

Storytelling Case Study : Airbnb, NYC

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AGENDA



Objective

Data Life cycle

Analysis methods

Recommendations

Appendix:

- Data sources
- Data methodology
- Data model assumption



OBJECTIVE



Identify booking patterns, price preferences and demand across neighborhoods.

Provide data-driven insights to improve pricing and expand in high-demand areas.

Evaluate host contributions and guest satisfaction to enhance overall experience.

DATA LIFE CYCLE

In the initial phase, data is collected and integrated into multiple environments.

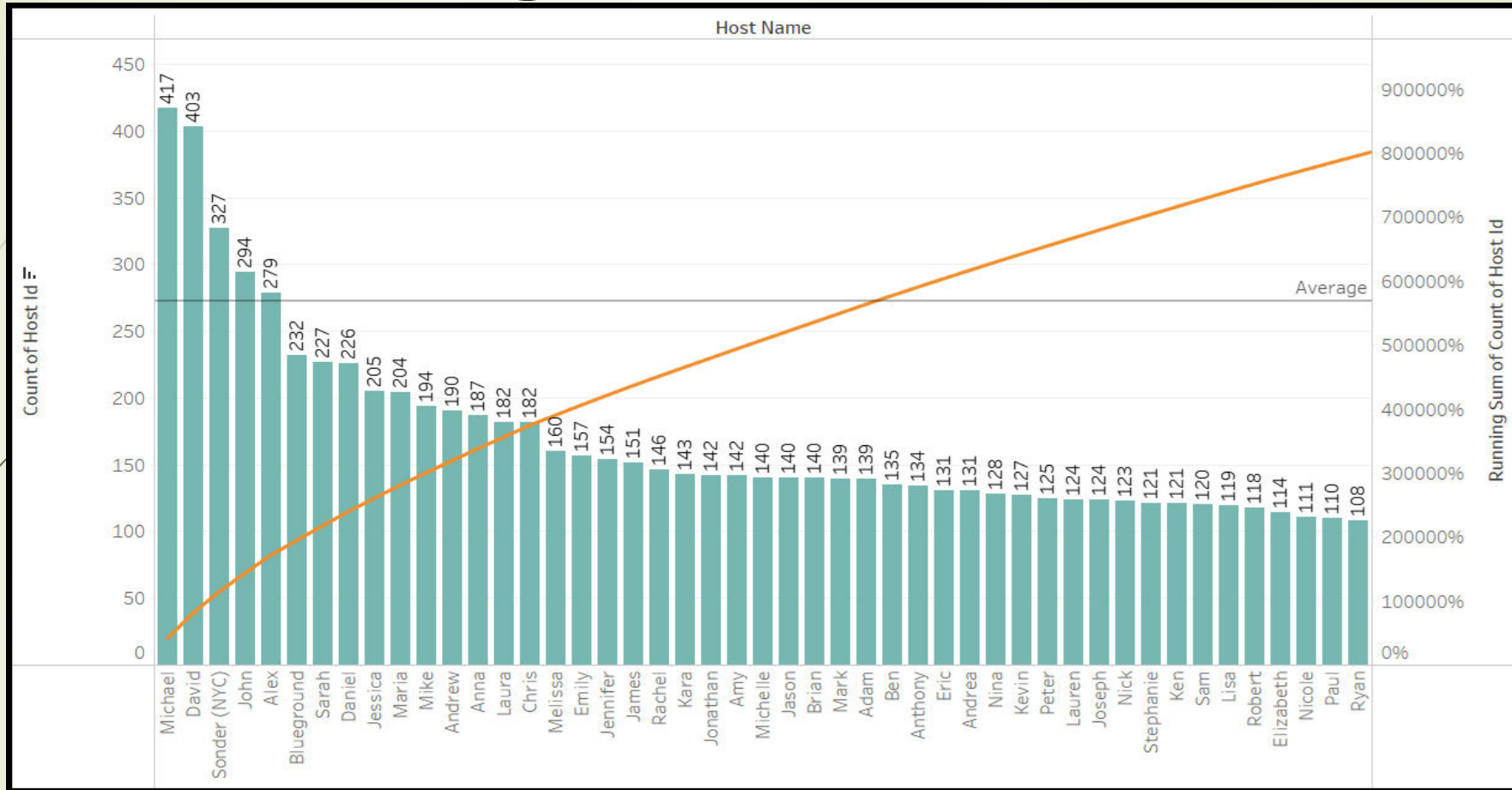


Once the data is cleaned, EDA is conducted and additional features are created.

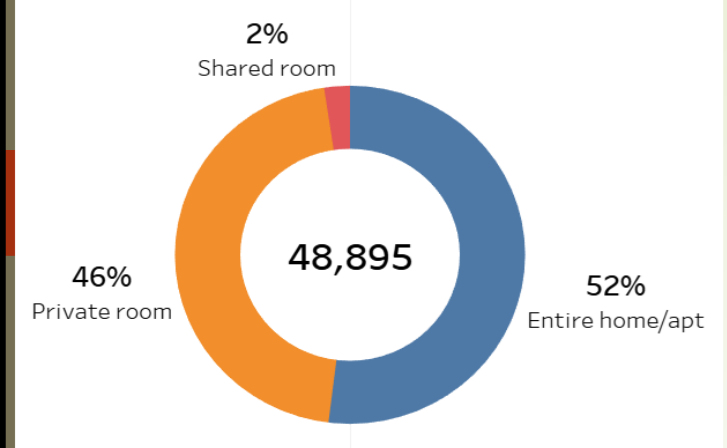


Data-driven insights are generated through various analytical methods.

Evaluating Host Performance

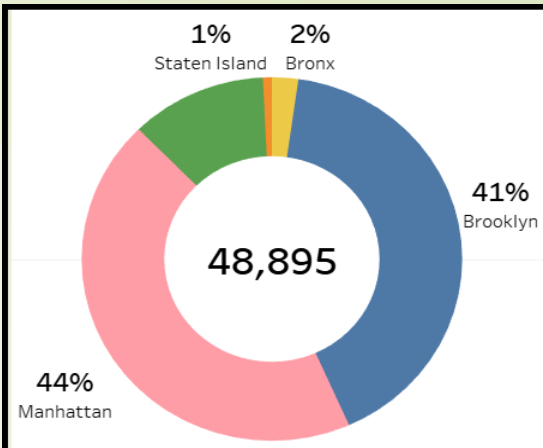


- A small percentage of hosts contribute to the majority of listings, with the top few hosts (Michael, David, Sonder NYC, etc.) having significantly higher listing counts.
- Listings are heavily concentrated among top hosts, with minimal contribution from smaller hosts.

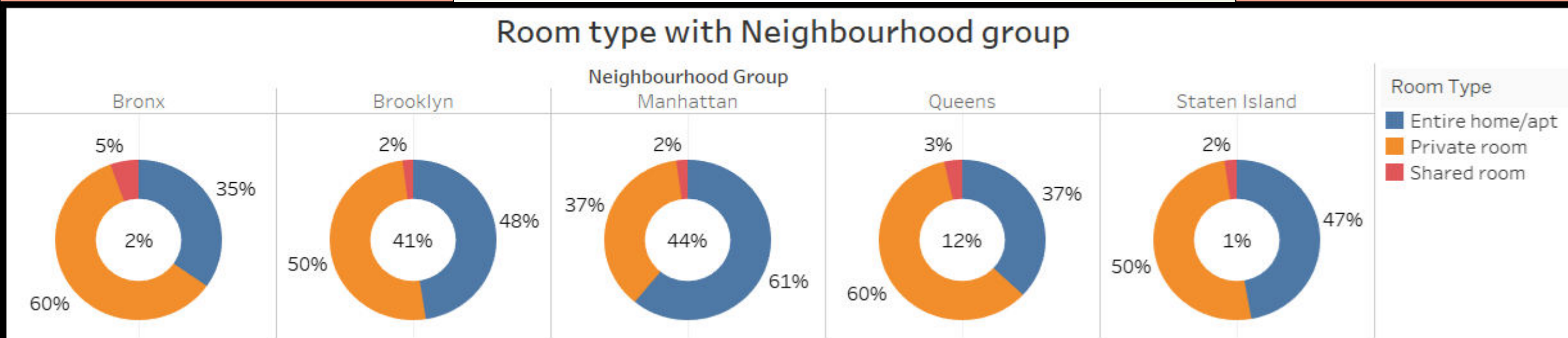


Overall, customers tend to choose **Private rooms (46%)**, **Entire homes (52%)** far more often than **Shared rooms (2%)**.

Room Type with respect to Neighbourhood group



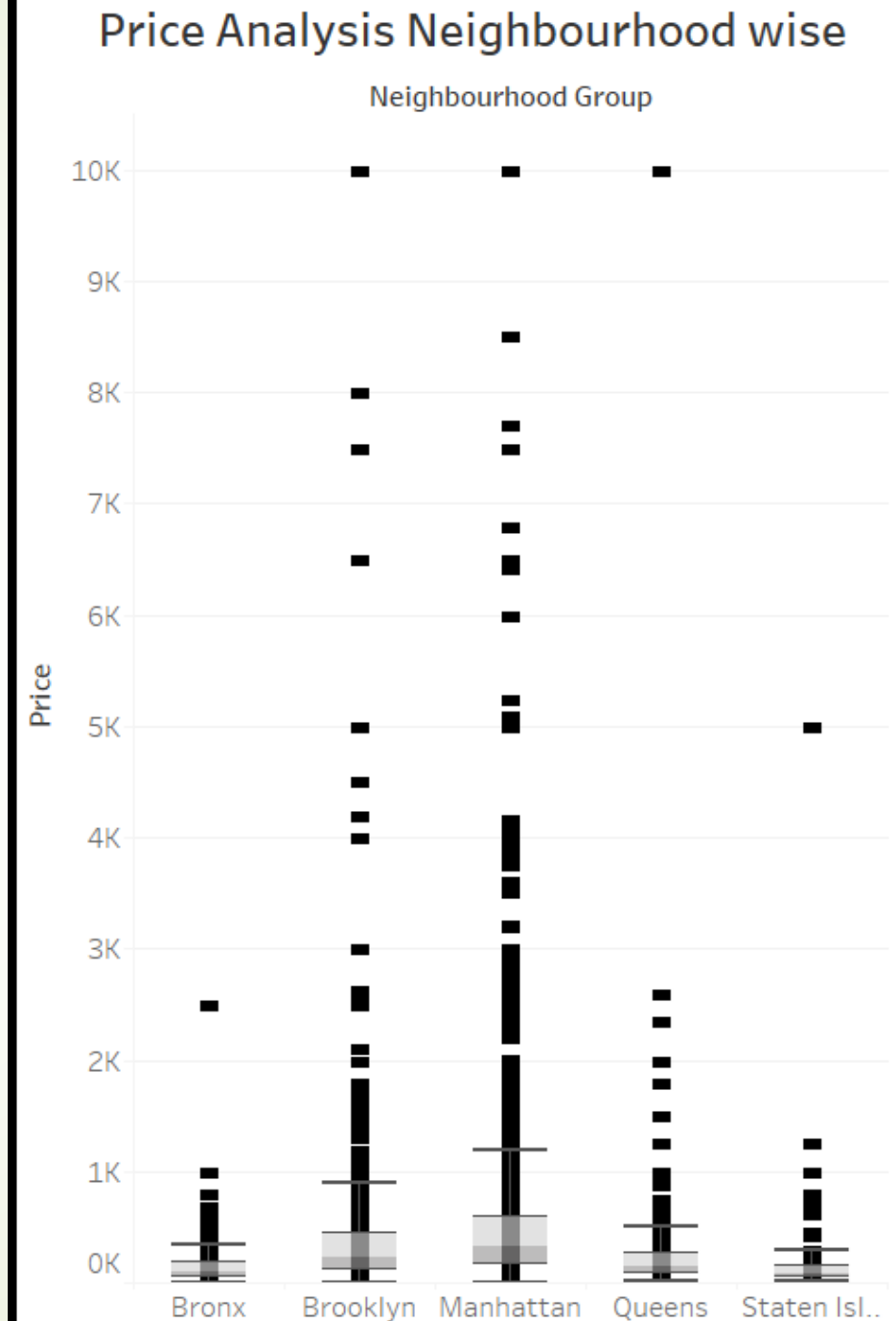
Manhattan and **Brooklyn** account for **85%** of total listings & **Staten Island** has the lowest contribution.



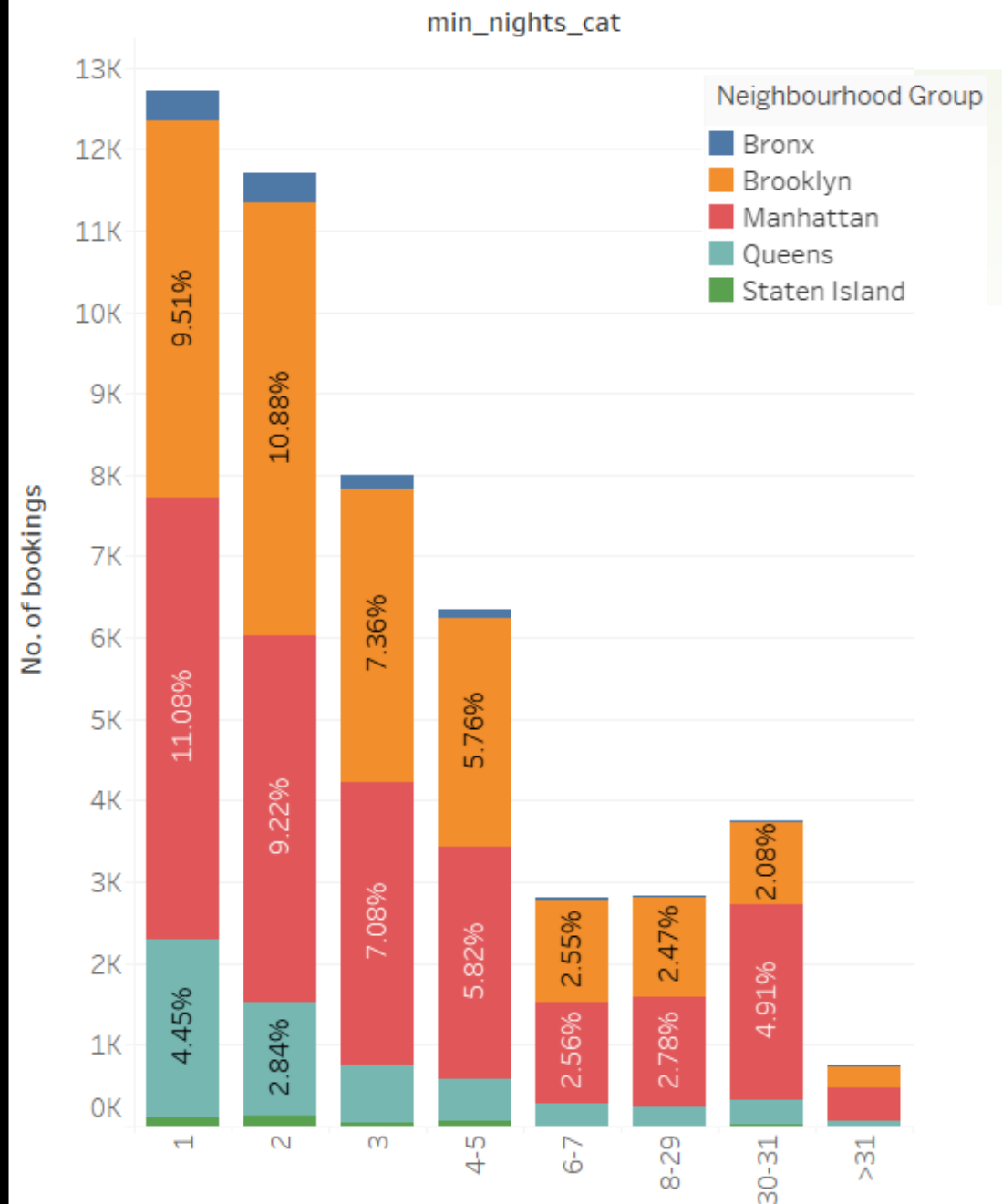
- Queens** and **Bronx** each make up **60%** of **Private room** listings significantly higher than the combined **46%**. On the other hand, **Manhattan** holds **61%** of **Entire home/apt** listings surpassing the combined total of **52%**.
- Shared rooms** make up less than **5%** of listings across all **neighbourhoods** and its combined contribution is only **2%**.

Price Analysis Neighbourhood wise

- The majority of the **outliers** in the Price column are found in **Brooklyn** and **Manhattan**.
- Moreover, **Manhattan** offers the most diverse range of prices for the listings.
- The **Bronx** is the most affordable of them all.
- The median price across all neighbourhood groups ranges from **\$80** to **\$300**.
- The price distribution was highly positively skewed causing the median to be very close to the lower quartile, with a few outliers visible in the boxplot below.



Customer booking wrt min nights

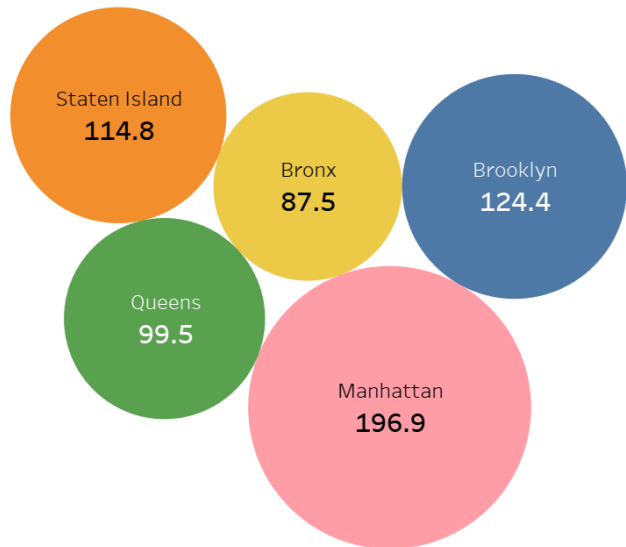


Customer bookings with respect to Minimum nights

- Listings with a minimum stay of 1-5 nights have the highest number of bookings. **There's a noticeable peak at 30 days**, likely due to customers opting for **monthly rentals**.
- After 30 days, we see additional smaller spikes, which can be attributed to the trend of **monthly rentals**.
- Manhattan** and **Queens** have a higher number of **30-day bookings** than the other areas. This could be due to tourists booking extended stays or mid-level employees choosing more **affordable options** for business / Official trips.

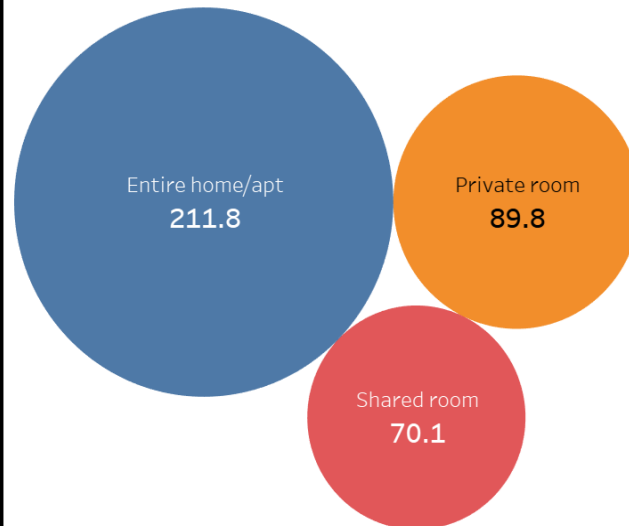
Understanding Price variation with respect to Room Type and Neighborhood

Avg Price Neighborhood wise



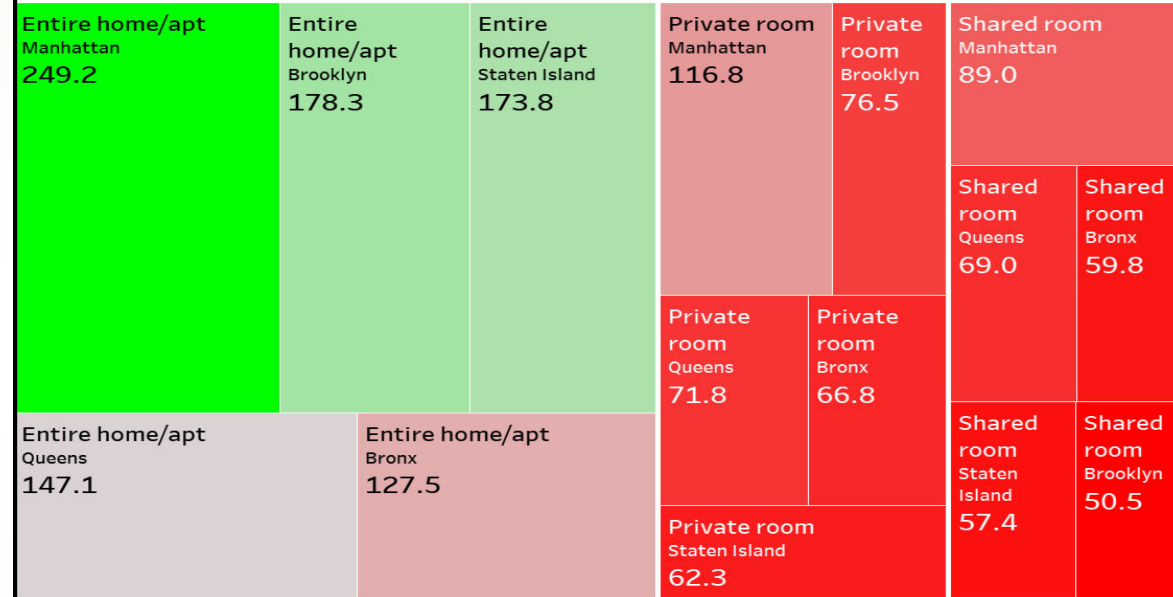
- **Manhattan** has the highest average price of **\$196.9**. **Brooklyn** has the second-highest at **\$124.4**.
- The **Bronx** stands as an affordable option with an average price nearly half that of **Manhattan**.

Avg Price Room Type wise

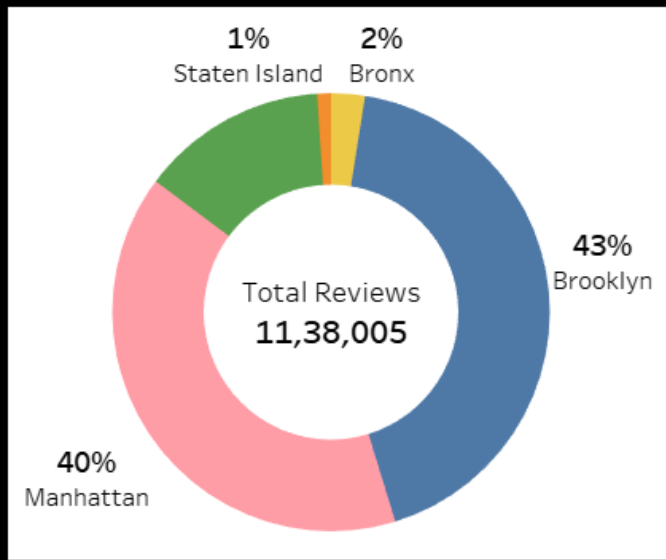


- **Entire home/apt** has the highest average price at **\$211.8** across all Neighbourhoods.
- **Shared room** has the lowest at **\$70.1**.

Understanding Price Variation wrt Room Type & Neighbourhood



- The **Entire home/apt** in **Manhattan** averages **\$250** reflecting **strong demand** for **premium properties**.
- **Private rooms** in **Manhattan** and **Brooklyn** command the highest average price.
- The **Shared Room** type in **Brooklyn** is the most **affordable** with an average price of **\$50.50**.



Manhattan and **Brooklyn** collectively account for **83%** of total customer **reviews**.

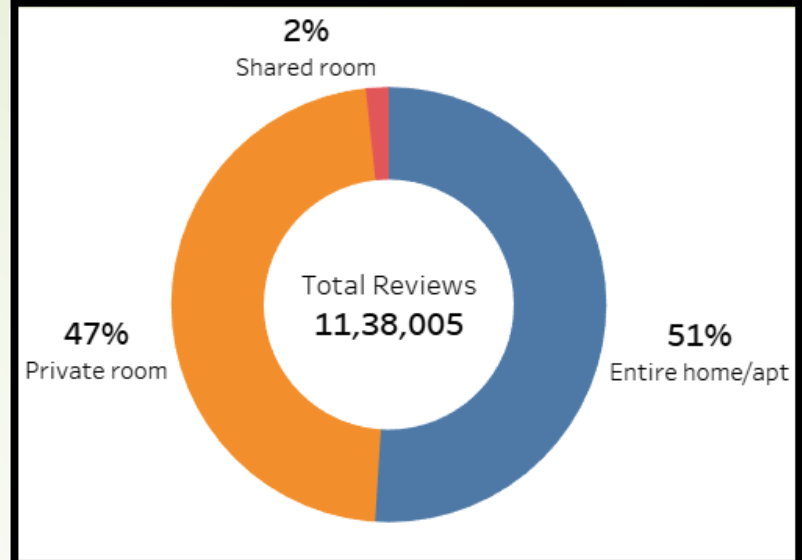
Customer Reviews

with respect to

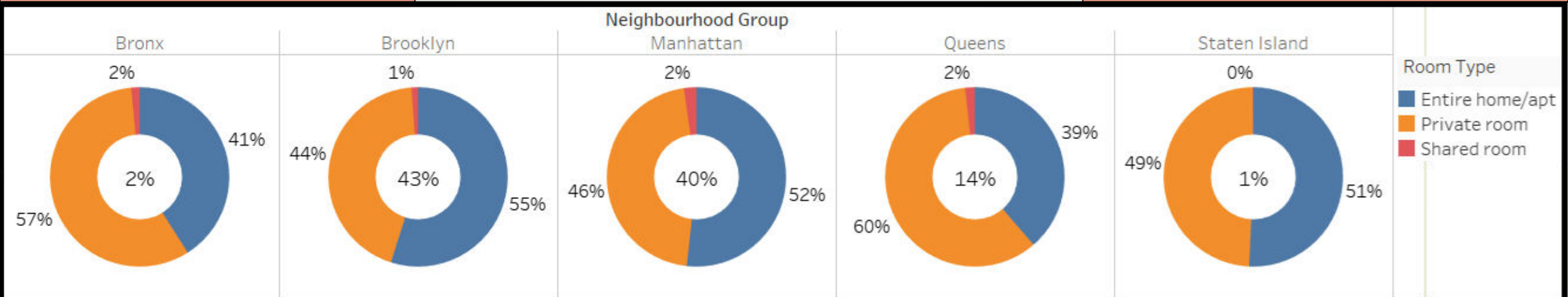
Room Type

and

Neighbourhood



Private room and **Entire home/apt** collectively account for **98%** of total customer **reviews**.



Entire home/apt listings in **Manhattan** and **Brooklyn** received **52%** and **55%** of **reviews** respectively, slightly exceeding the combined average of **51%**. Conversely, **Private room** listings accounted for approximately **47%** of **reviews** across all neighborhoods.

APPENDIX

- Please find the enclosed document for Appendix.



Adobe Acrobat
Document