# AIRBNB

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# Table of Contents

# Table of Figures

# 1   CASE STUDY - AIRBNB

## 1.1   AIR BNB CASE STUDY

### 1.1.1   Price Analysis for NYC neighborhood area:

The NYC area is divided into five neighborhoods :Manhattan, Brooklyn, Staten Island, Queens and Bronx. Airbnb market has wide range of price variations in NYC area. Due to large number of corporate offices and popular tourist attractions, the Manhattan has Highly priced apartments. Due to limited availability of Villas in this area, they are categorized as most expensive rental properties.
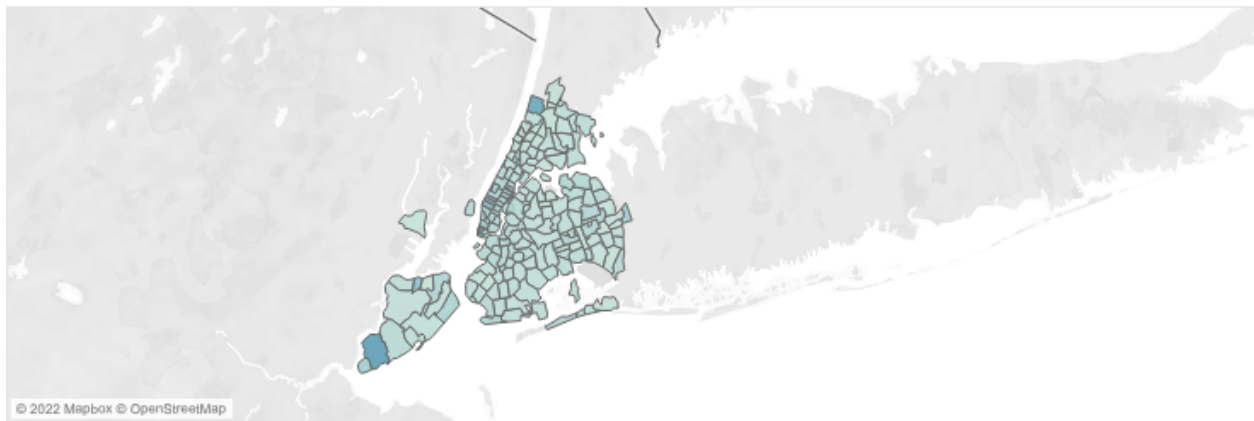


*Figure 1 Zipcode Wise Price Distribution*

Figure 1 shows zip code wise price distribution for NYC area in which rental price varies from $50 to $ 150 for 1 night stay at a property. Using the available data, the  generalized average price for particular neighborhood and average prices for each type of rental property in each of these neighborhood  are shown in figure 2 and figure 3 respectively. All these data analysis has been carried out using tableau.
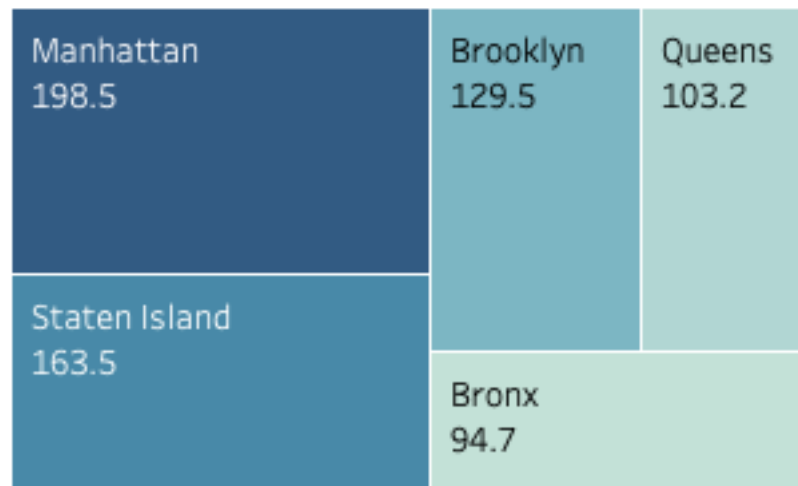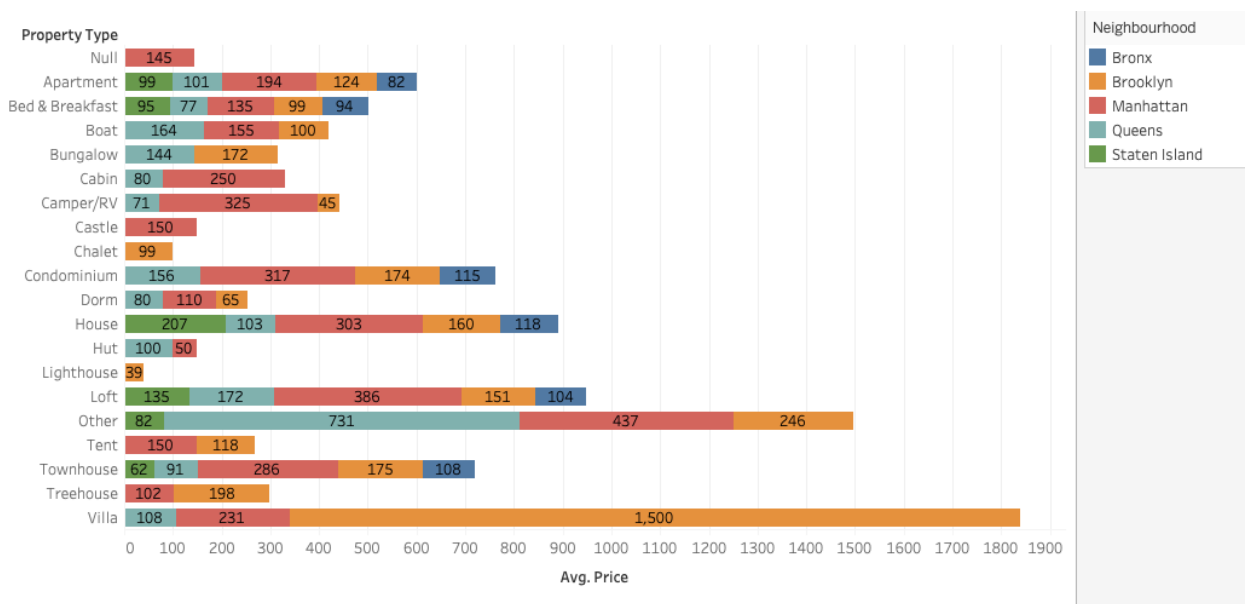
*Figure 2 Average Airbnb Rent*



*Figure 3 Average Rental Property Prices*

Using Rapid miner tool , we can predict the prices for each of these properties.in NYC area. Figure 4 shows the basic process model for price prediction.
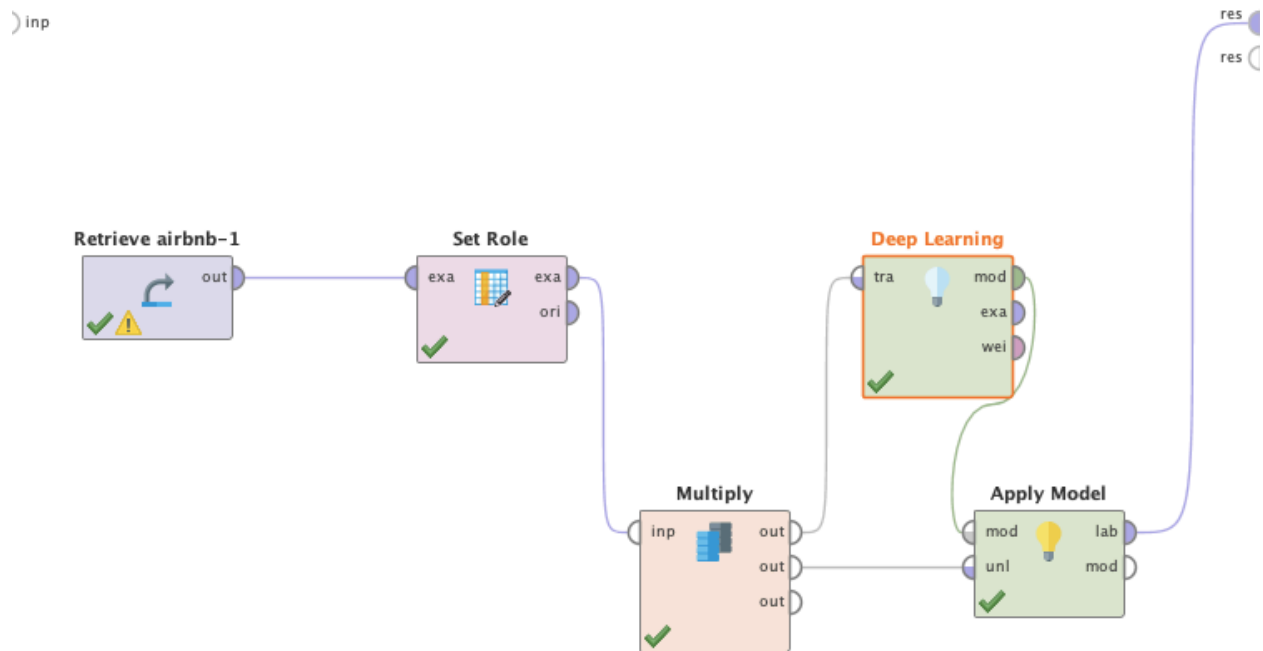
*Figure 4 Price Prediction Process Model*

Using the auto model facility in rapid miner, we can run multiple models and comparing the results, we can select the best fit model for our price analysis. On Airbnb NYC dataset we ran 5 algorithm models and results indicates Gradient Boosted trees is the wining model with minimum relative error. The price prediction chart and important factors determining price predictions using Gradient Boosted trees are indicated in figure 6 and figure 7 respectively.
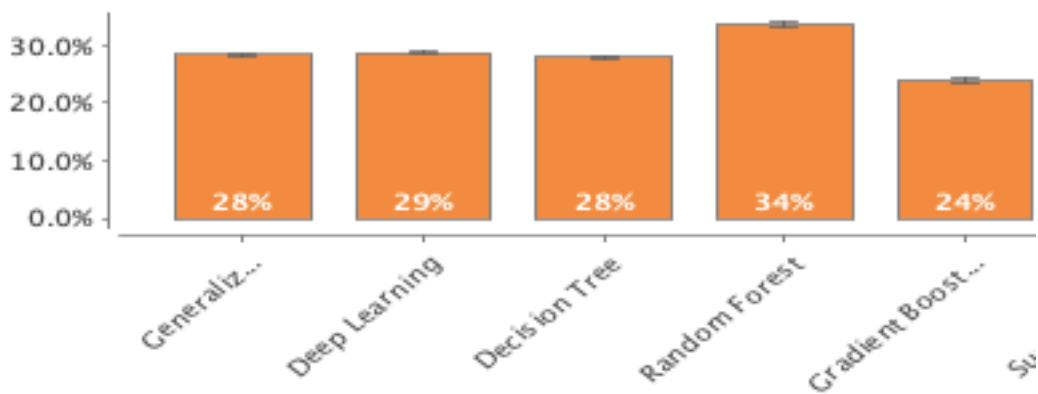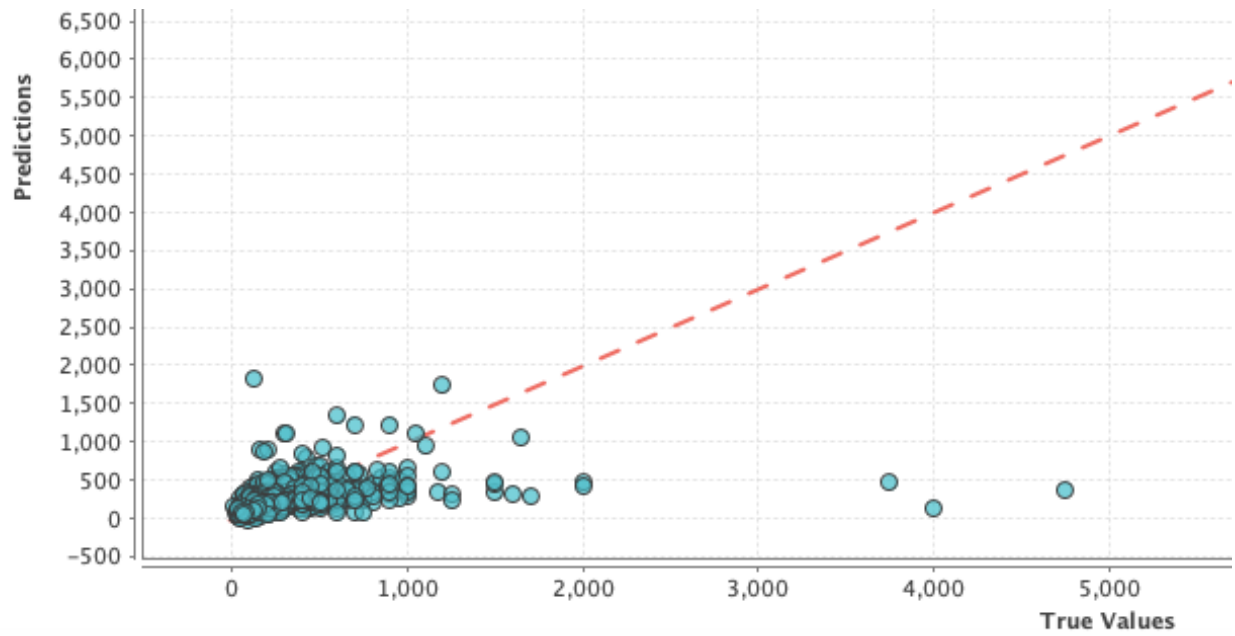


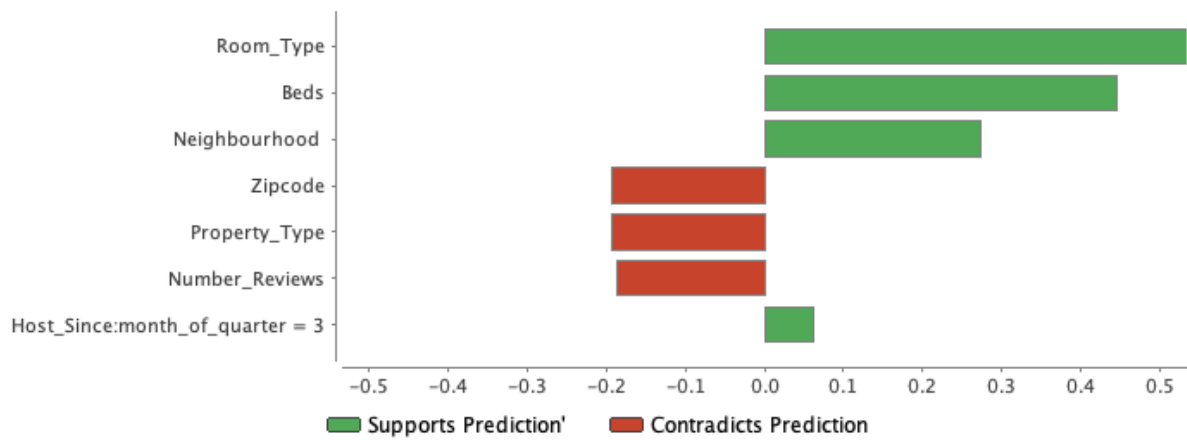*Figure 5 Relative Error*

*Figure 6 Prediction Chart*



*Figure 7 Important Prediction Factors*

## 1.1.2 NYC Neighborhood Comparison

Data indicates more demand for rental properties (>90%) in the Manhattan area followed by Brooklyn. These two areas are dominated by the apartment type of properties. Overall average reviews in the NYC neighborhoods are in the similar range. Figure 8 showcases zip code wise different types of property distribution in NYC area.
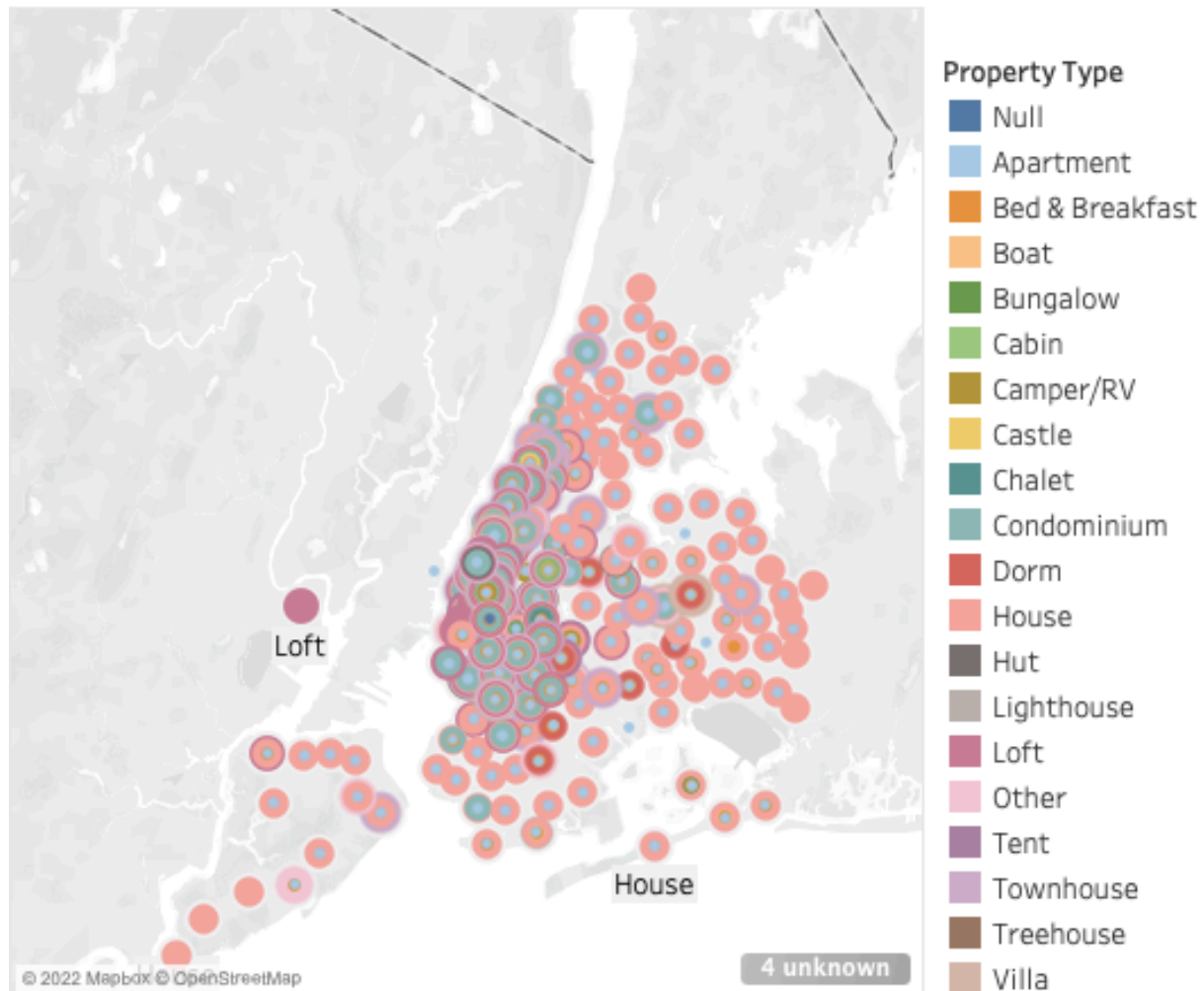


*Figure 8 Zipcode Wise Property Distribution*

Figure 9 indicates out of 30,478 rental properties available in NYC area, majority is concentrated in Manhattan. The reason behind this could be availability of transport option , corporate office hubs and tourist attraction spots are majority located in Manhattan neighborhood. However the data analysis shows the average reviews for properties in all five neighborhoods are in similar ranges indicated by figure 10. All these data analysis has been carried out using tableau.
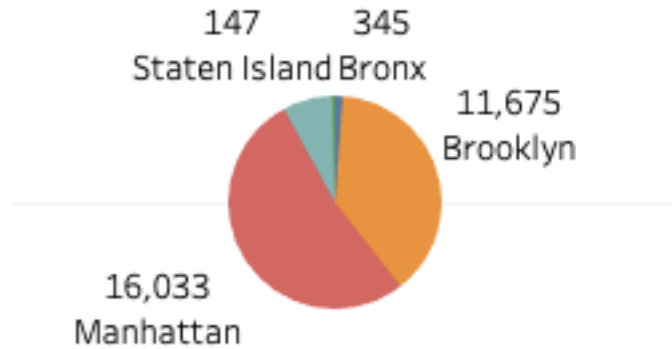
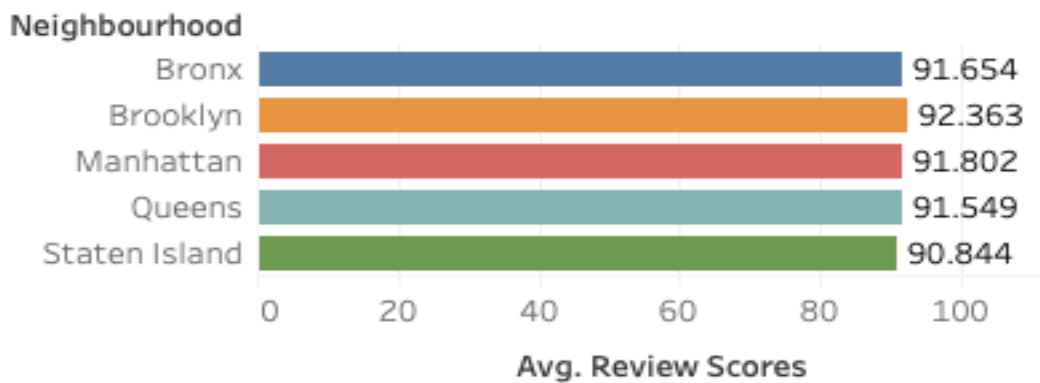*Figure 9 Availability of Property in Each Neighborhood*



*Figure 10 Property Average Review Score*

### 1.1.3  Airbnb NYC Neighborhood Key Insights

- Most of the rental properties(>50%) in NYC area are located in Manhattan neighborhood due to multiple location benefits.
- Manhattan has Highly priced apartments.
- Due to limited availability of Villas in this area, they are categorized as most expensive rental properties.
- Apartments are most popular rental property in NYC area.
- Overall average reviews in the all five NYC neighborhoods are in the similar range.