



# Improving **airbnb** NYC business in the post-COVID era

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# Introduction

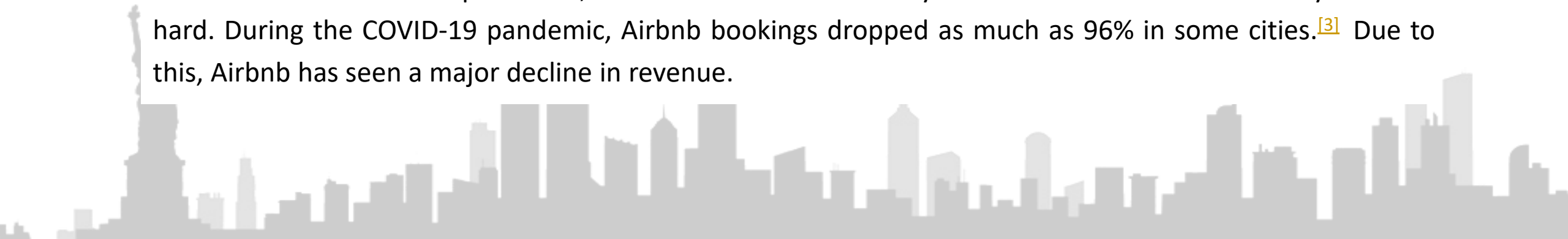
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Airbnb, Inc. is an American company that operates an online marketplace for lodging, primarily homestays for vacation rentals, and tourism activities. Airbnb provides a platform for hosts to accommodate guests with short-term lodging and tourism-related activities.<sup>[1]</sup>

New York City is the most diverse and populated city in the United States. The city is made up of 5 boroughs: Manhattan, Brooklyn, Queens, the Bronx and Staten Island, all of which were “grouped” together into a single city. <sup>[2]</sup>

In January 2020, Airbnb saw 50.2 million website visits.

But with the onset of the pandemic, Airbnb was one of the many businesses in the travel industry to be hit hard. During the COVID-19 pandemic, Airbnb bookings dropped as much as 96% in some cities.<sup>[3]</sup> Due to this, Airbnb has seen a major decline in revenue.





# Objective

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

The presentation will focus mainly on the following points:

- 📍 Understand customer preferences and customer experience in airbnb listings
- 📍 Understand the pricing relation to various parameters
- 📍 Recommendations to improve quality of new acquisitions and customer experience.



# Key Insights

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To understand some important insights we have explored the following points:

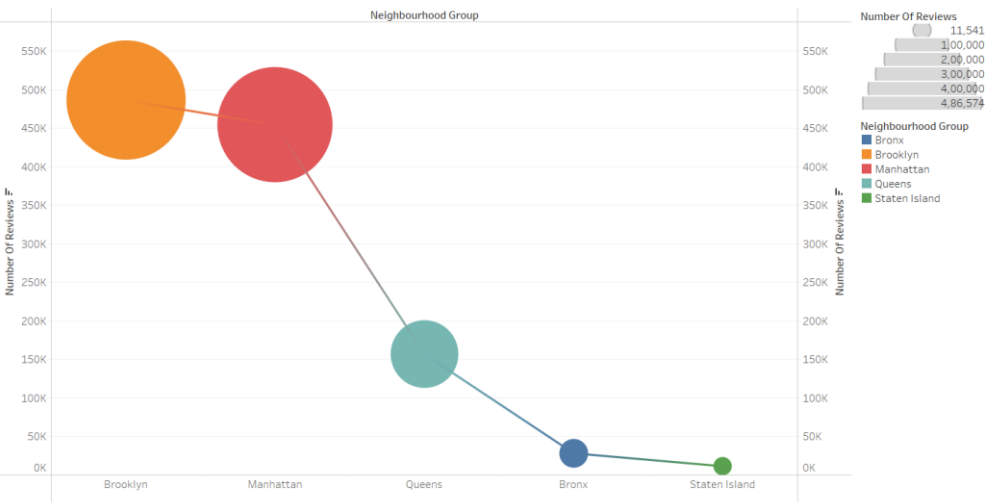
- 📍 Customer preference for neighbourhood & room type
- 📍 Property demand based on minimum nights offered
- 📍 Price range preferred by customers
- 📍 Understanding Price variation w.r.t Room Type & Neighbourhood
- 📍 Understanding Price variation w.r.t Geography
- 📍 Top reviewed properties and their price range





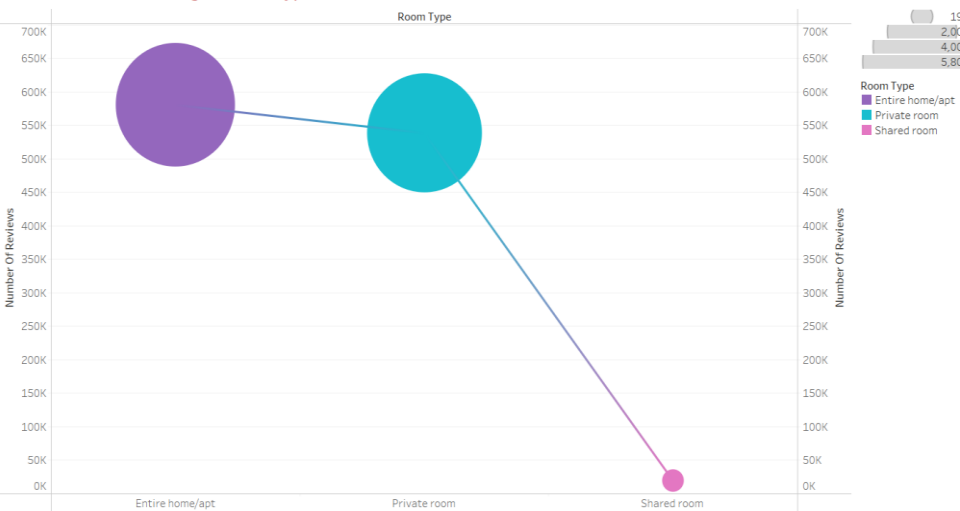
# Customer preference for neighbourhood & room type

No. of reviews according to Neighbourhood



The trends of sum of Number Of Reviews and sum of Number Of Reviews for Neighbourhood Group. Color shows details about Neighbourhood Group. For pane Sum of Number Of Reviews: Size shows sum of Number Of Reviews.

No. of reviews according to Room type



The trends of sum of Number Of Reviews and sum of Number Of Reviews for Room Type. Color shows details about Room Type. For pane Sum of Number Of Reviews: Size shows sum of Number Of Reviews.

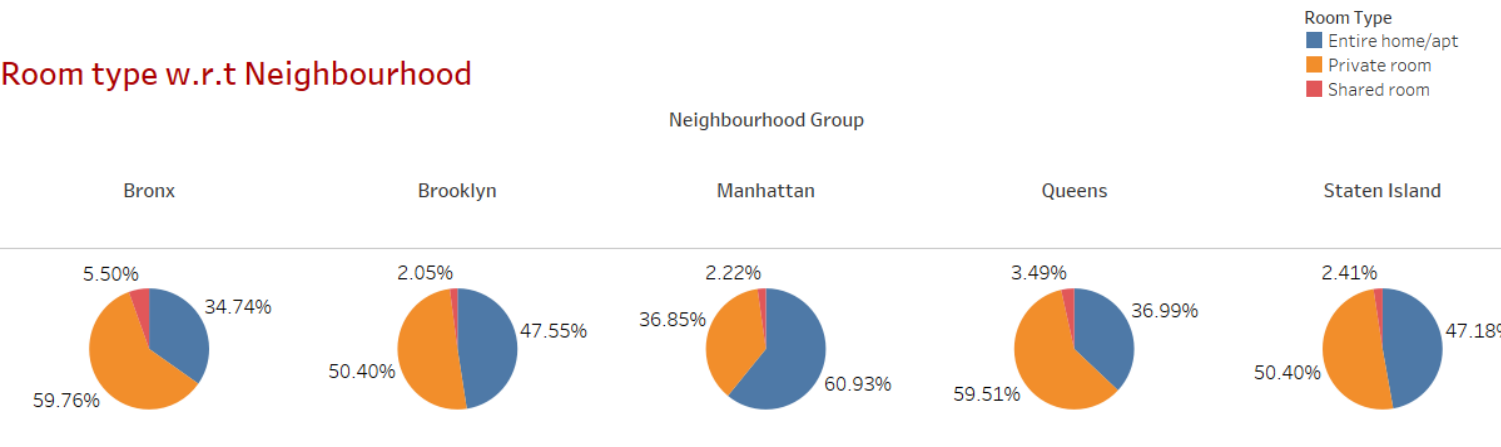
There are three types of rooms - Entire home/Apartment, Private room & shared room. Customers prefer private rooms or entire homes in comparison to shared rooms.

Also, we can see maximum reviews in listings for Manhattan & Brooklyn, implying that more bookings happen in these neighbourhoods. *(The higher number of customer reviews imply higher satisfaction)*

## Recommendation:

- Airbnb can concentrate on promoting shared rooms with targeted discounts to increase bookings.
- New acquisitions can be explored to acquire 'private rooms' in Manhattan and Brooklyn and 'entire homes' in Bronx and Queens.

## Room type w.r.t Neighbourhood

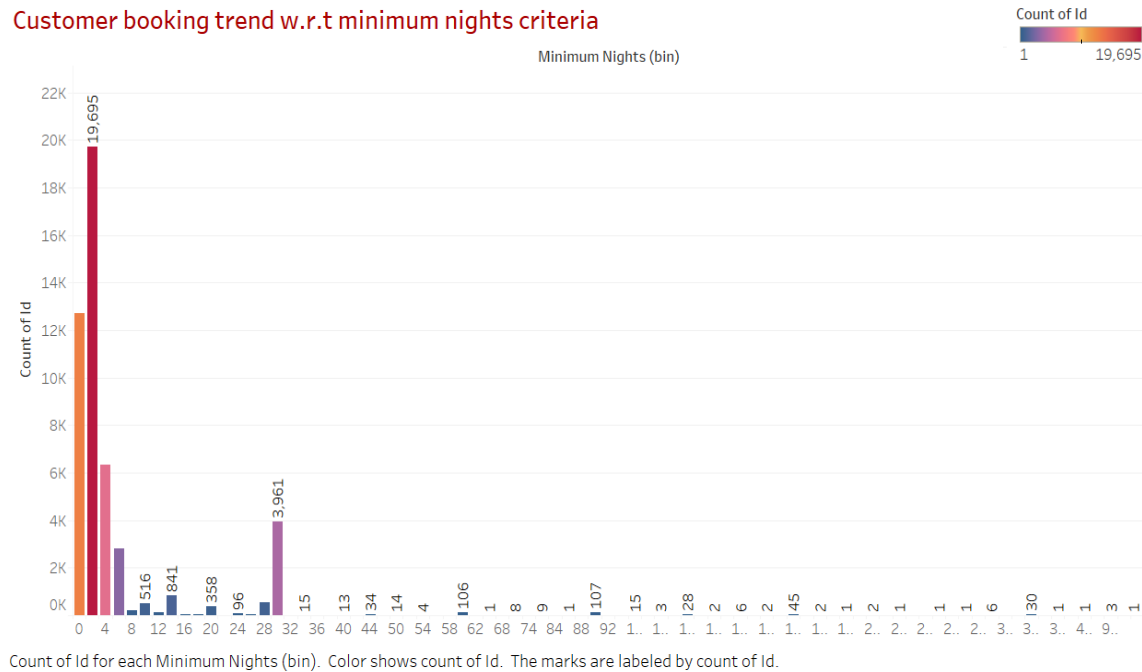


% of Total Count of Id broken down by Neighbourhood Group. Color shows details about Room Type. The marks are labeled by % of Total Count of Id.

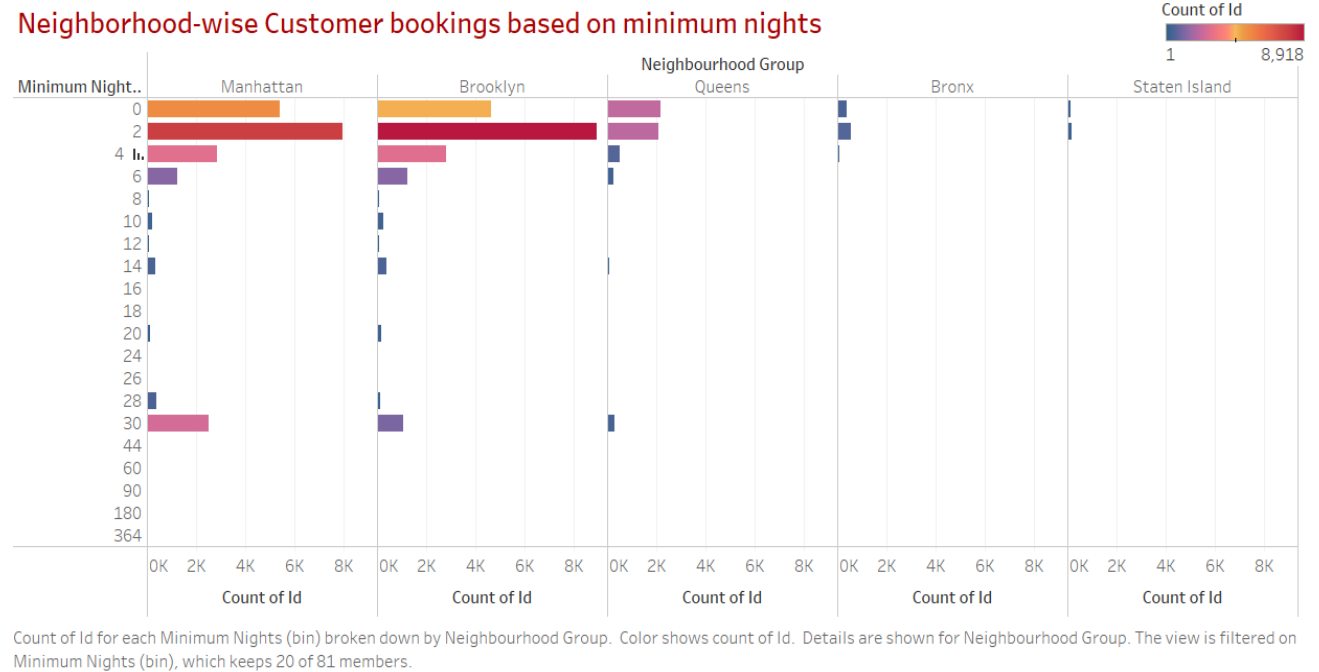


# Property demand based on minimum nights offered

Customer booking trend w.r.t minimum nights criteria



Neighborhood-wise Customer bookings based on minimum nights



📌 **The listings with Minimum nights 1-6 have the most number of bookings.** We can see a prominent spike in 30 days. This would be because customers would prefer renting out on a monthly basis. After 30 days, we can also see small spikes at 60 & 90 days, this can also be explained by the monthly rent taking trend.

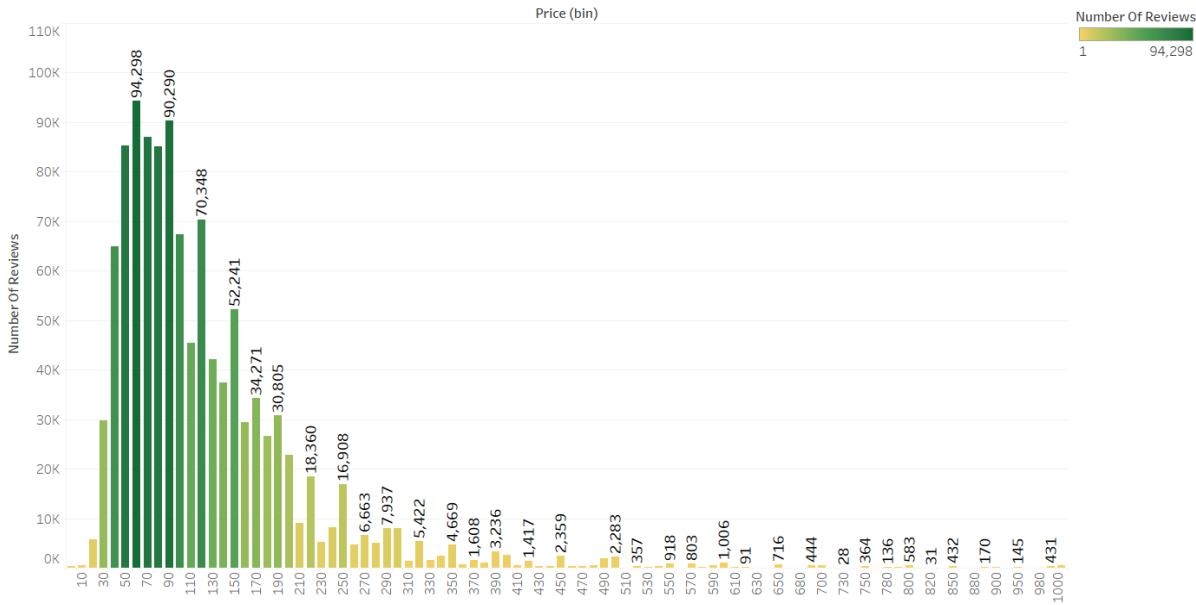
## Recommendation:

- 📌 More number of hosts & listings with monthly rental duration (30-60-90) can be acquired. We see a good potential in the 30-day rental window. Manhattan & Brooklyn have higher number of 30 day bookings compared to the others, these areas can be further targeted.
- 📌 Also, weekly or bi-weekly rentals can also be acquired as these can be used customers stranded in NYC for quarantine purposes.



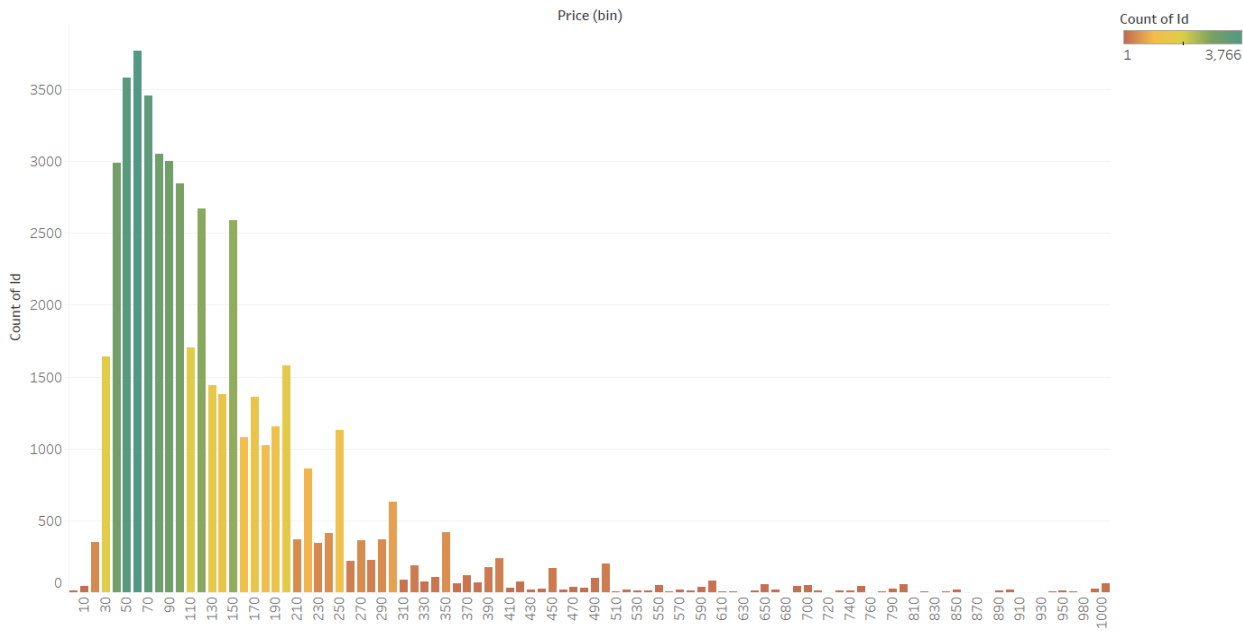
# Price range preferred by customers

Price variation w.r.t Number of reviews



Sum of Number Of Reviews for each Price (bin). The marks are labeled by sum of Number Of Reviews. The data is filtered on Reviews Per Month, which keeps non-Null values only.

Pricing range preferred by customers



Count of Id for each Price (bin). Color shows count of Id. The view is filtered on Price (bin), which keeps 98 of 188 members.

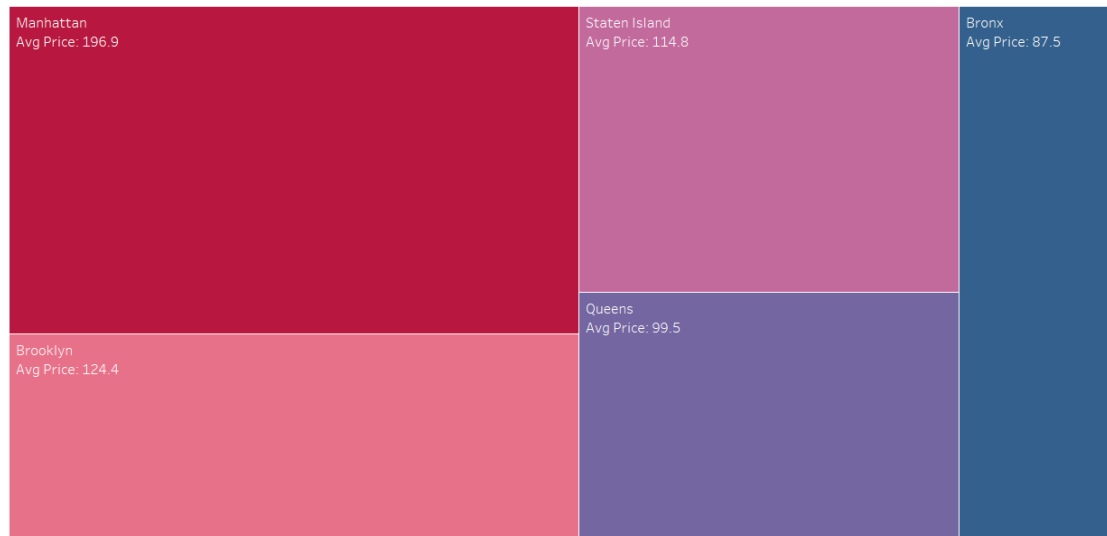
- ⌚ We have taken pricing preference based on two parameters – volume of bookings done in a price range and number of reviews in a price range.
  - ⌚ From both the graphs, the favorable price range is \$40 - \$160. This is the price range most preferred by most customers.
- Recommendation:**
- ⌚ New acquisitions and expansion can be done in the price range of \$40 - \$160 as it satisfies both parameters of; volume of customer traffic and customer satisfaction.



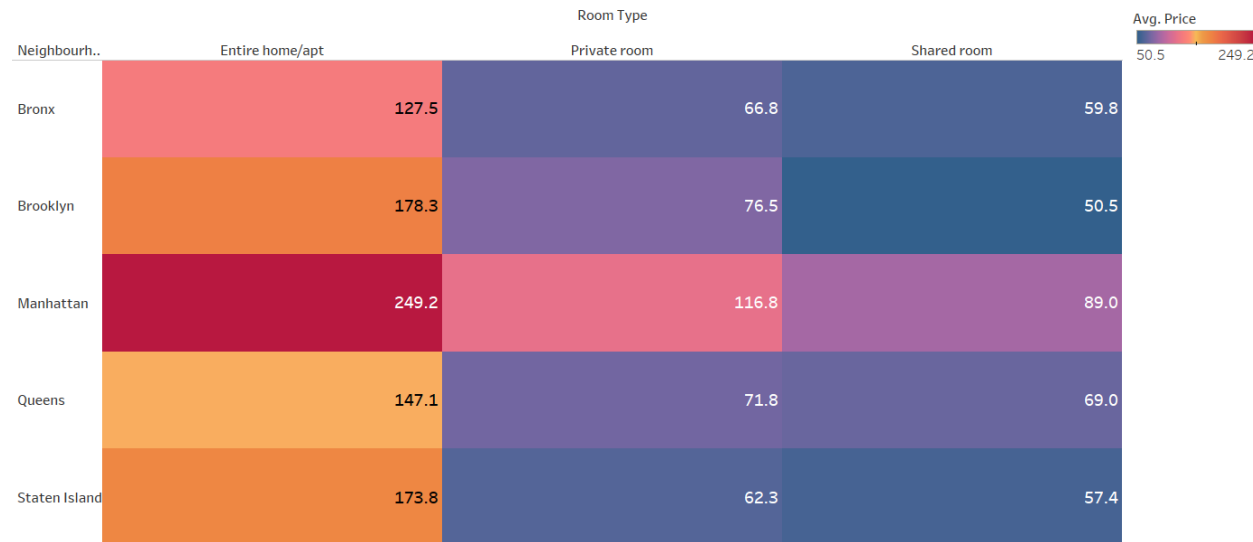


# Understanding Price variation w.r.t Room Type & Neighbourhood

Price variation w.r.t Room Type & Neighbourhood



Neighbourhood Group. Color shows average of Price. Size shows average of Price. The marks are labeled by Neighbourhood Group.



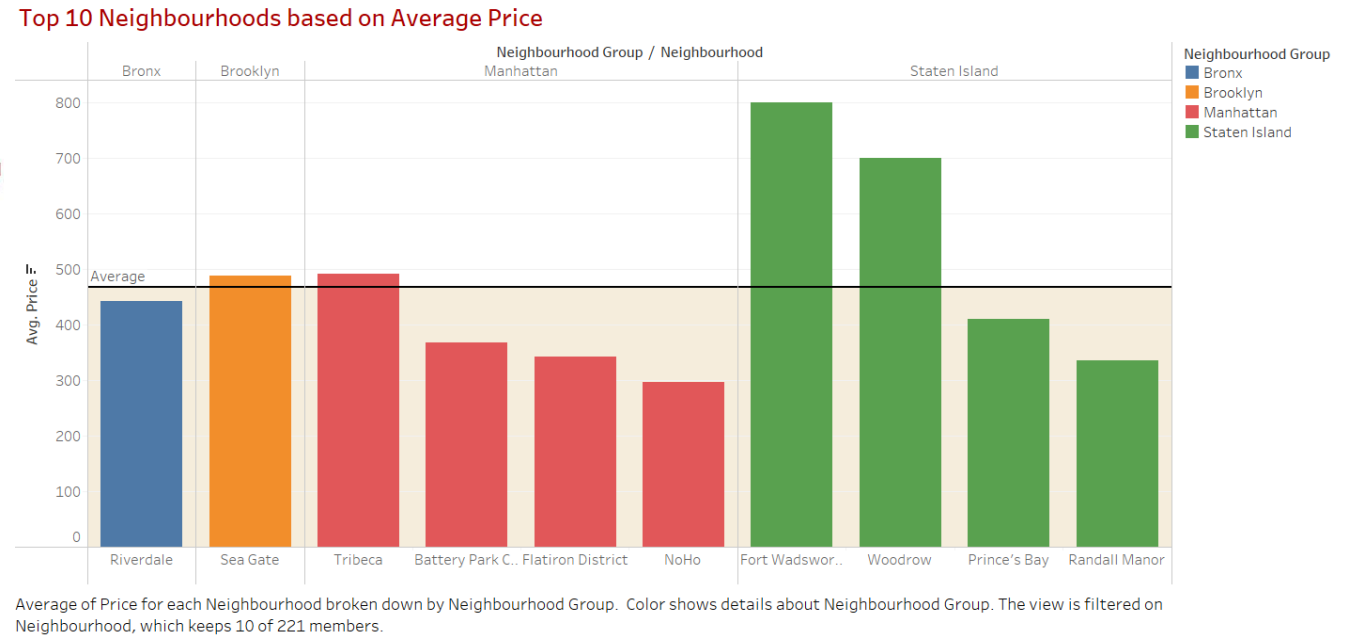
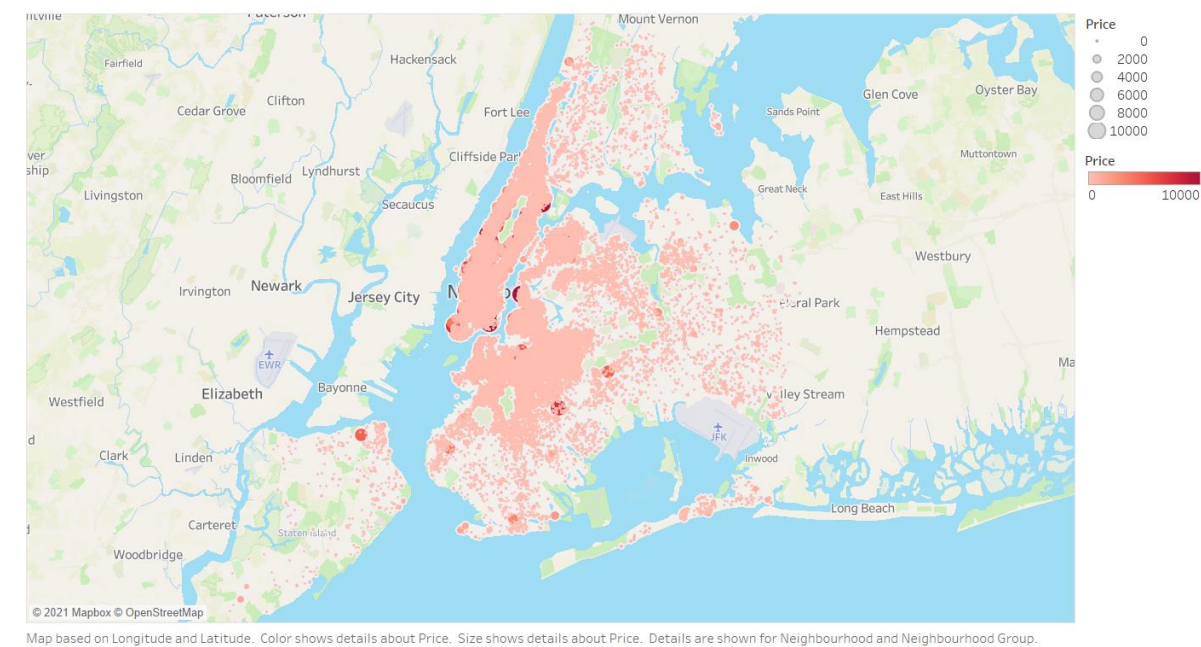
Average of Price broken down by Room Type vs. Neighbourhood Group. Color shows average of Price. The marks are labeled by average of Price.

- ⚠️ Manhanattan appears to have the highest average price of \$196.9. The 'Entire home/apt' room type in Manhattan is the most expensive at \$250, much higher than the overall average.
- ⚠️ 'Shared Room' type is the cheapest in Brooklyn.

## Recommendation:

- ⚠️ In line with the earlier recommendation, we observe that 'private rooms' of Manhattan & Brooklyn and 'entire homes' in Bronx and Queens fall in the favorable price range (\$40-\$160).
- ⚠️ Brooklyn has an average price of \$124. As there are already many listings available in Manhattan, Brooklyn can be considered for expansion.

# Understanding Price variation w.r.t Geography



- ⚠ The map displays the price variation, which appears to be distributed uniformly in the inland areas. We see spike in prices in coastal cities, owing to better view from stays and easy ferry reachability.
- ⚠ The bar graph confirm our inference, as we observe that the top 10 neighbourhoods according to price are those that are situated near the sea or are next to important institutions/companies/landmarks.

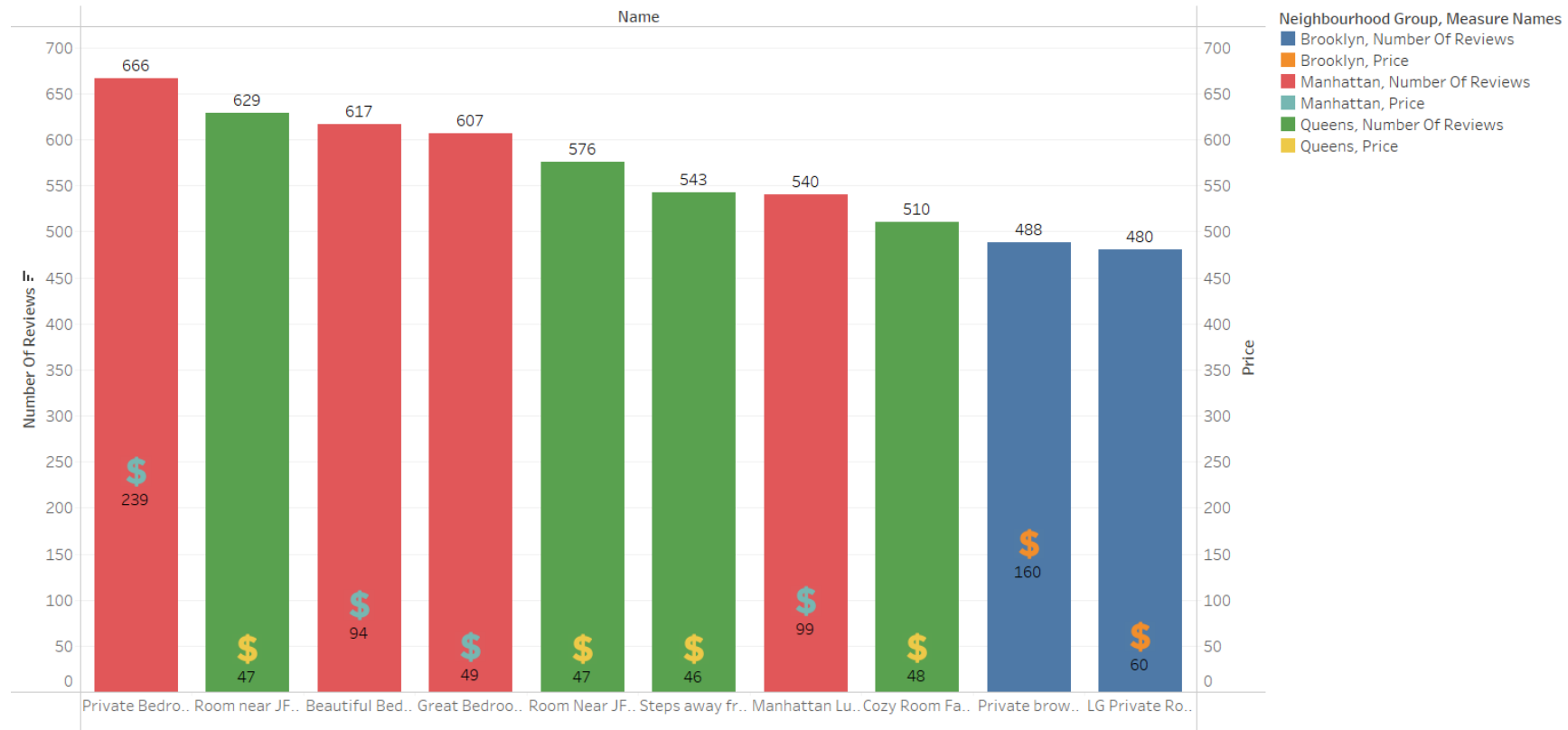
## Recommendation:

- ⚠ Increasing acquisitions and new properties in coastal regions can increase customer bookings.



# Top reviewed properties and their price range

Top 10 Listings based on number of reviews along with their pricing



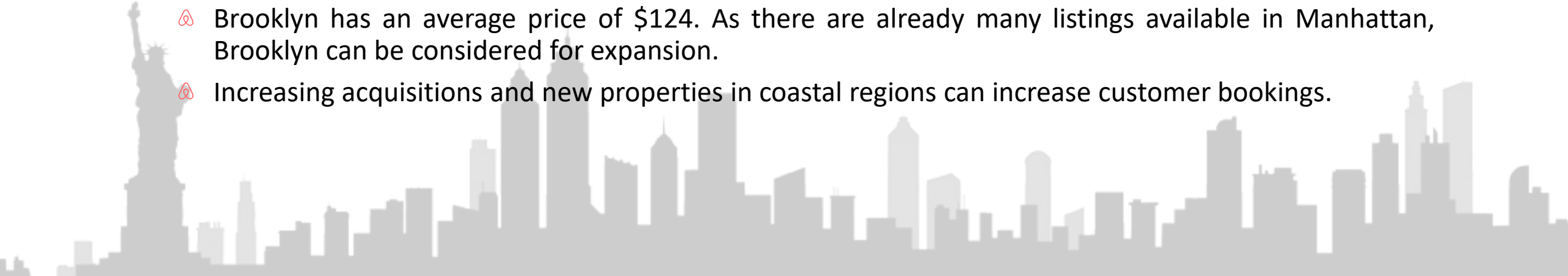
- ⌘ Manhattan, Brooklyn and Queens have the most liked properties (most reviewed). Most of the properties also fall in our estimated favourable range of \$40-\$160.
- ⌘ The most reviewed property “Private Bedroom in Manhattan”, though it appears to be steeply priced still has managed to get the maximum number of reviews making it the most favorable property in NYC.



# Recommendations

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- 📍 Promotion of shared rooms with targeted discounts to increase bookings.
- 📍 More number of hosts & listings with monthly rental duration (30-60-90) can be acquired. We see a good potential in the 30-day rental window. Manhattan & Brooklyn have higher number of 30 day bookings compared to the others, these areas can be further targeted.
- 📍 Weekly or bi-weekly rentals can also be acquired as these can be used customers stranded in NYC for quarantine purposes.
- 📍 New acquisitions and expansion can be done in the price range of \$40 - \$160 as it satisfies both parameters of; volume of customer traffic and customer satisfaction.
- 📍 New acquisitions can be explored to acquire 'private rooms' in Manhattan and Brooklyn and 'entire homes' in Bronx and Queens as they fall in the favorable price range (\$40-\$160).
- 📍 Brooklyn has an average price of \$124. As there are already many listings available in Manhattan, Brooklyn can be considered for expansion.
- 📍 Increasing acquisitions and new properties in coastal regions can increase customer bookings.




# Appendix

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## About the data


 The data contains the bookings made through Airbnb in NYC area.

 It contains the following columns:

 Id – Listing ID


 Name – Name of Listing


 Host\_id – host ID

 Host\_name – Name of Host

 Neighbourhood\_group - Location

 Neighbourhood - Area


 Latitude & Longitude – Map co-ordinates


 Room\_type – Listing space type


 Price – Price of listing


 Minimum\_nights – Amount of nights minimum

 Number\_of\_reviews – number of reviews

 Last\_review – Lastest review

 Reviews\_per\_month – number of reviews per month

 Calculated\_host\_listings\_count – no. of listings per host








 Availability\_365 – no. of days when listing is available for booking




# Appendix

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## Methodology

-  The analysis and visualizations were done using Tableau considering various parameters.
-  The analysis was done keeping in mind the business side of the project. The important factors taken into consideration were customer booking volume and customer preference.
-  The first half of the presentation focused on customer preference. The second half compared various parameters of customer preference with respect to price.
-  The following parameters were considered –
  -  Customer experience : Neighbourhood, Room type & minimum nights offered
  -  Price variation : Volume of customer booking, Room type, Neighbourhood, Number of reviews & Geography.
-  Recommendations have been made keeping in mind the above parameters.

## Assumptions

-  As we are not aware about the nature of reviews, we have assumed that the properties which received higher number of reviews have a better customer liking.

