

Capstone 1 Presented by Divya Kalavar

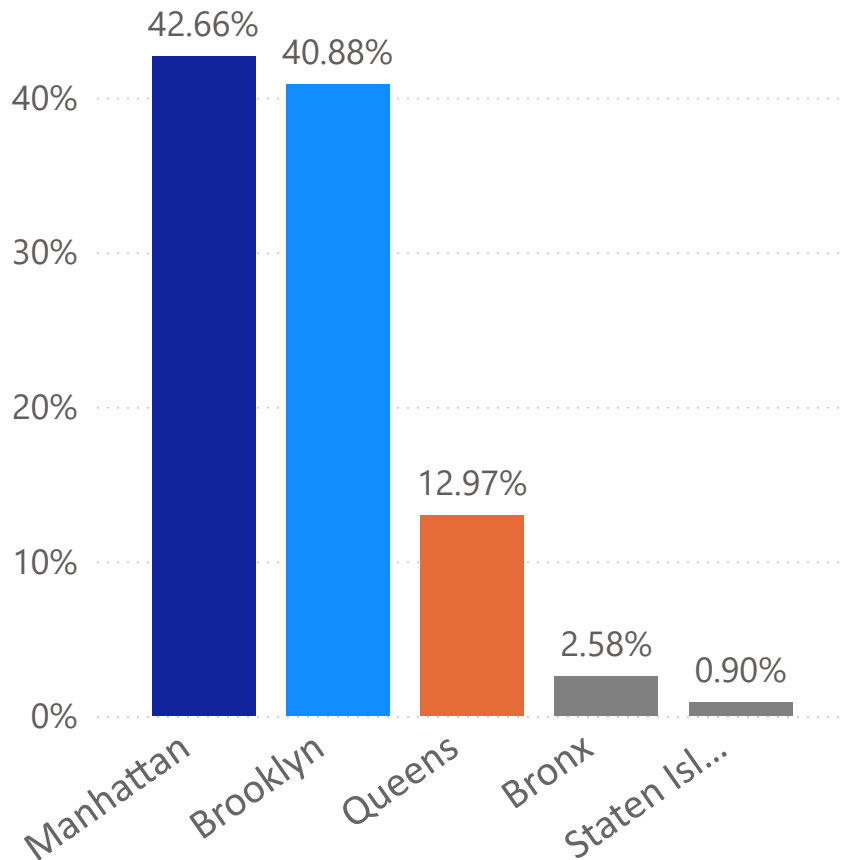
Title: Analyzing the Distribution and Average prices of Airbnb's across New York City.

Context : NYC is ranked as the top 5 most visited cities globally over a decade. As of 2023 NYC has had over 56.7 million visitors and Airbnb holds a 20% share of the short term rental market. In comparison large chain hotels hold 67% of the short term rental market.

This Project aims to analyze **average Airbnb prices in New York City** across **boroughs and local neighborhoods**, as well as key listing factors like **review rate**, **minimum nights**, and **construction year**.

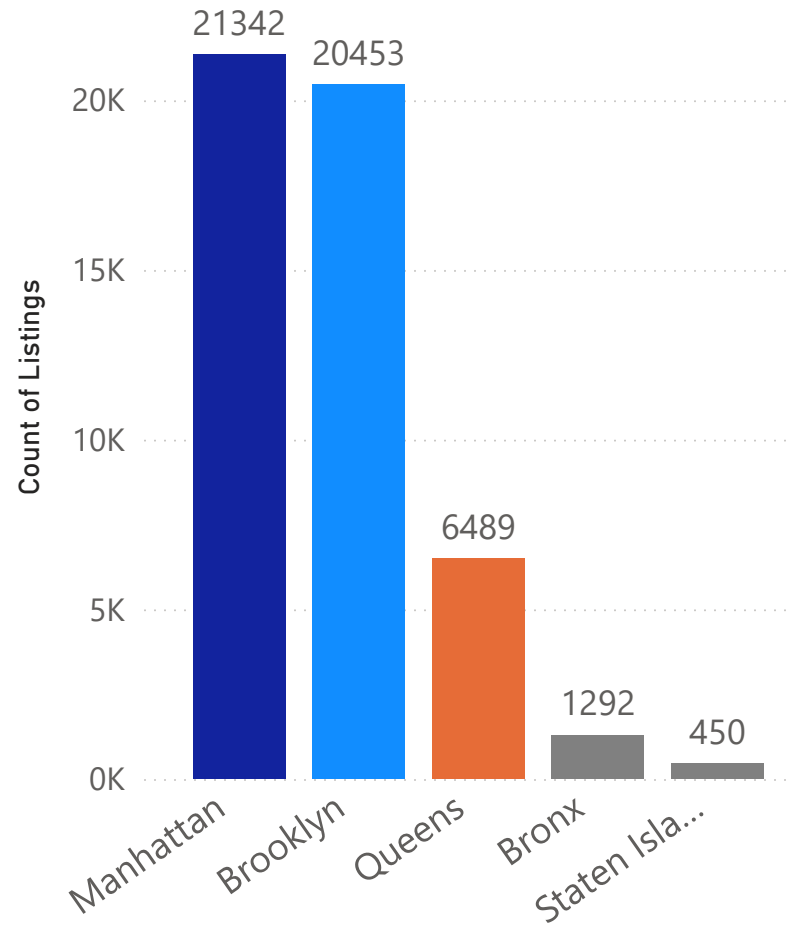
Borough Concentration

Percentage of Listings by Borough



Larger Neighbourhood Group

Number of Listings by Borough



Larger Neighbourhood Group

As we can see from both the column charts to the left Manhattan (43%), Brooklyn(41%) and Queens (13%) form the majority of listings in this data set. Since the combined 3 boroughs (Larger Neighborhood group) form more than 95% of the listings, it would be more prudent to concentrate on these 3 boroughs for further analysis.

Airbnb Concentration across Boroughs and Local Neighbourhoods

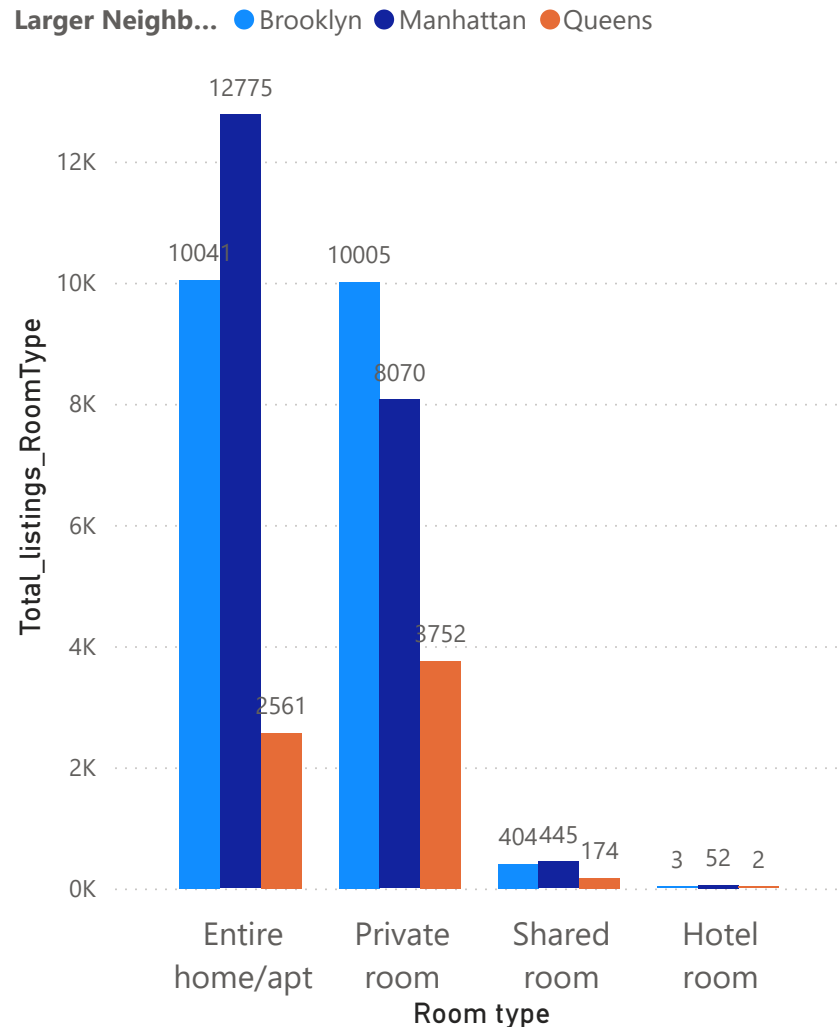


The most populous locations of Airbnb's across the local neighborhoods are the ones closest to the major highways that connect it to other boroughs.

For a potential Airbnb investor it might be helpful to identify properties that are either near major highways or as close to these local neighborhoods to maximize occupation.

Price Analysis by Room Type

Room Type distribution by Borough

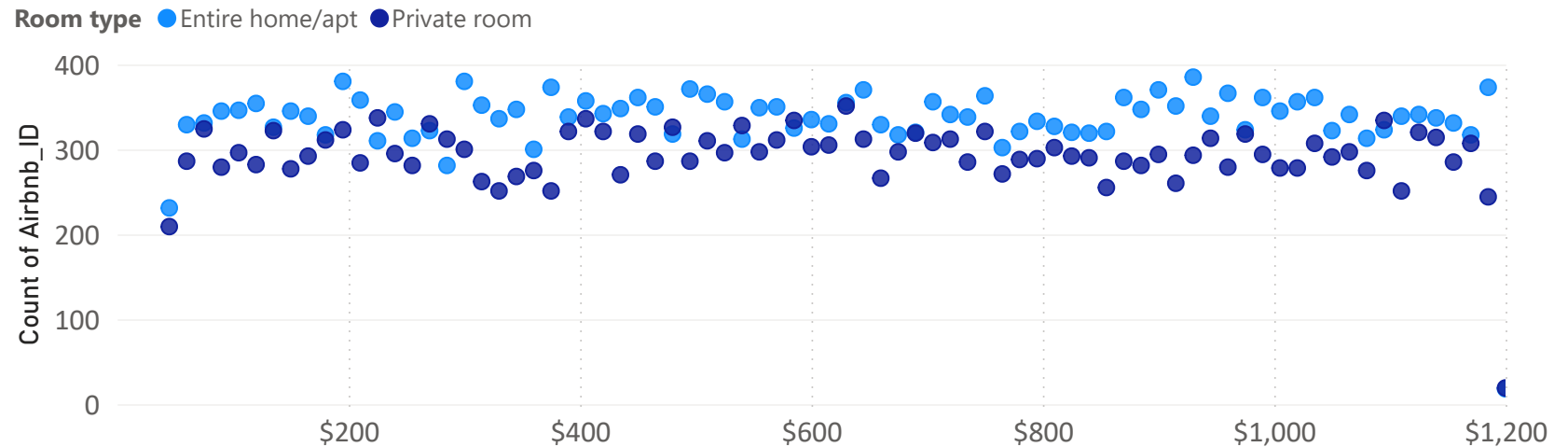


Average Price/night by Room Type

Average of Price/night	Room type
\$625.37	Entire home/apt
\$685.46	Hotel room
\$621.56	Private room
\$628.71	Shared room

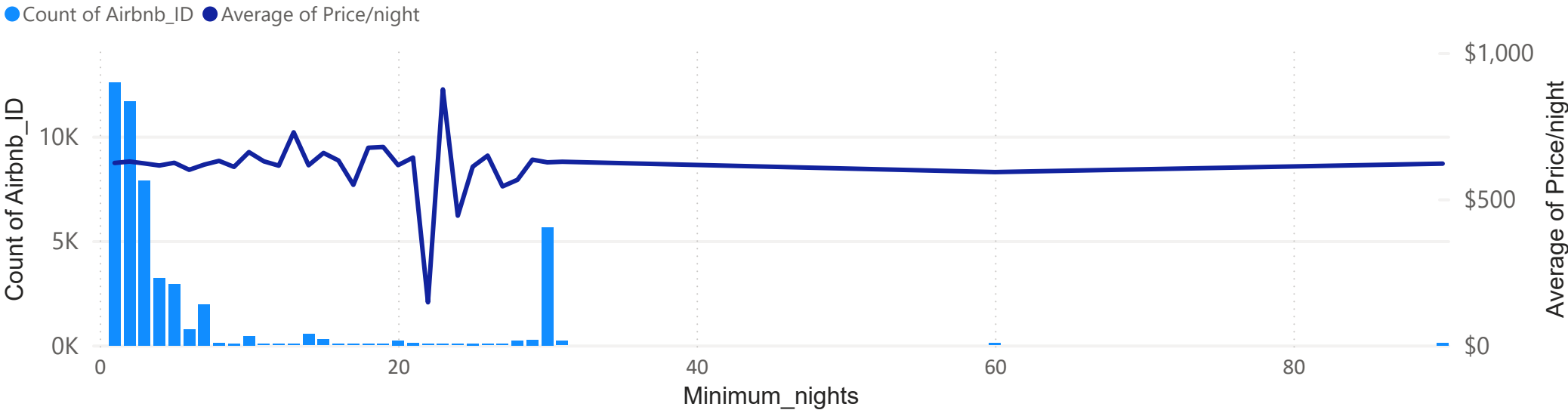
Manhattan has the most listings for "Entire Home/Apt" and Brooklyn has the most Private Room listings. However in terms of price/night there isn't much change either by room type.

Price Range for Room types



Price Analysis By Minimum Nights

Number of Airbnb's vs Min. Nights vs Avg Price



Median Price/ night by Min. nights and Room type

Room type	Entire home/apt		Private room	
Larger Neighbourhood Group	Median of Minimum_nights	Median of Price/night	Median of Minimum_nights	Median of Price/night
Brooklyn	3	\$629	2	\$616
Manhattan	3	\$622	2	\$618
Queens	2	\$623	2	\$626



Price Analysis by Neighborhood

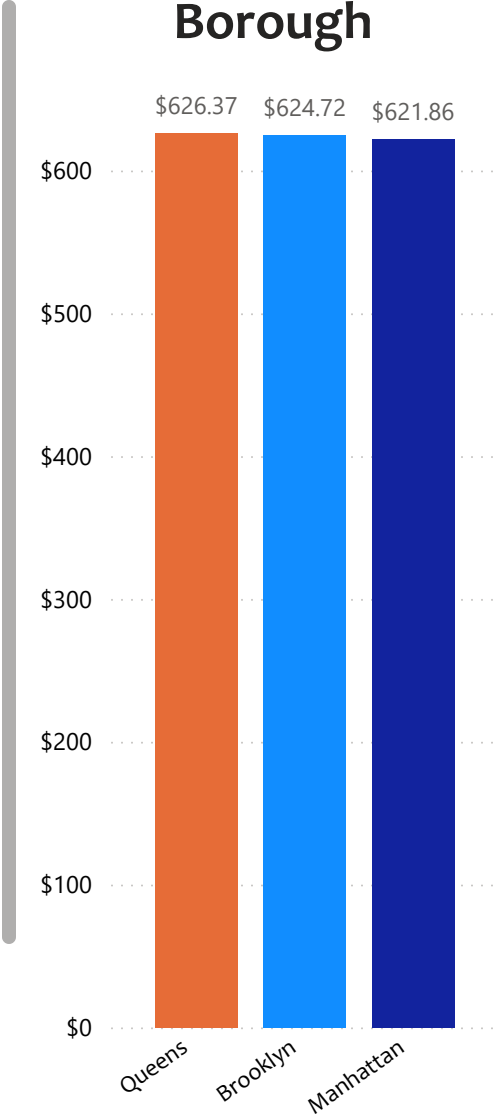
Top neighborhoods and the Avg Price/night

Borough	Neighbourhood	Neighborhood_ share	Neighborh ood_rank	Avg Price/night	Total no. of listings
Queens	Ridgewood	6.87%	4	\$635.61	446
Queens	Flushing	7.61%	3	\$648.29	494
Queens	Long Island City	8.38%	2	\$627.82	544
Queens	Astoria	14.32%	1	\$634.73	929
Brooklyn	Crown Heights	7.82%	4	\$622.55	1600
Manhattan	Upper East Side	8.39%	4	\$613.98	1790
Manhattan	Upper West Side	8.90%	3	\$618.70	1900
Manhattan	Hell's Kitchen	9.17%	2	\$626.50	1958
Brooklyn	Bushwick	11.95%	3	\$627.61	2445
Manhattan	Harlem	12.69%	1	\$627.08	2709
Brooklyn	Williamsburg	18.77%	2	\$625.09	3840
Brooklyn	Bedford-Stuyvesant	18.81%	1	\$621.09	3848
Total		46.61%	1	\$624.62	22503

Avg Price by year of Construction

Construction year	Brooklyn	Manhattan	Queens
2003	\$631.99	\$613.12	\$651.03
2004	\$614.07	\$625.27	\$643.53
2005	\$620.78	\$610.97	\$610.27
2006	\$640.77	\$642.66	\$602.32
2007	\$618.80	\$622.32	\$608.45
2008	\$630.28	\$662.00	\$635.16
2009	\$608.59	\$609.73	\$644.22
2010	\$648.78	\$603.66	\$612.09
2011	\$648.18	\$630.84	\$623.30
2012	\$609.54	\$634.16	\$620.33
2013	\$615.32	\$611.56	\$623.01
2014	\$643.30	\$636.35	\$674.64
2015	\$641.57	\$611.32	\$568.36
2016	\$620.13	\$614.51	\$607.74
2017	\$620.23	\$619.49	\$645.75
2018	\$604.99	\$624.61	\$655.13
2019	\$611.80	\$615.70	\$592.22

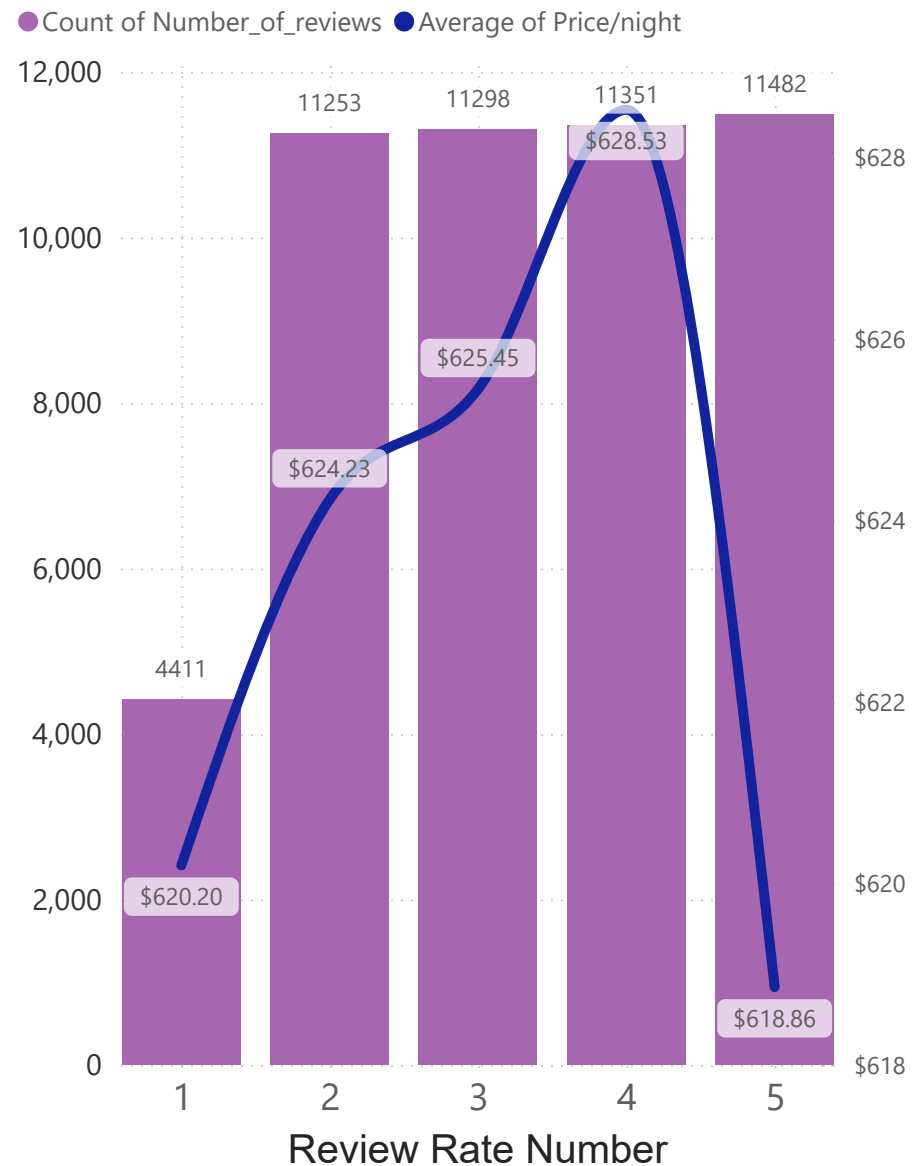
Avg Price/ night by Borough





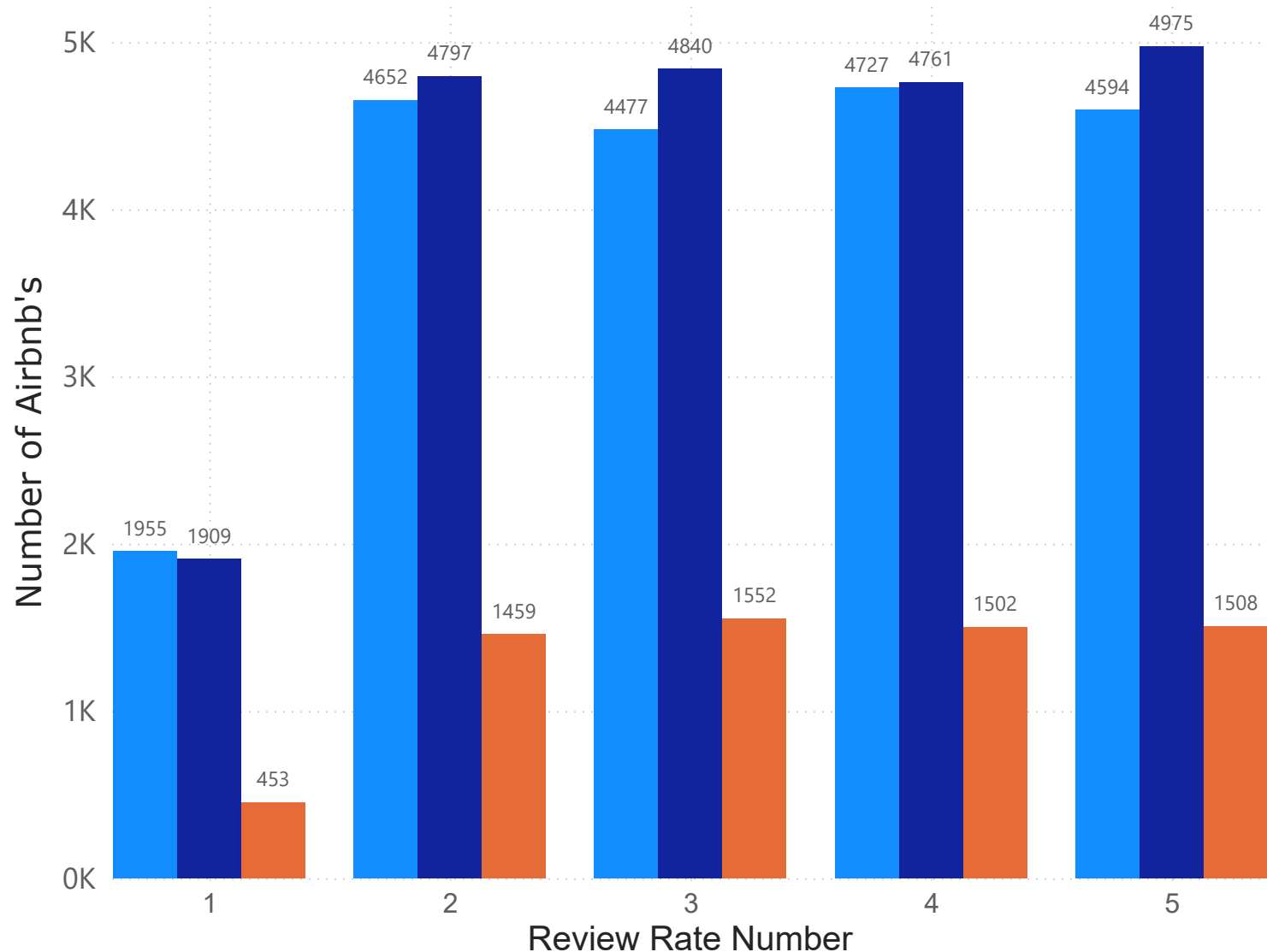
Price Analysis By Reviews

Avg Price/night vs Review Number



Count of Airbnb's by Review Rate number

Larger Neighbourhood Group ● Brooklyn ● Manhattan ● Queens



SUMMARY

- . Due to high demand pricing is inelastic to Boroughs (Larger Neighborhood), Room Type or Minimum Nights, or review Rate number or construction year. This may point to the data being inconsistent. Since we do not have breakup of what "Entire Home" means (beds/bath) its hard to further analyze the inconsistencies.
- . The highest concentration of Airbnb's is in Manhattan and Brooklyn which is over 90% of total listings. Even within the Borough of Manhattan most listings are concentrated towards the edges or outer boundaries of the city closer to major highways with easy access to other Boroughs.
- . This concentration becomes even more evident for other Boroughs when looking at the map visual.