

# New York City Airbnb Analysis

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## Introduction and Dataset Overview

Dataset Link: [Airbnb Open Data – New York City \(2008–2022\)](#)

This dataset is an open-source collection from Airbnb, covering all listings in New York City between 2008 and 2022. This dataset is valuable due to its insight into how short-term rentals are distributed and priced across the city. Such data benefits a wide range of stakeholders:

- **Investors**, who can identify profitable areas for new listings.
- **Hosts**, who can optimize pricing and property quality.
- **City officials**, who can monitor the effects of Airbnb on housing and tourism.

## Data Preparation and Exploration

Before analysis, I cleaned the data to ensure accuracy and consistency. The original file contained more than 190,000 listings. To clean the data, I focused on handling missing values, fixing inconsistencies, and narrowing the data to short-term rentals (under a one month stay).

**Key steps included:**

- **Missing values:** I replaced 190,794 blank values with `NULL` and removed rows missing key geographic data (`neighbourhood_group` or `neighbourhood`).
- **Duplicates:** Removed 541 duplicate entries in the `id` column.
- **Spelling corrections:** Changed names such as `brookln` → `Brooklyn` and `manhatan` → `Manhattan`.
- **Country data:** Replaced 532 missing `country` values with “United States” and 131 missing `country_code` values with “US”.
- **Minimum nights filter:** Removed listings requiring more than 30 nights to focus on short-term rentals.
- **Date validation:** Adjusted five `last_review` entries that were outside the 2008–2022 range to `NULL`.
- **Availability limits:** Corrected 3,185 invalid values (less than 0 or greater than 365 days).
- **Column cleanup:** Removed the mostly empty `license` column and renamed most fields for clarity.

This process produced a reliable dataset suitable for creating visualization and statistical analysis in Tableau.

## Findings and Key Insights

### Manhattan and Brooklyn dominate the market

Manhattan (42,421 listings) and Brooklyn (40,815 listings) together represent over 80%

of all New York City Airbnb listings. Their dominance shows strong tourism demand and housing availability.

### **Entire homes/apartments are most common**

Over half of listings (52%) are entire homes or apartments, while 46% are private rooms and only 2% are shared spaces. This trend suggests that both hosts and guests prefer full-unit rentals, providing more privacy and higher earning potential.

### **Minimum stay slightly affects pricing**

A mild positive relationship exists between `minimum nights` and `average nightly price` based on trend in the scatterplot visualization. Longer required stays tend to command higher rates. This pattern suggests that hosts targeting extended-stay travelers may set higher base prices.

### **Average prices and fees remain high**

Across all listings, the average nightly price is \$625.47, and the average service fee is \$125.06. These figures highlight Airbnb's profitability in high-demand areas but also indicate rising costs for visitors compared to traditional accommodations.

## **Recommendations**

Based on these findings, several actions are recommended for different stakeholders:

### **For Hosts:**

- **Review pricing strategies.** Hosts in high-priced boroughs like Manhattan may benefit from moderate price reductions to increase occupancy rates and improve satisfaction.

#### **For Investors:**

- **Explore under-served markets.** Staten Island, Queens, and the Bronx show potential for growth, with less competition and higher guest satisfaction.

#### **For Policymakers:**

- **Address concentration in core boroughs.** The overwhelming number of listings in Manhattan and Brooklyn could affect local housing supply. Policymakers might consider regulations that encourage more even distribution across boroughs.

## **Conclusion**

This analysis of Airbnb's open dataset reveals clear patterns in New York City's short-term rental market. Manhattan and Brooklyn dominate in volume and price, but smaller boroughs particularly Staten Island demonstrate higher guest satisfaction and stronger value. These findings suggest that success on Airbnb depends not only on location but also on pricing strategy and guest experience. Hosts can gain competitive advantage through quality service, investors can find opportunity in emerging neighborhoods, and city leaders can use these insights to promote balanced urban tourism.