

Summary of Findings: NYC Airbnb 2024 Data Analysis

Tracey Sneed

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Overview

This document summarizes key findings and insights derived from the analysis of the NYC Airbnb Open dataset as of January 5, 2024. The dataset, obtained from Kaggle, was processed, stored in an SQLite3 database, and visualized using Power BI.

Key Observations

1. Geographic Distribution

The dataset provides a comprehensive view of Airbnb listings across the five boroughs of New York City. In the dataset, there are a total of 20,758 unique listings with 12,449 hosts. The breakdown of listings and hosts by borough is as follows:

- Bronx: 949 Listings, 633 Hosts
- Brooklyn: 7719 Listings, 5296 Hosts
- Manhattan: 8038 Listings, 4144 Hosts
- Queens: 3761 Listings, 3761 Hosts
- Staten Island: 291 Listings, 209 Hosts

Manhattan and Brooklyn contain the vast majority of listings. A possible explanation for the strong representation of Manhattan and Brooklyn could be explained by the presence of historical landmarks. Of the 156 historical landmarks in New York City, 126 of them are located in Manhattan (82) and Brooklyn (44) (New York City Landmark Preservation Commission, nd). Additionally, Manhattan is home to New York's business district and landmarks such as One World Trade Center, The Empire State Building, The Chrysler Building, and more.

2. Pricing Trends

The average pricing for the five boroughs was explored. Of the five boroughs, Manhattan had the highest average price per night. Staten Island and the Bronx had the lowest price per night, with the Bronx average being 37¢ cheaper than Staten Island.

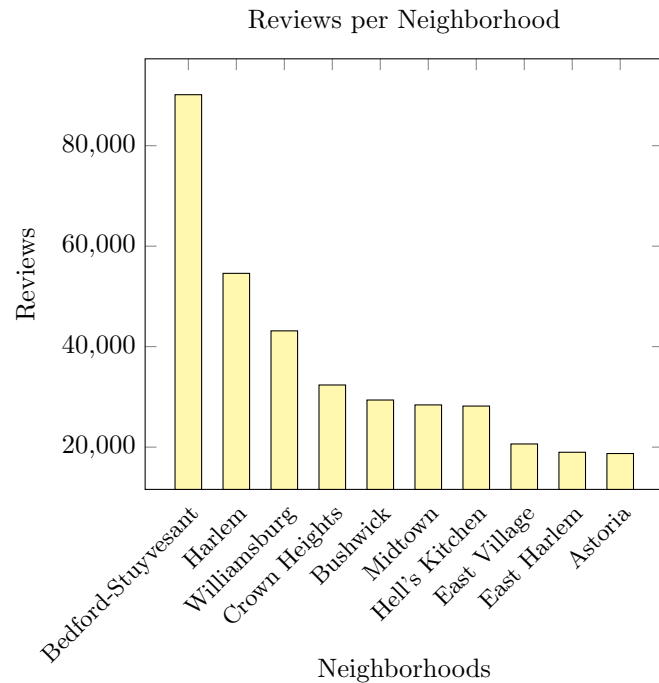
- Bronx: \$118.41 per night
- Brooklyn: \$187.03 per night
- Manhattan: \$227.85 per night
- Queens: \$126.49 per night
- Staten Island: \$118.78 per night

The heavy presence of historical landmarks in Brooklyn and Manhattan may explain why the two boroughs' average cost per listing is significantly higher than the other three boroughs. Interestingly, all five boroughs have similar average ratings. However, Brooklyn and Manhattan each have more reviews than the Bronx, Queens and Staten Island combined.

3. Neighborhood Insights

The project delved into specific neighborhoods within each borough, analyzing average prices, the number of reviews, and other relevant metrics. The following are the top ten most popular neighborhoods ranked by the number of reviews.

1. Bedford-Stuyvesant: 90,150
2. Harlem: 54,589
3. Williamsburg: 43,141
4. Crown Heights: 32,367
5. Bushwick: 29,375
6. Midtown: 28,402
7. Hell's Kitchen: 28,171
8. East Village: 20,626
9. East Harlem: 18,977
10. Astoria: 18,725

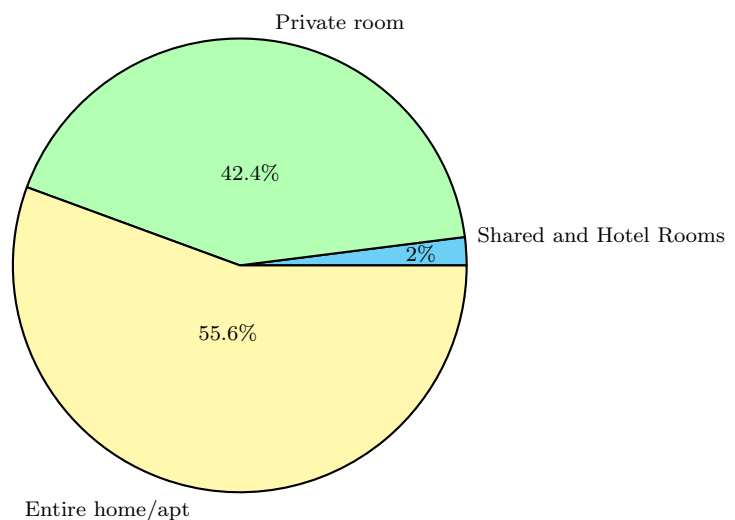


Of the top ten most popular neighborhoods in New York, five belong to Manhattan, four belong to Brooklyn, and one to Queens.

4. Top-Reviewed Listings

Identification of the top-rated listings based on user reviews and pricing. This provides a snapshot of the most well-received Airbnb accommodations in the dataset. There are four types of listings recorded in the dataset: "Entire home/apt", "Hotel room", "Private room" and "Shared room." Below are the listing types ranked by the amount of reviews each type has received across the City of New York.

- Entire home/apt: 55.6%
- Hotel room: 0.5%
- Private room: 42.4%
- Shared room: 1.4%



Understandably, hotel rooms account for a small percentage of the reviewed total listings as Airbnb is a disruptive competitor to the hotel industry. Airbnb is largely based around the idea of renting one's home or residential property as an alternative to making a reservation at a hotel.

Power BI Dashboard

The Power BI dashboard generated from the dataset provides interactive visualizations for a comprehensive exploration of the data. Graphs, charts, and maps were employed to convey the trends observed during the analysis.



Figure 1: Snapshot of Power BI Dashboard Page 1

There are six pages in the Power BI dashboard, one for each borough and an additional page for an overview of the Airbnb listings in New York City as a whole. The Power BI dashboard is interactive and includes more detailed data visualizations.

Conclusion

This project is not intended to be exhaustive, merely descriptive of the New York City Airbnb market. Manhattan and Brooklyn are dominant in terms of available Airbnb rentals and the amount of traffic they accommodate. However, for budget-conscious renters, Staten Island, the Bronx, and Queens are more budget-friendly while providing rentals that are similarly rated by renters. New York City is a diverse city with a rich and storied history, travellers are likely to find charms and flaws of the Big Apple regardless of which slice they choose to sample.

This document is a summary of the findings uncovered in Kaggle NYC Airbnb Open dataset. For more in-depth data visualization, data processing and database structuring, please reference the project readme and Power BI file.

References

New York City Landmark Preservation Commission (n.d.). Maps. Accessed: February 6, 2024.