

STORY TELLING CASE STUDY

NEWYORK AIRBNBS

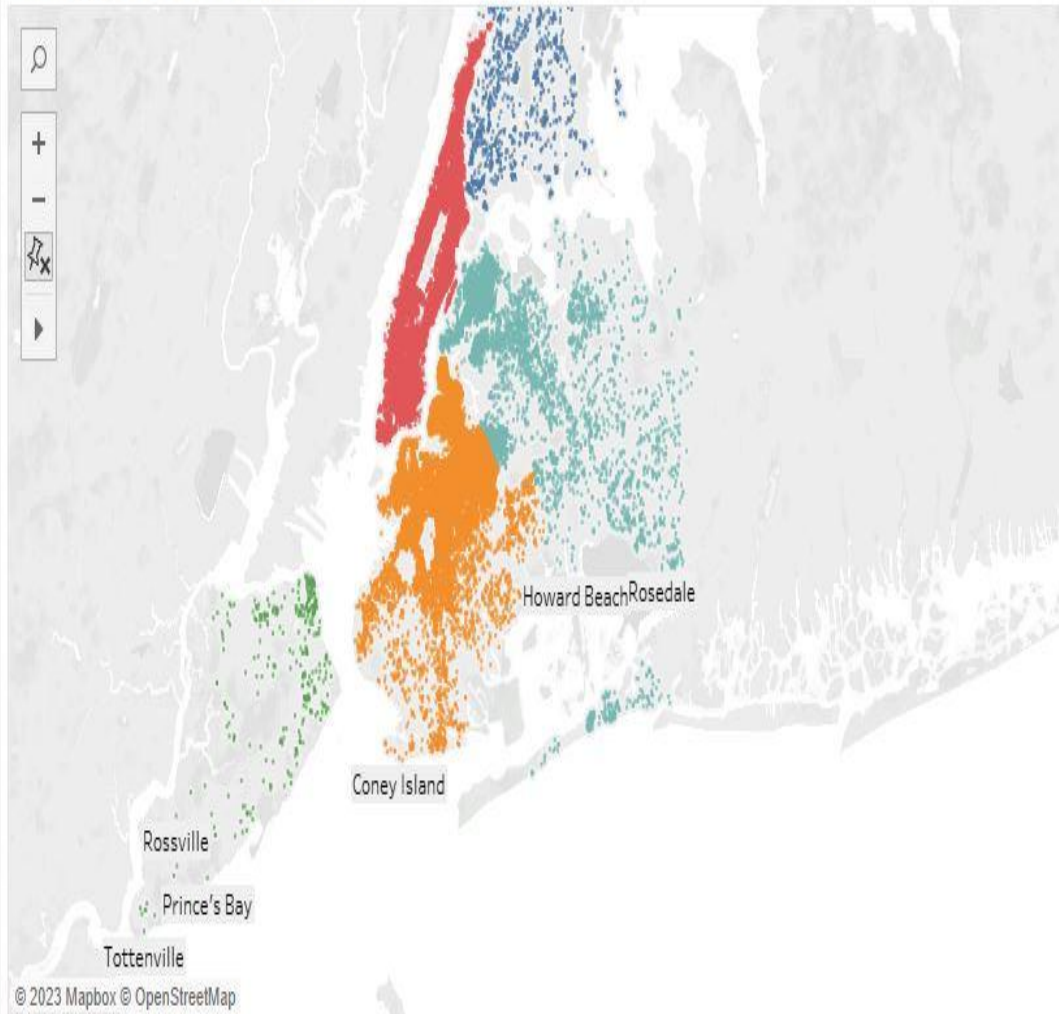
Problem background

- **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.**
- **People have now started travelling again and Airbnb is aiming to bring up the business again and e ready to provide services to customers.**

Objectives

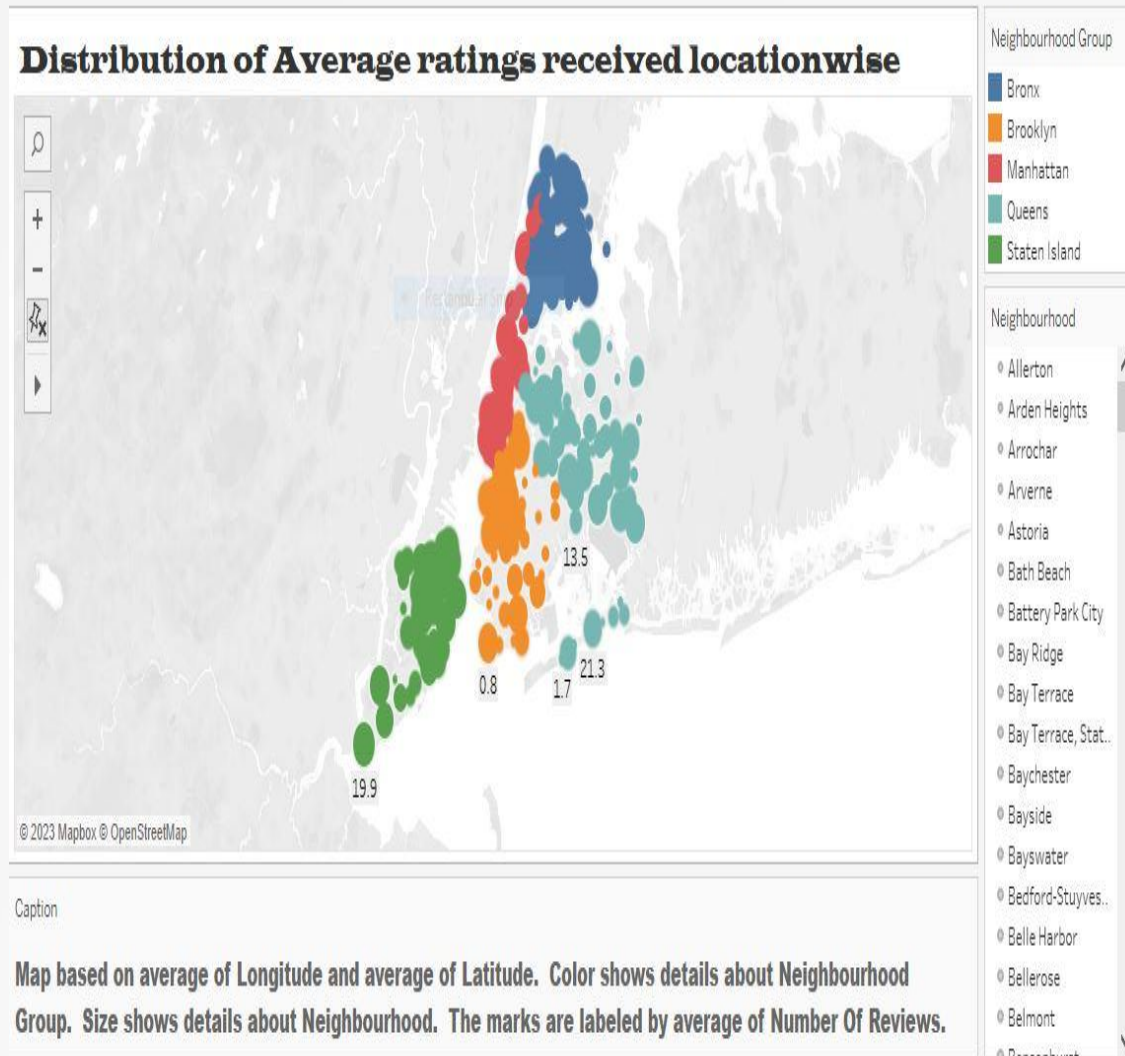
- **To understand some important insights based on various attributes in the dataset so as to increase the revenue**
- **Enhance our understanding of property and host acquisitions, operations, and customer preferences.**
- **Provide early recommendations to our marketing and operations teams**

Distribution of location in different neighbourhood



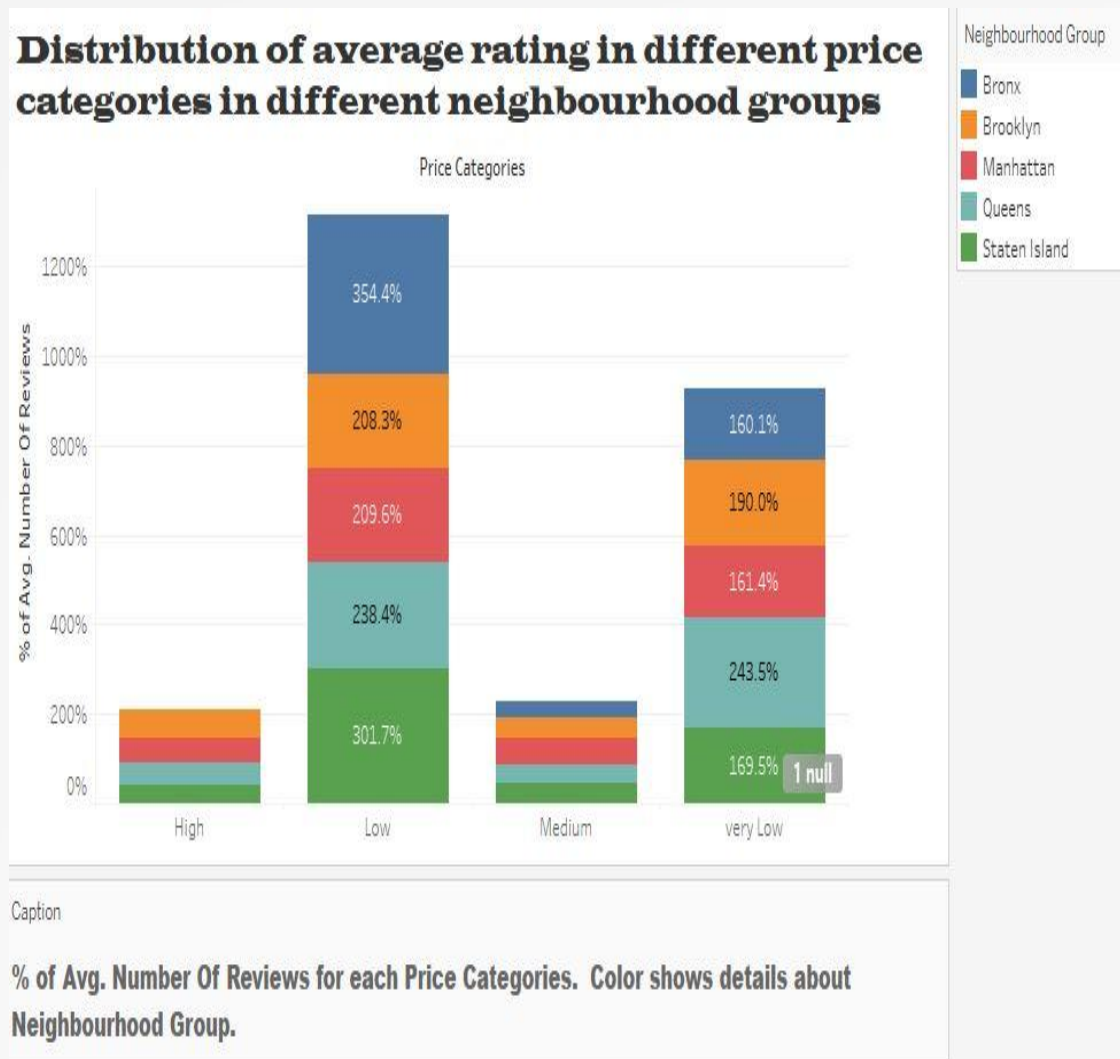
- ☐ **The distribution of locations clearly indicates density.**
- ☐ **We see that, Airbnb has good presence in Manhattan, Brooklyn & Queens.**
- ☐ **Listings are maximum in Manhattan & Brooklyn owing to the high population density and it being the financial and tourism hub of NYC. Staten Island has the least number of listings.**

Distribution of Average reviews recieved by area



- **The distribution indicates average ratings across different neighbourhood groups**
- **The higher number of customer reviews imply higher satisfaction in these localities.**

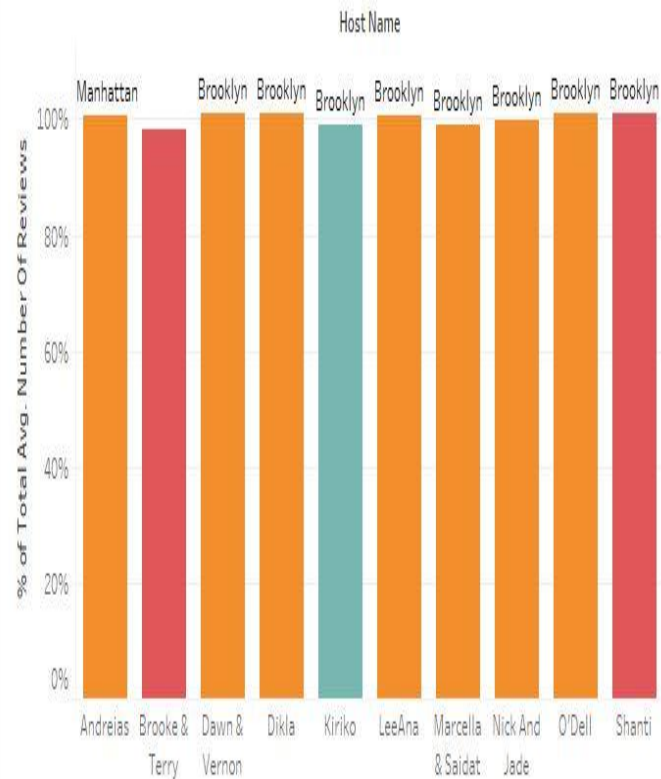
Price Categories Vs Average rating Vs Neighbourhood groups



- **Low Price category has the highest average ratings**
- **Neighbourhood group Bronx has the highest share followed by Queens**

Low Performing of Hosts and localities

Top ten performing hosts of different neighbourhood with respect to price category



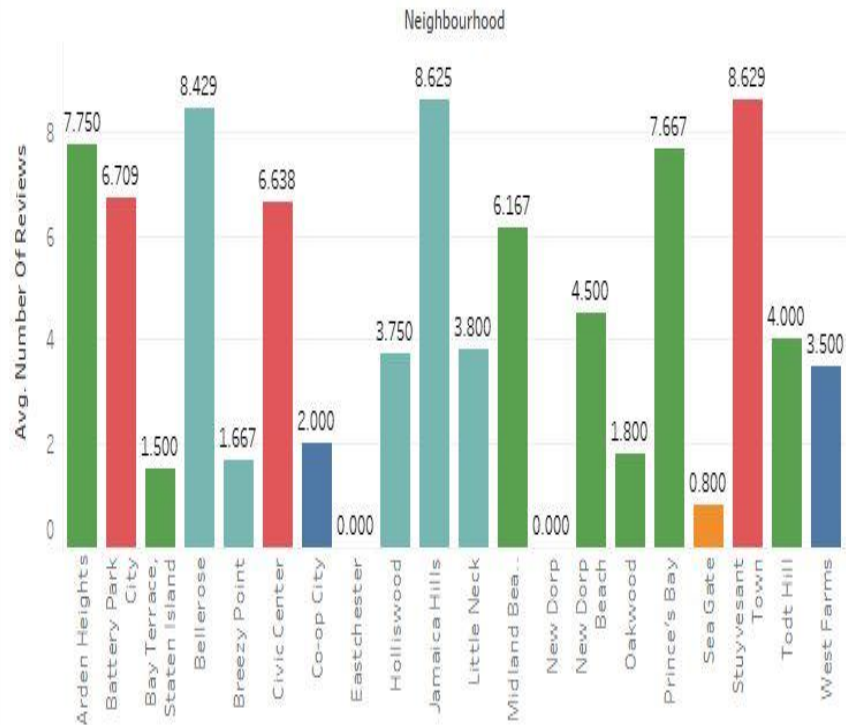
Caption

% of Total Avg. Number Of Reviews for each Host Name. Color shows details about Price Categories. The marks are labeled by Neighbourhood Group. The view is filtered on Host Name, which keeps 10 of 11,047 members.

- **These are the ten hosts falling under low price category but high average ratings**
- **Brooklyn bags maximum number of such hosts with low price category and having the high avg rating.**

Least performing locations

Least performing 20 locations in their respective neighbourhood

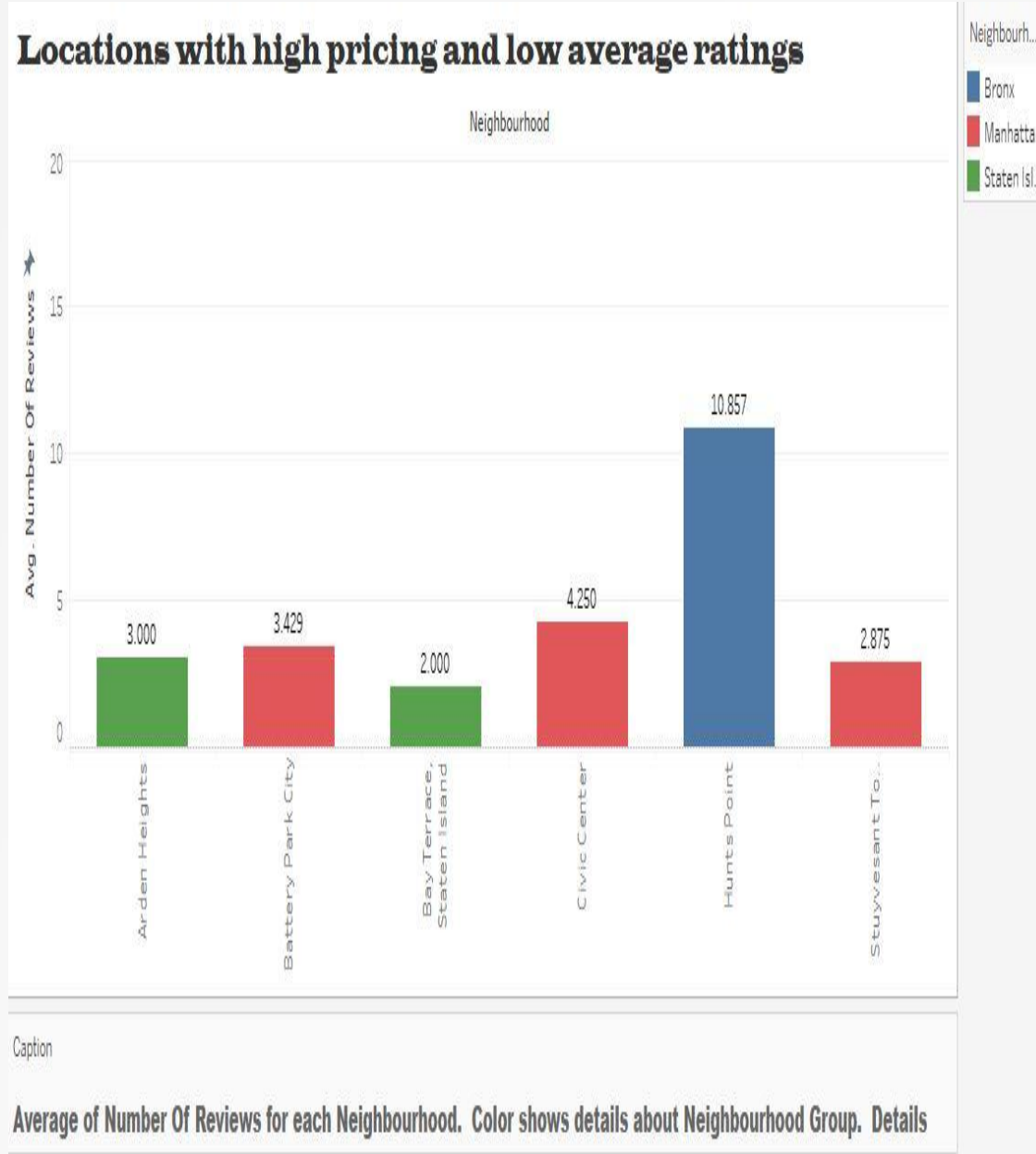


Caption

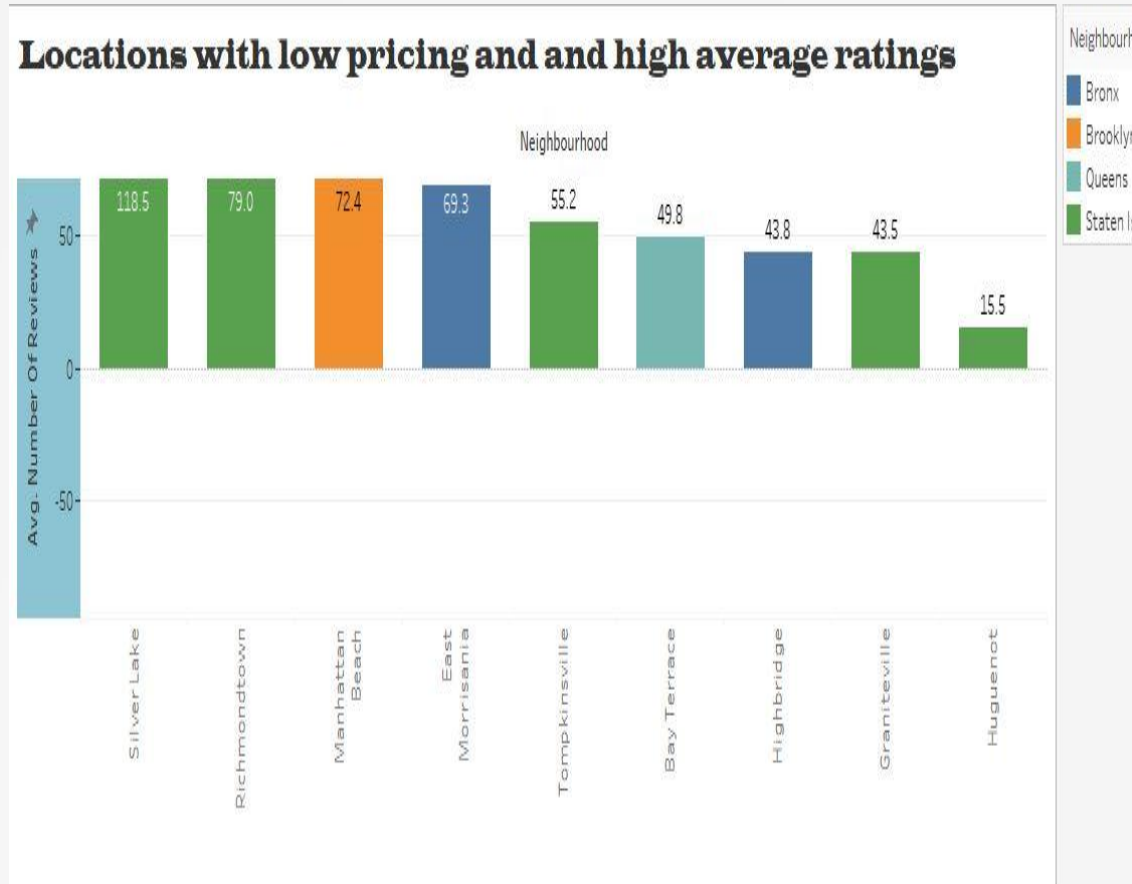
Average of Number Of Reviews for each Neighbourhood. Color shows details about Neighbourhood Group. The view is filtered on Neighbourhood, which keeps 20 of 219 members.

- **These locations are 20 least performing in their respective neighbourhood.**
- **These locations should be considered for renovations or upgraded for better reviews**

Pricing Vs Average reviews received



- **Hunts point from Bronx neighbourhood has the least avg rating with high price**
- **These locations are highly priced however not able to attract good reviews.**
- **Over pricing may be the reason behind the lesser ratings**



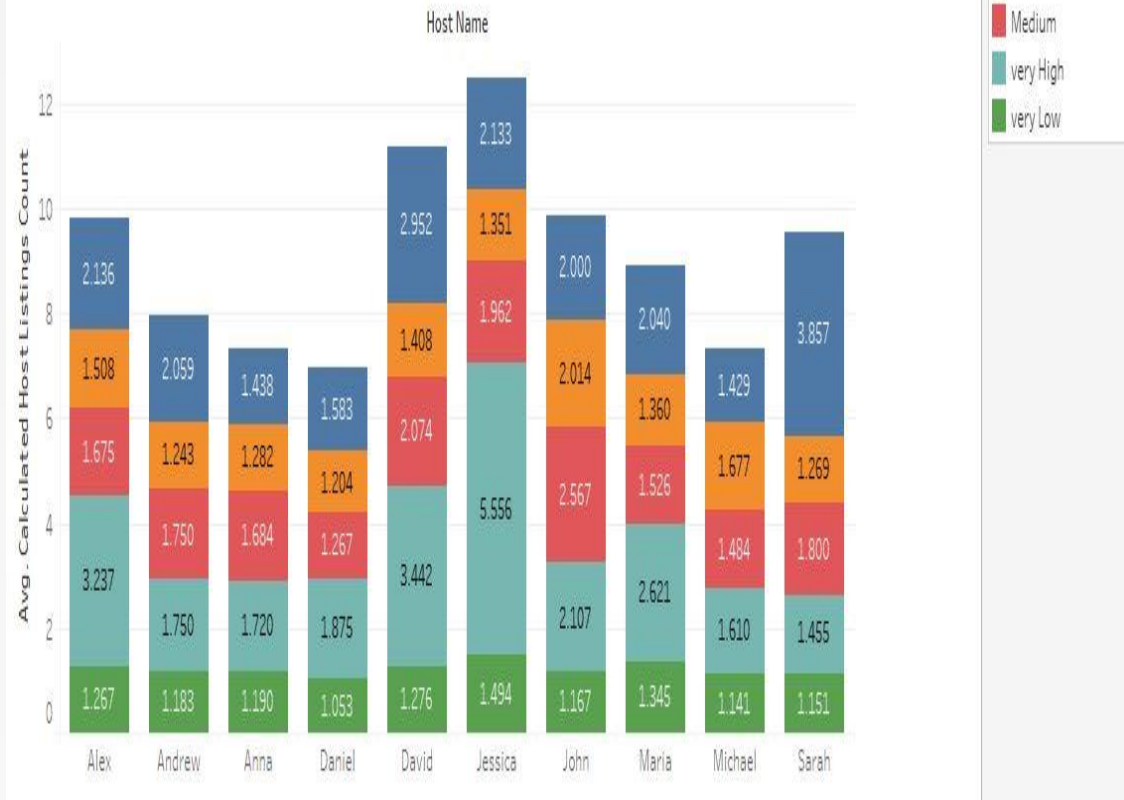
Caption

Average of Number Of Reviews for each Neighbourhood. Color shows details about Neighbourhood Group. Details are shown for Price Categories. The view is filtered on Neighbourhood and Price Categories. The Neighbourhood filter keeps 30 of 219 members. The Price Categories filter keeps High.

- **Silver lake and Richmondtown from Staten Island have the higher avg ratings despite falling into lower price category.**

Host listing count and their availability in respective neighbourhood

Top ten hosts with highest listings and availability categories

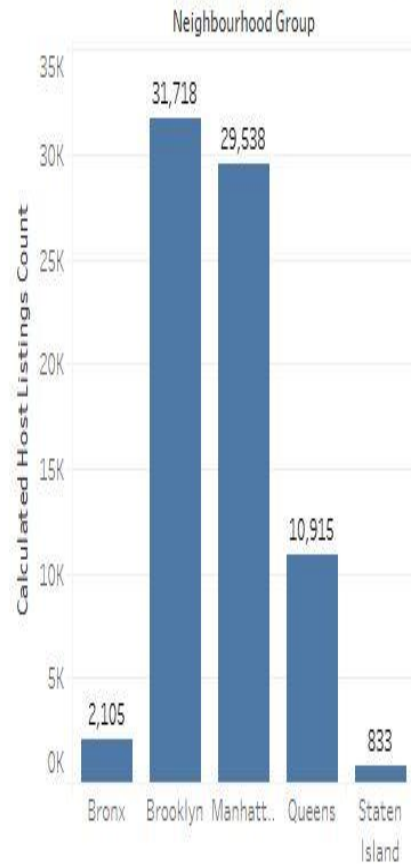


Caption

Average of Calculated Host Listings Count for each Host Name. Color shows details about Availability 365 Categories. The view is filtered on Host Name, which keeps 10 of 11,047 members.

- Jessica and David holds the highest listing as well as availability.

Calculated host listing Vs Neighbourhood groups



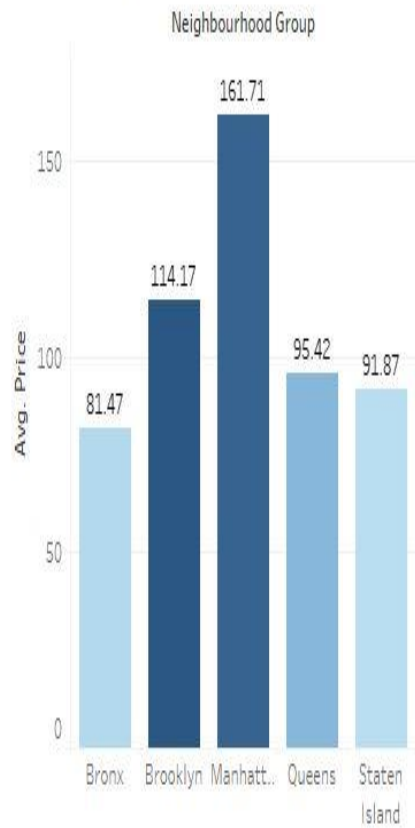
Caption

Sum of Calculated Host Listings Count for each Neighbourhood Group.

- **Brooklyn and Manhattan holds the highest host listings in the neighbourhood category.**
- **The other two neighbourhood holds lowest number of listings.**

Neighbourhood average price and popular neighbour hood

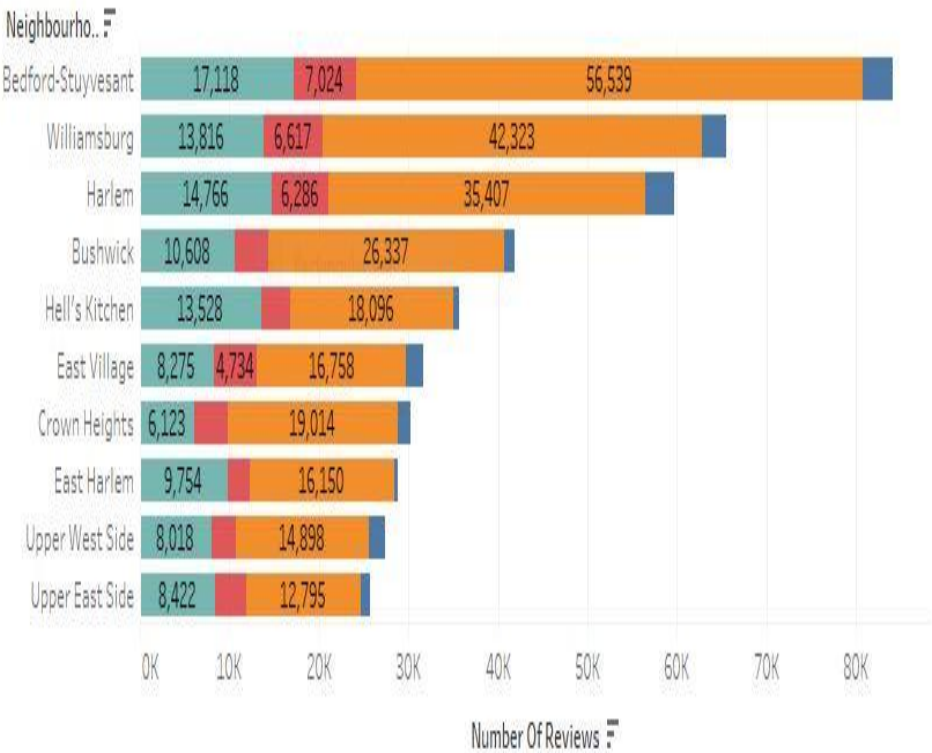
Average price of Neighbourhood group



SUM(Number Of Reviews)

10,083 3,84,954

Popular neighbourhood



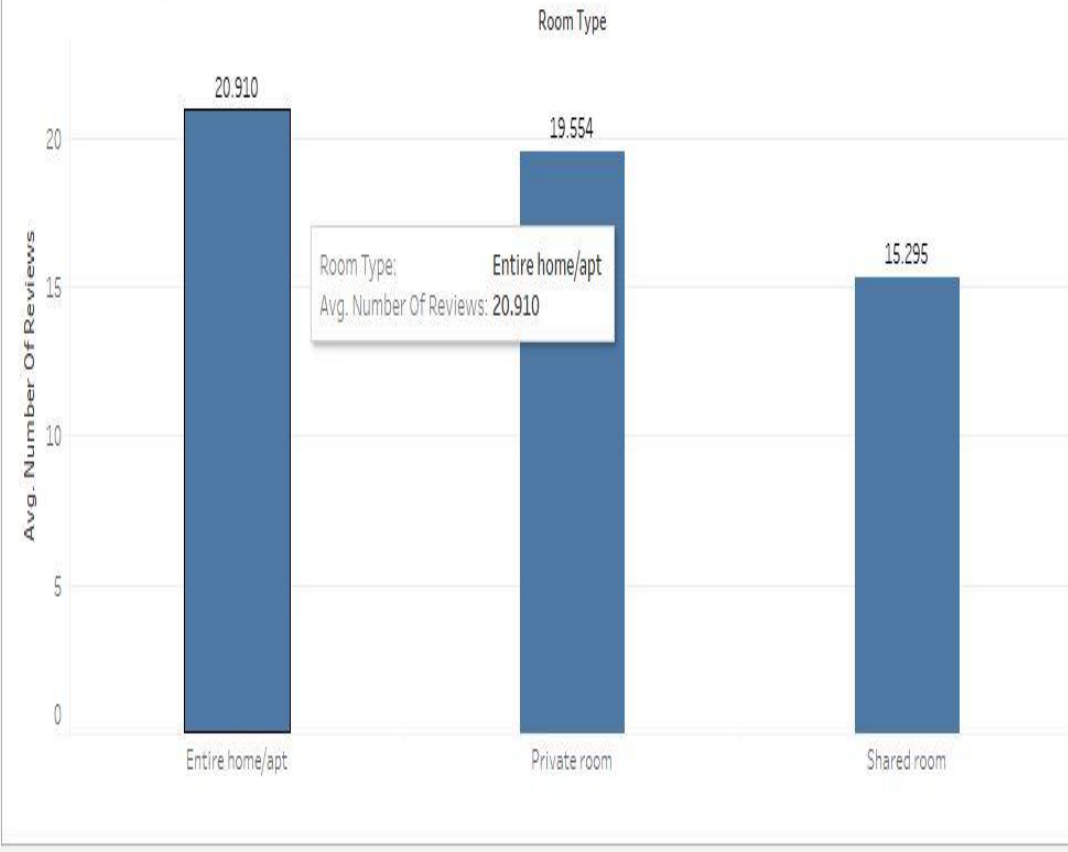
Price Categories

- High
- Low
- Medium
- very Low

Caption

Average of Price for each Neighbourhood Group. Color shows sum of Number Of Reviews.

Room type VS Average ratings

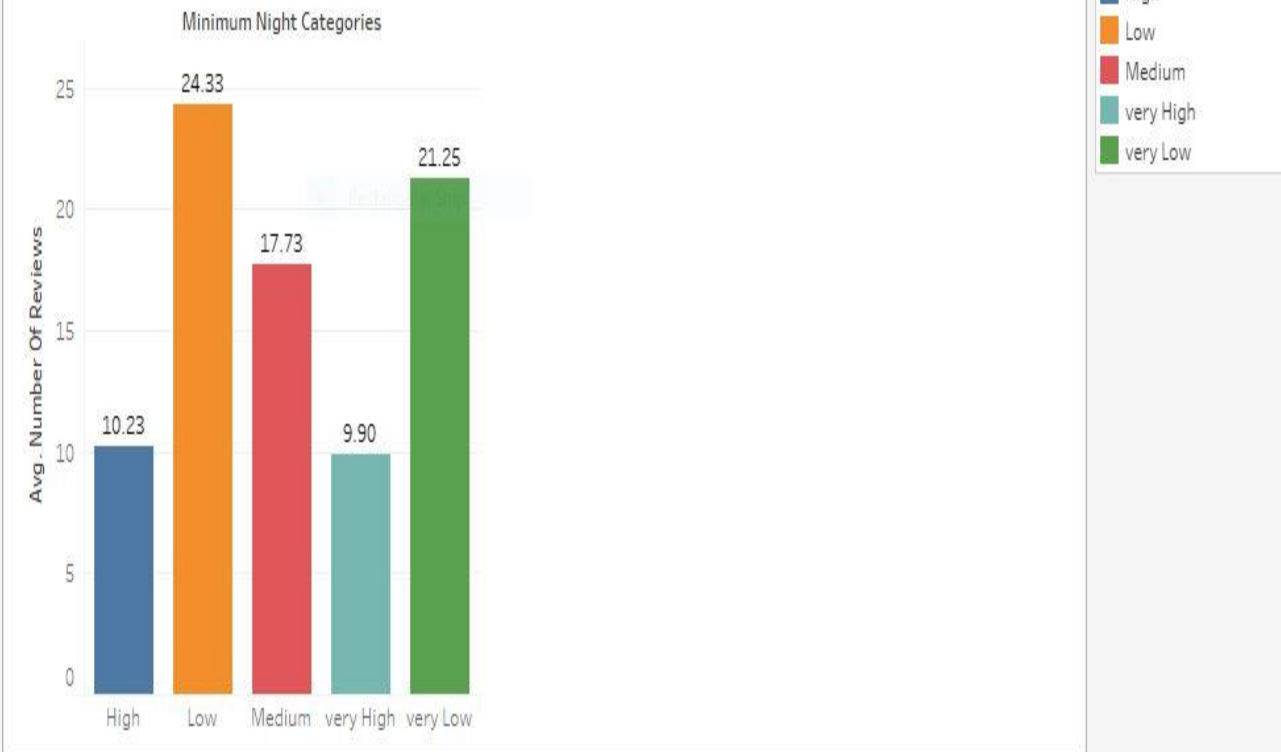


Caption

Average of Number Of Reviews for each Room Type.

- **Entire Room / Apartment and Private room holds the good avg reviews**
- **Shared room from Room Type Segment is not performing well.**
- **Shared room needs to be checked for low reviews**

Minimum night category Vs ratings



Caption

Average of Number Of Reviews for each Minimum Night Categories. Color shows details about Minimum Night Categories.

- **Very low and Low minimum nights categories have good reviews compared to the remaining categories.**
- **Minimum nights threshold should be on the lower side to make properties more customer-oriented**

Availability_365_Categories vs Price_Categories vs Reviews per month

- **If the combination of availability and price is very high, reviews_per_month will be low on average.**
- **Very high availability and very low price are likely to get more reviews.**

```
In [44]: pd.DataFrame(abnyc.groupby(['availability_365_categories', 'price_categories']).reviews_per_month.mean())
```

```
Out[44]:
```

		reviews_per_month
availability_365_categories	price_categories	
High	High	0.618385
	Low	2.011989
	Medium	0.898256
	very Low	2.477938
Low	High	0.444719
	Low	1.545853
	Medium	0.696910
	very Low	2.233417
Medium	High	0.490754
	Low	1.748611
	Medium	0.968775
	very Low	2.169168
very High	High	0.359710
	Low	1.262194
	Medium	0.556535
	very Low	1.599074
very Low	High	0.201468
	Low	0.401511
	Medium	0.179748
	very Low	0.400113

Recommendations and conclusions

- **Low Pricing category has recieved better avg reviews, Moderate price or reduction in price may be considered to attract more customers.**
- **identified Least performing locations may be looked upon and initiate necessary improvements**
- **Shared rooms is a vital area lagging behind, these to be checked upon.**
- **The cumulative contribution of all hosts is better than a few hosts doing well.**
- **More than 80 % of the listing are Manhattan and Brooklyn neighborhood group.**
- **Minimum nights threshold should be on the lower side to make properties more customer-oriented.**
- **Data collection team should collect data about review scores so that it can strengthen the later analysis.**
- **A clustering machine learning model to identify groups of similar objects in datasets with two or more variable quantities can be made.**