Storytelling Case Study: Airbnb in NYC
PPT-2

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Objective:

→ To Provide insight into the current market situation

→ Enhance our understanding of property and host acquisitions, operations, and customer preferences.

→ Provide early recommendations to our marketing and operations teams

Background

▶ For the past few months, Airbnb has seen a major decline in revenue.

▶ Now that the restrictions have started lifting and people have started to travel more, Airbnb wants to make sure that it is fully prepared for this change.

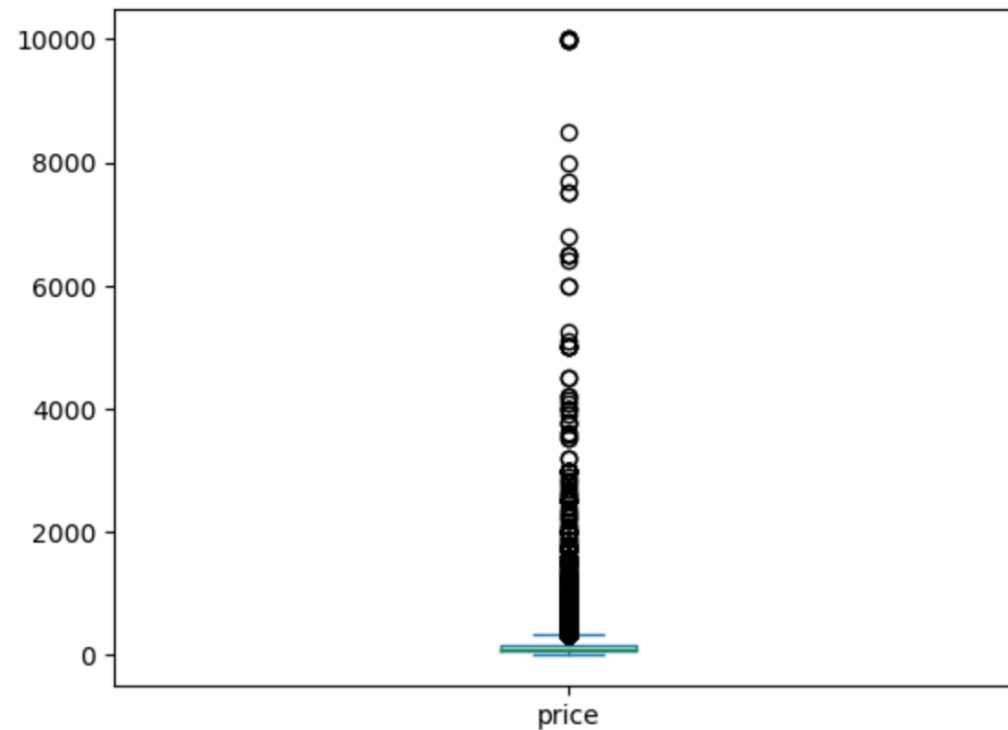▶ So, analysis has been done on a dataset consisting of various Airbnb listings in New York.

Key Findings

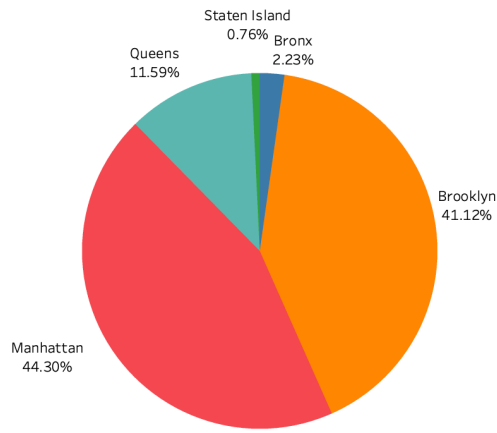Airbnb Price Range:

Most listings are under price of 5000


```
In [90]: airbnb.price.plot.box()

Out[90]: <AxesSubplot:>
```
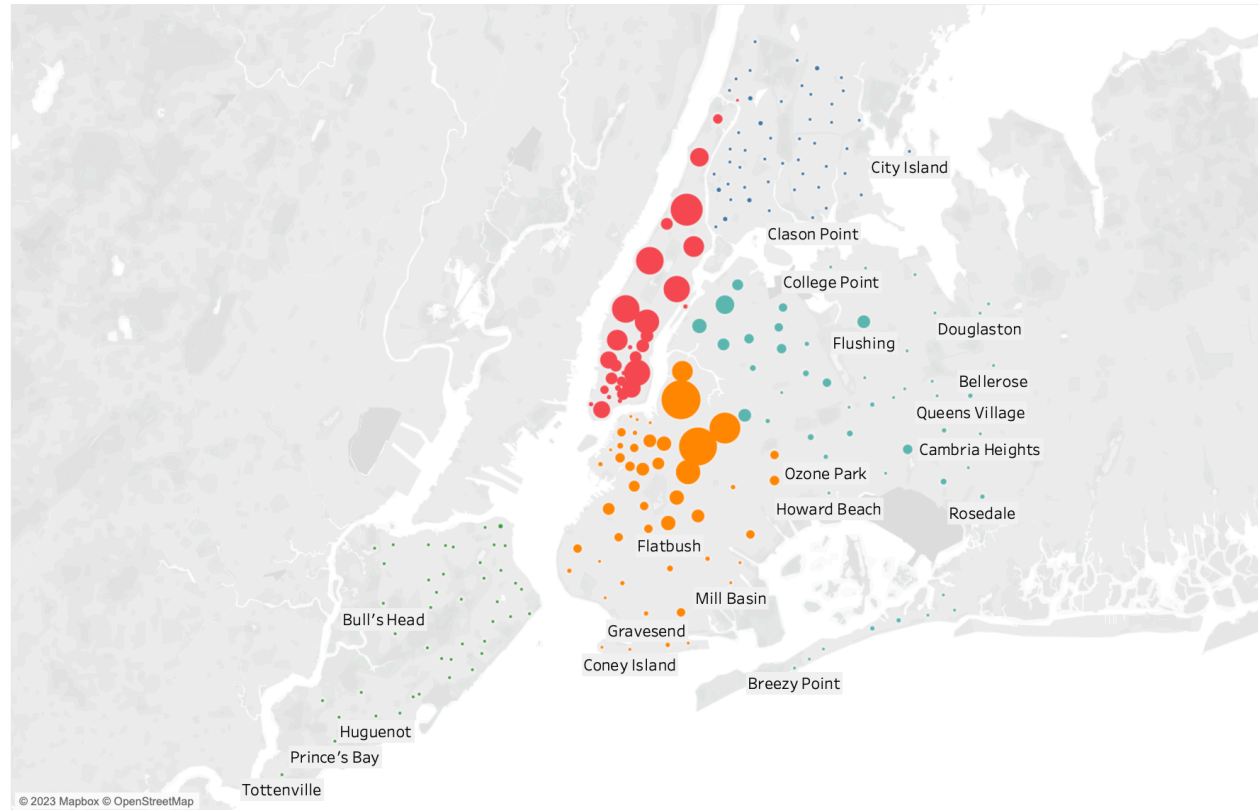
Neighbourhoods With Most Airbnb Listings
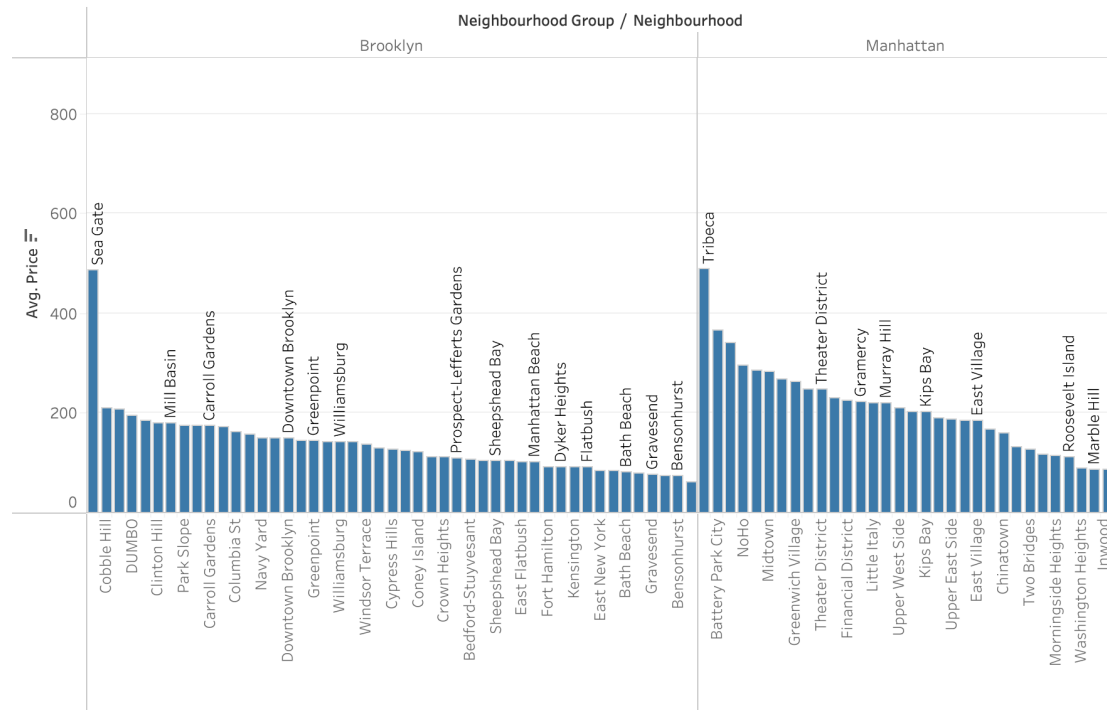
Neighborhoods Groups participation chart

- 85% of the listings are Manhattan and Brooklyn neighbourhood groups
- Staten Island has the lowest contribution of less than 1%.

AVERAGE AIRBNB PRICES IN BROOKLYN AND MANHATTAN

Average Price of Hotel Listings for Neighborhoods

- Tribeca in Manhattan and Sea Gate in Brooklyn have the highest average prices, as they are more upscale locations due to large number of business centres in these areas.
- Airbnbs in these locations would have more setup and maintenance costs.

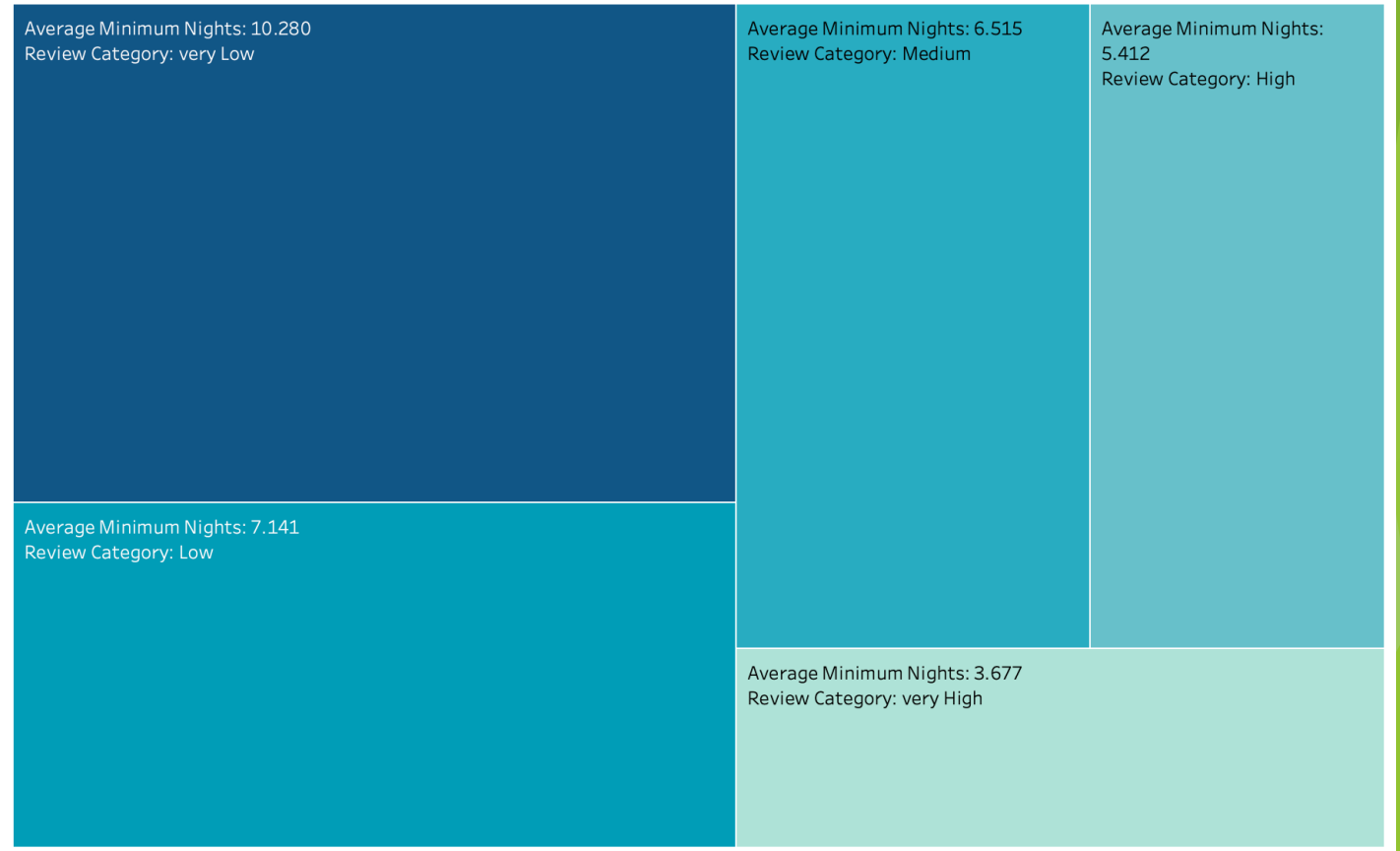# Price variation in different Neighbourhoods

- We see that, Airbnb has high prices in Manhattan, Brooklyn & Queens.

- Prices are highest in Manhattan & Brooklyn owing to the high population density and it being the financial and tourism hubs of NYC. Staten Island has the least prices, due to its low population density and very few tourism destinations.

Airbnb price variation in neighborhoods
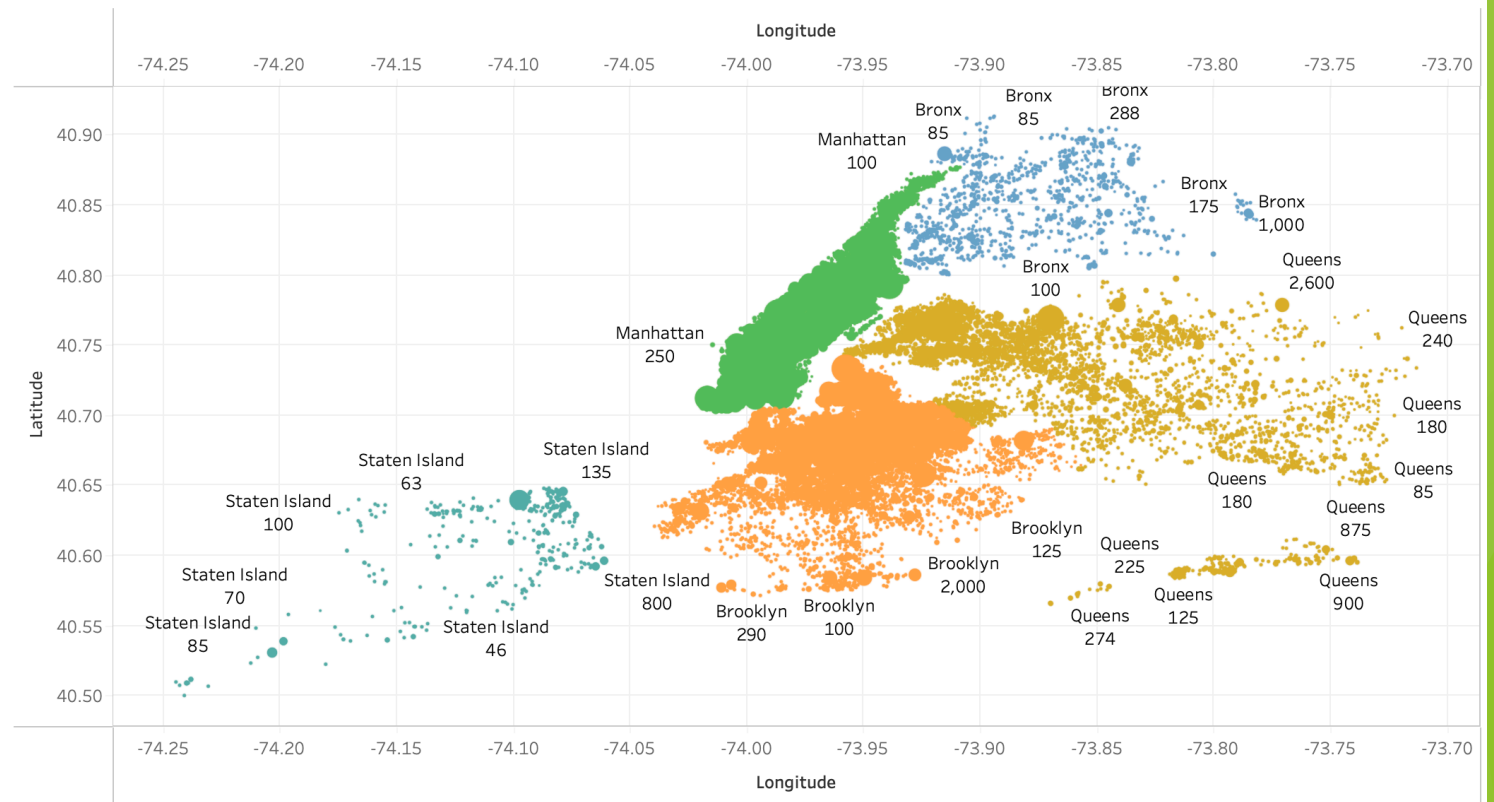
Effect of Minimum Nights on Customer Reviews

- Higher the number of minimum nights, the lower are the reviews for that Airbnb.

- We see that customers are more likely to leave reviews for lower number of minimum nights.

Average Minimum Nights: 10.280
Review Category: very Low

Average Minimum Nights: 6.515
Review Category: Medium

Average Minimum Nights: 5.412
Review Category: High

Average Minimum Nights: 7.141
Review Category: Low

Average Minimum Nights: 3.677
Review Category: very High

Room Type Preferences

- Shared rooms only account for 2% of the total types of rooms.

- We see that customers do not prefer to share space, likely due to recent Covid outbreak.

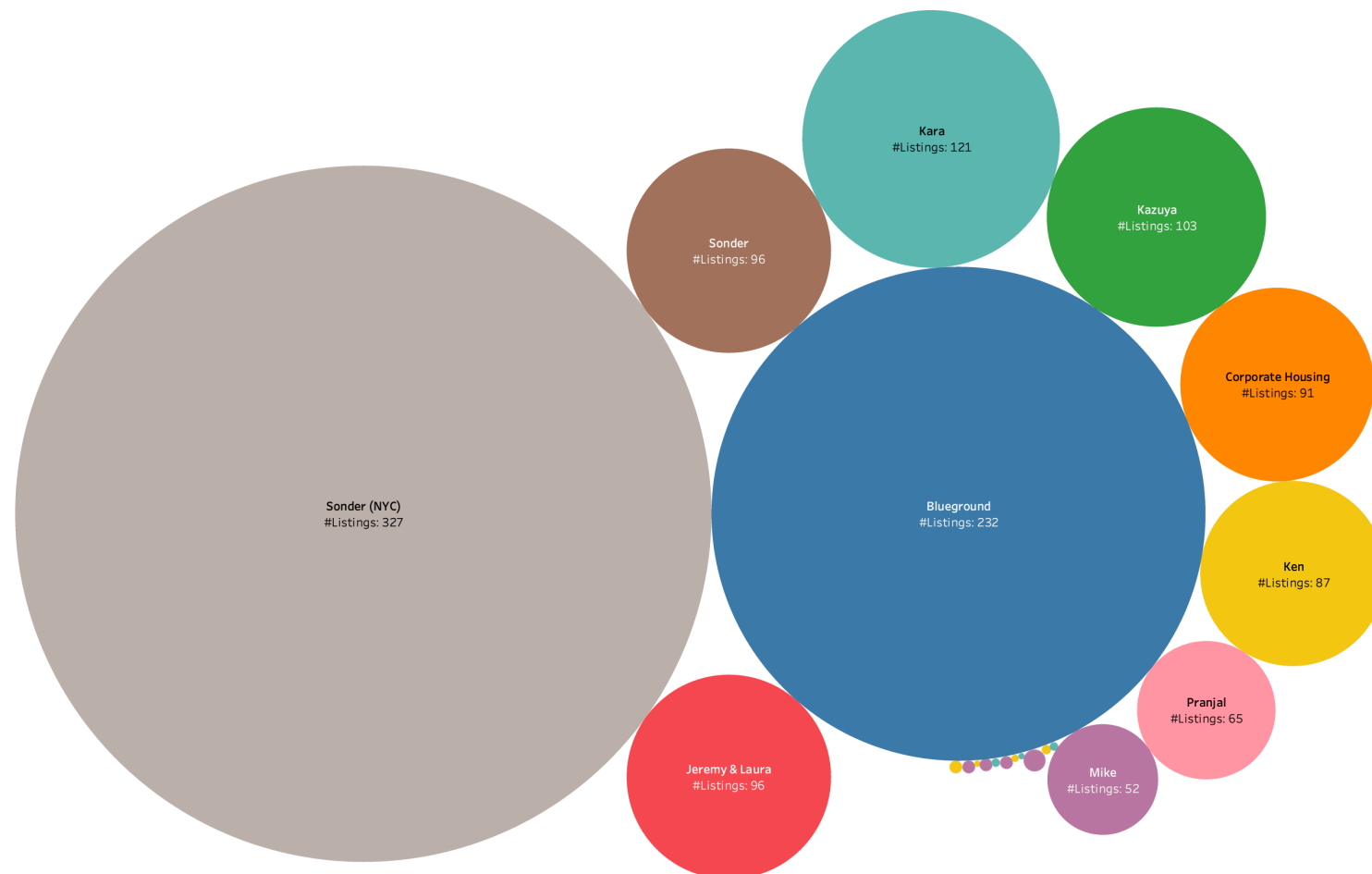- This trend may continue and does not seem to be profitable in the near future.

Room Type

Count of Room Type (y-axis: 0K to 26K)

Entire home/apt	Private room	Shared room
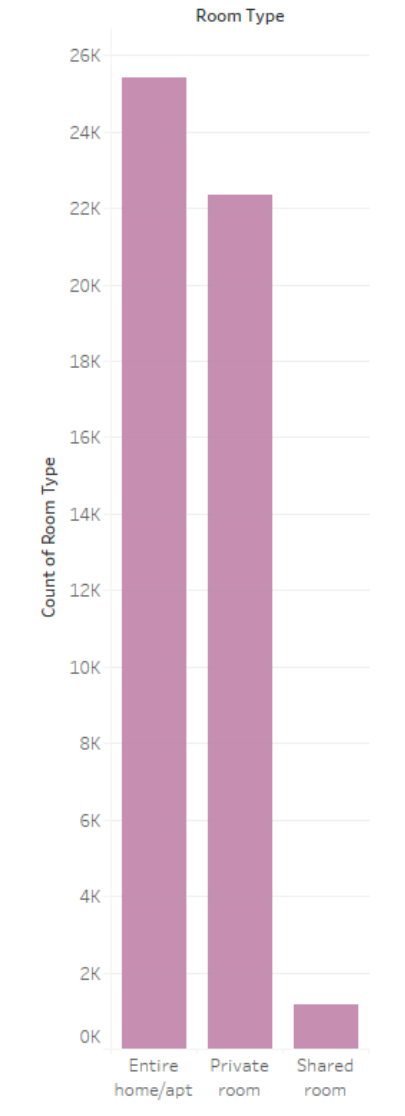
Top 10 Hosts

Sonder(NYC) and Blueground have the most number of listings, solidifying their presence as well established Airbnb hosts.

Top 10 hosts with hosted listings

Kara
#Listings: 121

Kazuya
#Listings: 103

Sonder
#Listings: 96

Corporate Housing
#Listings: 91

Sonder (NYC)
#Listings: 327

Blueground
#Listings: 232

Ken
#Listings: 87

Pranjal
#Listings: 65

Jeremy & Laura
#Listings: 96

Mike
#Listings: 52

# Popular Neighbourhoods

- We see that Bedford-Stuyvesant from Brooklyn is the highest popular with over 100K no of reviews in total followed by Williamsburg with over 80K reviews.

- Harlem from Manhattan got the highest no of reviews followed by Hell's kitchen.

- The higher number of customer reviews imply higher satisfaction in these localities.

Top 5 most popular neighborhoods in each Borough
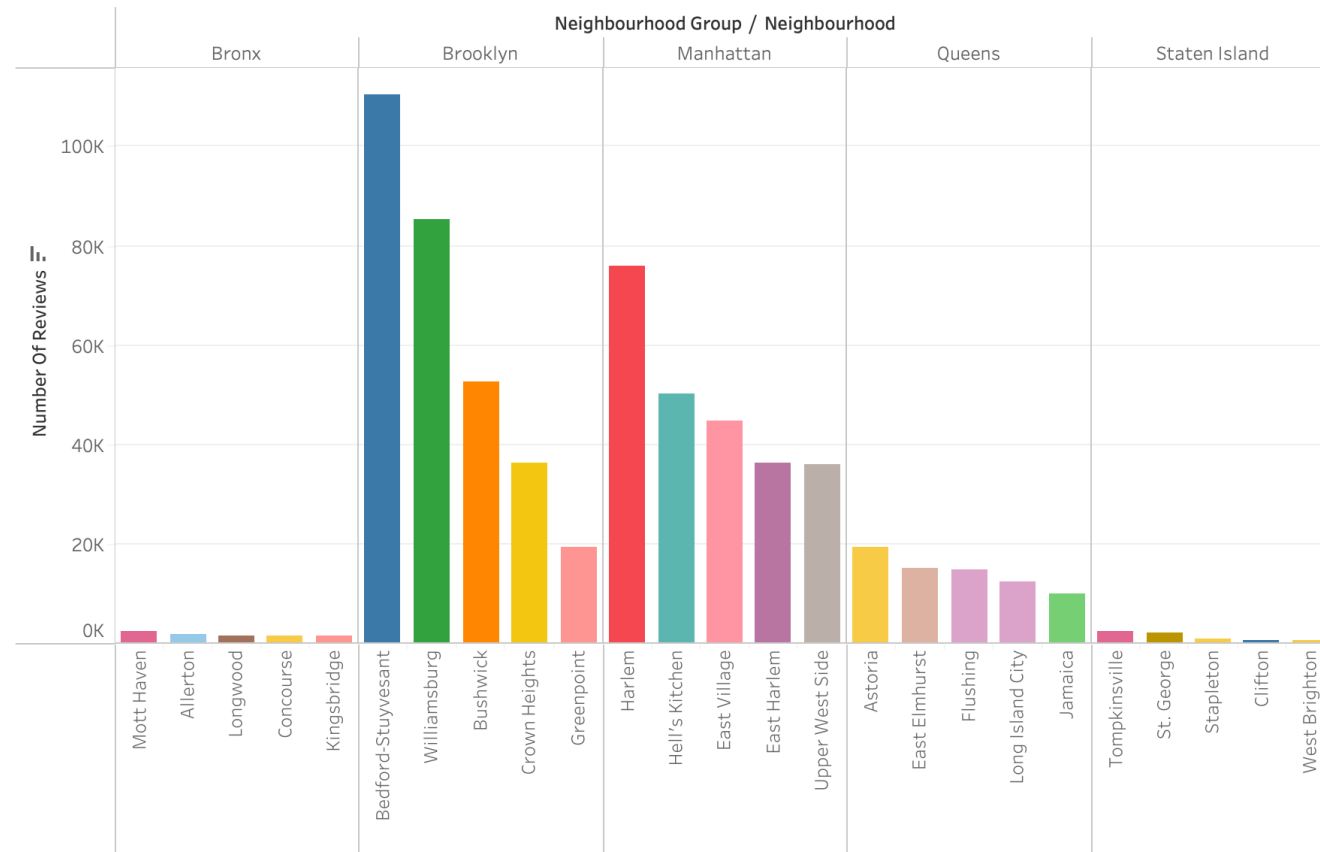
Price vs Availability in different neighbourhoods
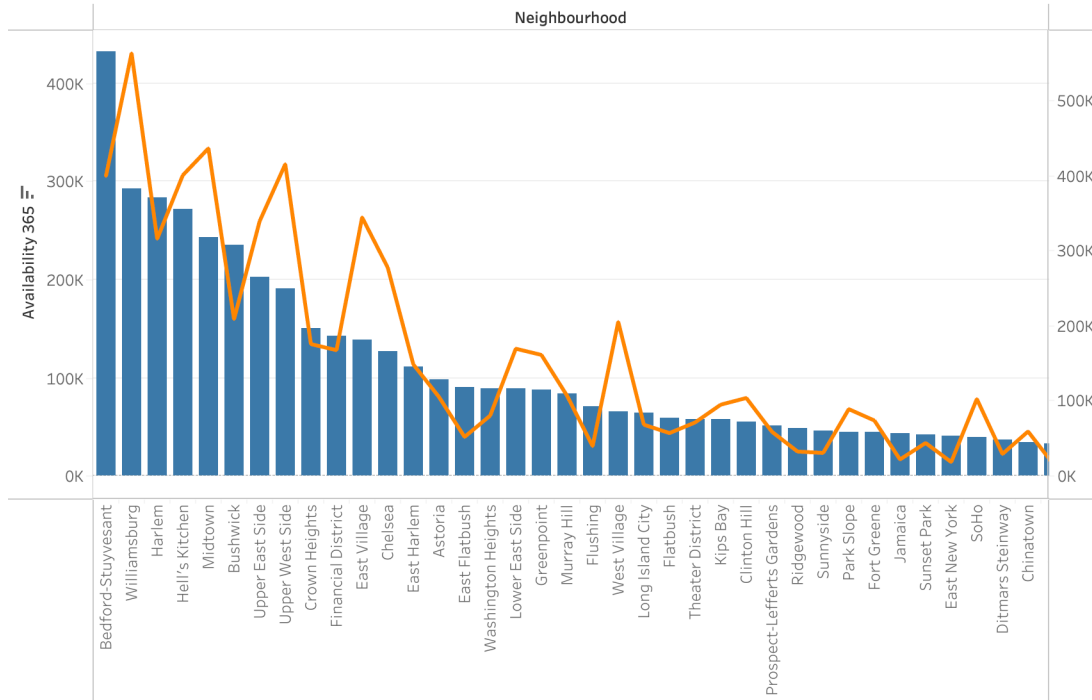
- Availability of Bedford Stuyvesant is highest and its price is on the lower side. This makes the neighbourhood a good choice for customers.

- After Bedford, Harlem follows the same trend.

- Chelsea's availability low but it is costly, similar to Upper West side.

- On the other hand, Williamsburg price is high and has average availability.

Conclusion and Recommendations

- Brooklyn and Manhattan emerged to be the boroughs with highest number of listings (above 80%) and have higher prices than the others, owing to the high population density and it being the financial and tourism hubs of NYC. This makes them suitable for business in Airbnb market.

- Number of minimum nights should be on the lower side to make properties more customer-oriented.

- Sonder(NYC) and Blueground emerged as hosts with highest number of listings, making them suitable for continuing operations.

- We see that customers do not prefer to share space, likely due to recent Covid outbreak. Shared rooms may not be profitable listing choice in the near future.

- Availability of Bedford Stuyvesant is highest and its price is on the lower side. This makes the neighbourhood an excellent choice for customers.

APPENDIX -DATA SOURCES

Column	Description
id	listing ID
name	name of the listing
host_id	host ID
host_name	name of the host
neighbourhood_group	location
neighbourhood	area
latitude	latitude coordinates
longitude	longitude coordinates
room_type	listing space type
price	
minimum_nights	amount of nights minimum
number_of_reviews	number of reviews
last_review	latest review
reviews_per_month	number of reviews per month
calculated_host_listings_count	amount of listing per host
availability_365	number of days when listing is available for booking

APPENDIX -DATA METHODOLOGY

- Conducted a thorough analysis of New York Airbnbs Dataset.

- Cleaned the data set using python.

- Derived the necessary features.

- Used group aggregation, pivot table and other statistical methods.

- Created charts and visualisations using Tableau for generating insights.

APPENDIX -DATA ASSUMPTIONS

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Categorical Variables:
    - room_type
    - neighbourhood_group
    - neighbourhood

Continous Variables(Numerical):
    - Price
    - minimum_nights
    - number_of_reviews
    - reviews_per_month
    - calculated_host_listings_count
    - availability_365
- Continous Variables could be binned in to groups too

Location Varibles:
    - latitude
    - longitude

Time Varibale:
    - last_review                    .
```