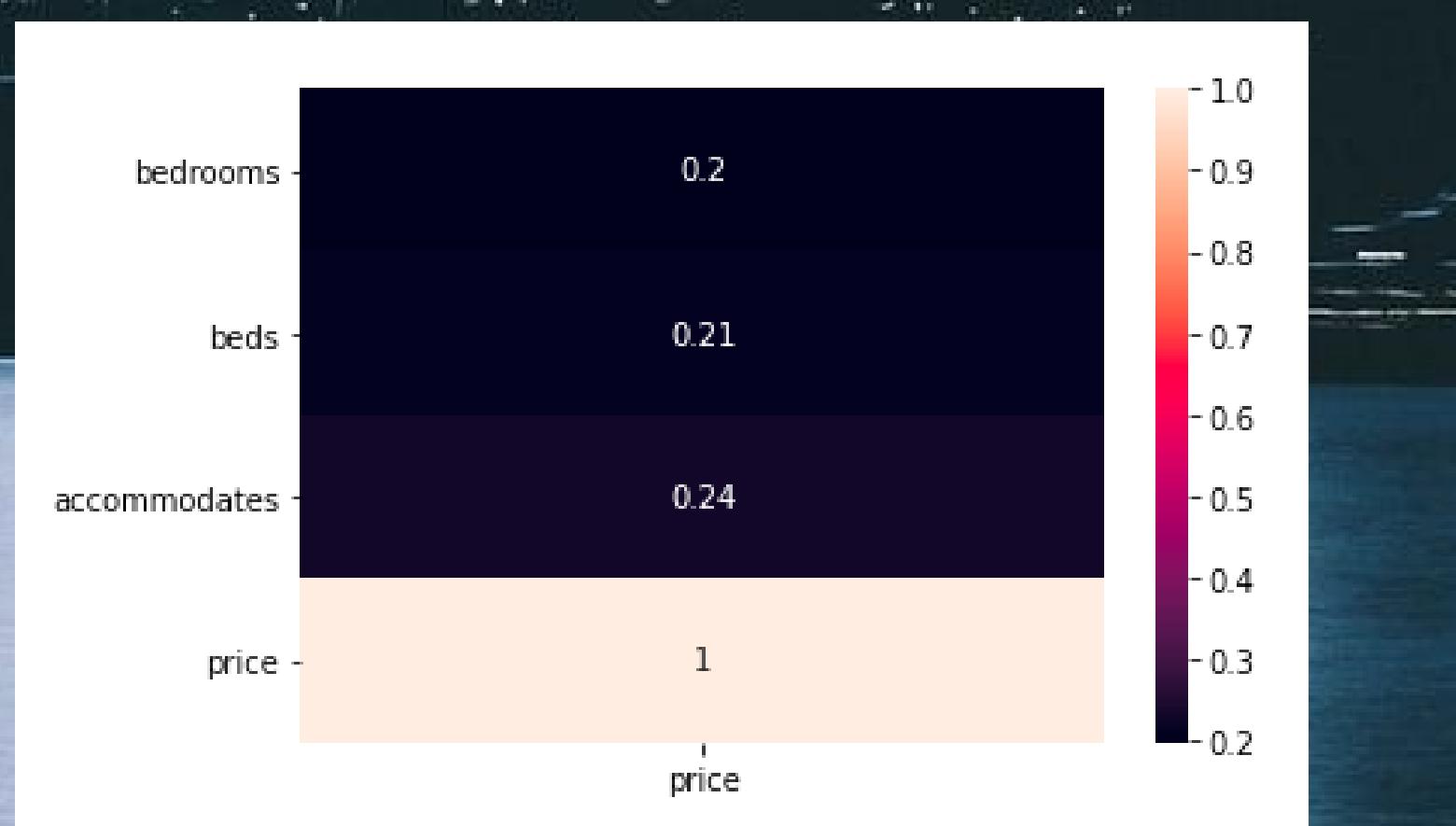
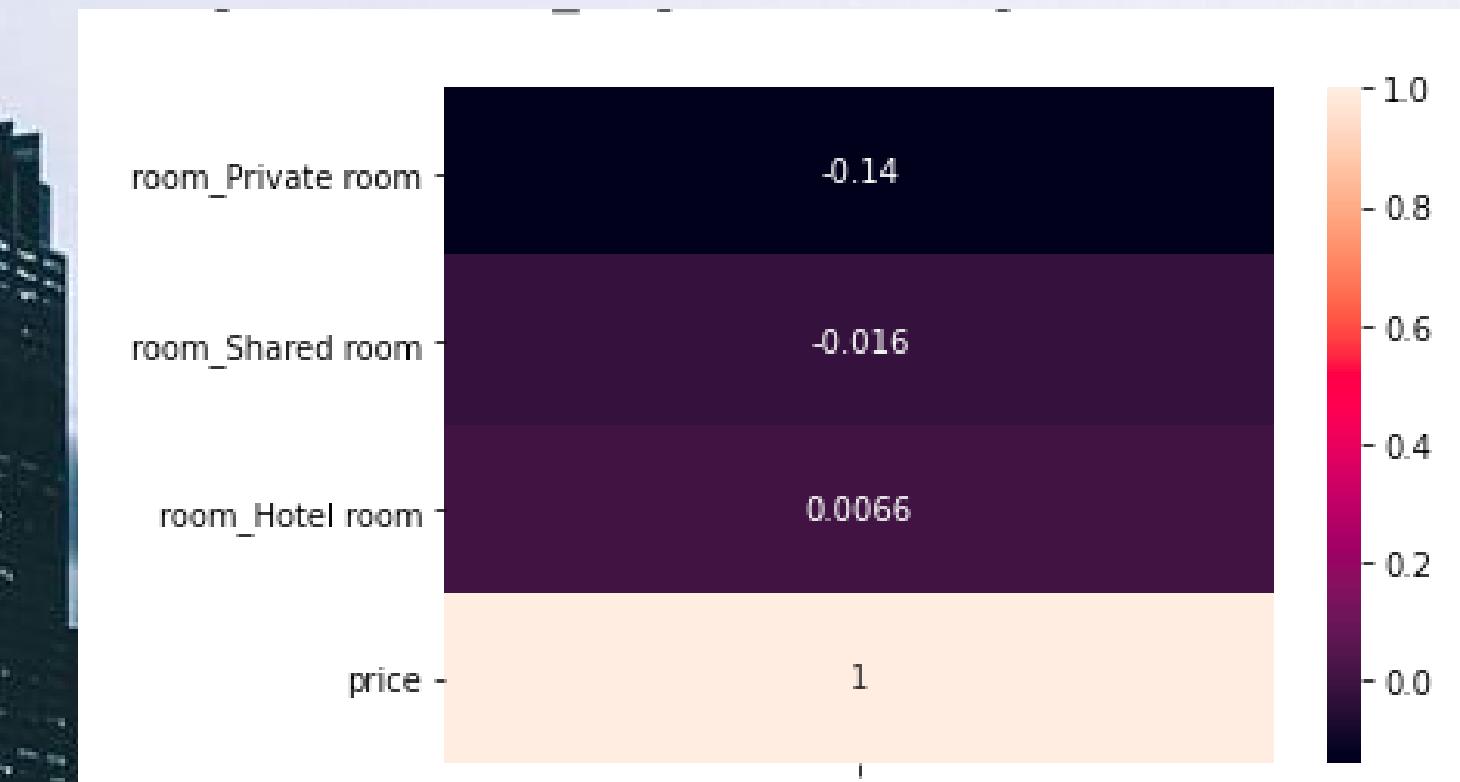
Pairplot with outliers included



Pairplot NO outliers included



EDA - Correlation



Modeling: First vs. Second Run



Model, no PCA, with outliers	Pre-Covid Best Training Score	Pre-Covid Best Testing Score	Post-Covid Best Training Score	Post-Covid Best Testing Score
LinearRegression	0.2149	0.25120	0.3488	-2.6747
KNeighborsRegressor	0.3461	0.3049	0.5089	0.0859
DecisionTreeRegressor	0.8807	0.4395	0.9341	0.0009
BaggingRegressor	0.7590	0.5605	0.8050	0.0683
RandomForestRegressor	0.7808	0.4770	0.8343	0.0779
AdaBoostRegressor	0.7458	0.0314	-1.1184	-0.3039

Model, with PCA, with outliers	Pre-Covid Best Training Score	Pre-Covid Best Testing Score	Post-Covid Best Training Score	Post-Covid Best Testing Score
LinearRegression	0.215	0.2512	0.3973	0.0777
KNeighborsRegressor	0.277	0.336	0.446	0.116

Modeling: Second vs. Third Run



Model, with PCA, with outliers	Pre-Covid Best Training Score	Pre-Covid Best Testing Score	Post-Covid Best Training Score	Post-Covid Best Testing Score
LinearRegression	0.215	0.2512	0.3973	0.0777
KNeighborsRegressor	0.277	0.336	0.446	0.116

Model, with PCA, no outliers	Pre-Covid Best Training Score	Pre-Covid Best Testing Score	Post-Covid Best Training Score	Post-Covid Best Testing Score
LinearRegression	0.5342	0.5353	0.428	0.3528
KNeighborsRegressor	0.6335	0.6074	0.5826	0.4108

Conclusion

1

Listing going rate

The listing price is assigned randomly but not completely random. We can see the relationship between various factors and the listing price

2

Covid-impact

- Less listing with lower average listing price
- The disruption makes predicting challenging

3

Having a service

- The idea is valid and the service is possible.
- Need to define user-friendly input

4

Expanding territory

- Add Airbnb data of other major cities
- More data, more serviceability