



PANDA-O-RAMA

Airbnb Data Analysis Project

By: Brandon McKimmy, Jennifer Dahlgren, Meredith McCanse, Sonja Baro

Executive Summary

Purpose: Exploratory analysis of 2023 AirBnB listing data for 4 U.S. cities*

Hypotheses:

- What factors influence price and overall rating
- What role does the host play in pricing and overall rating

Findings: Some relationships exist for price and rating, but none for host



Boston, MA



Denver, CO



Nashville, TN

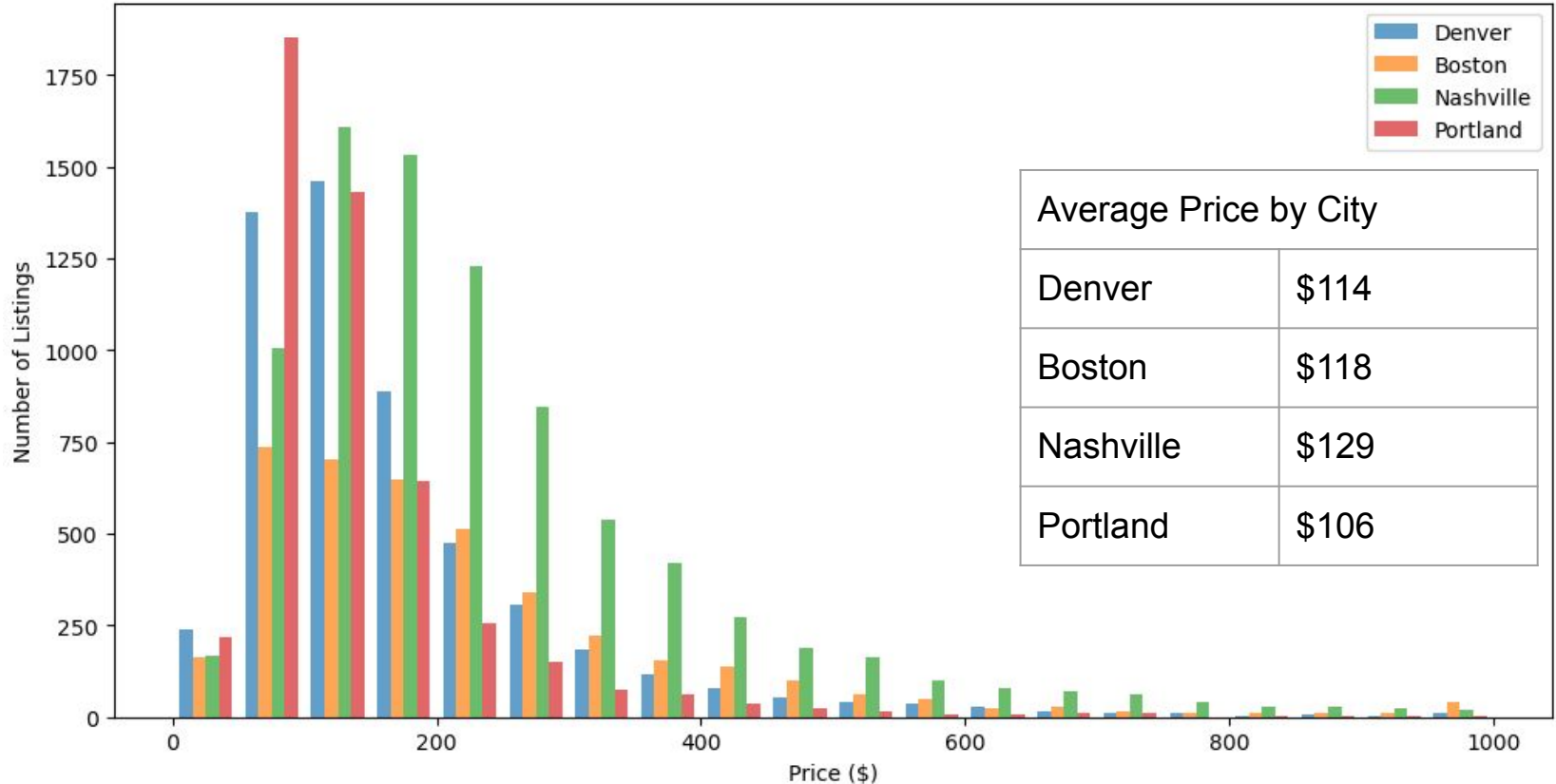


Portland, OR

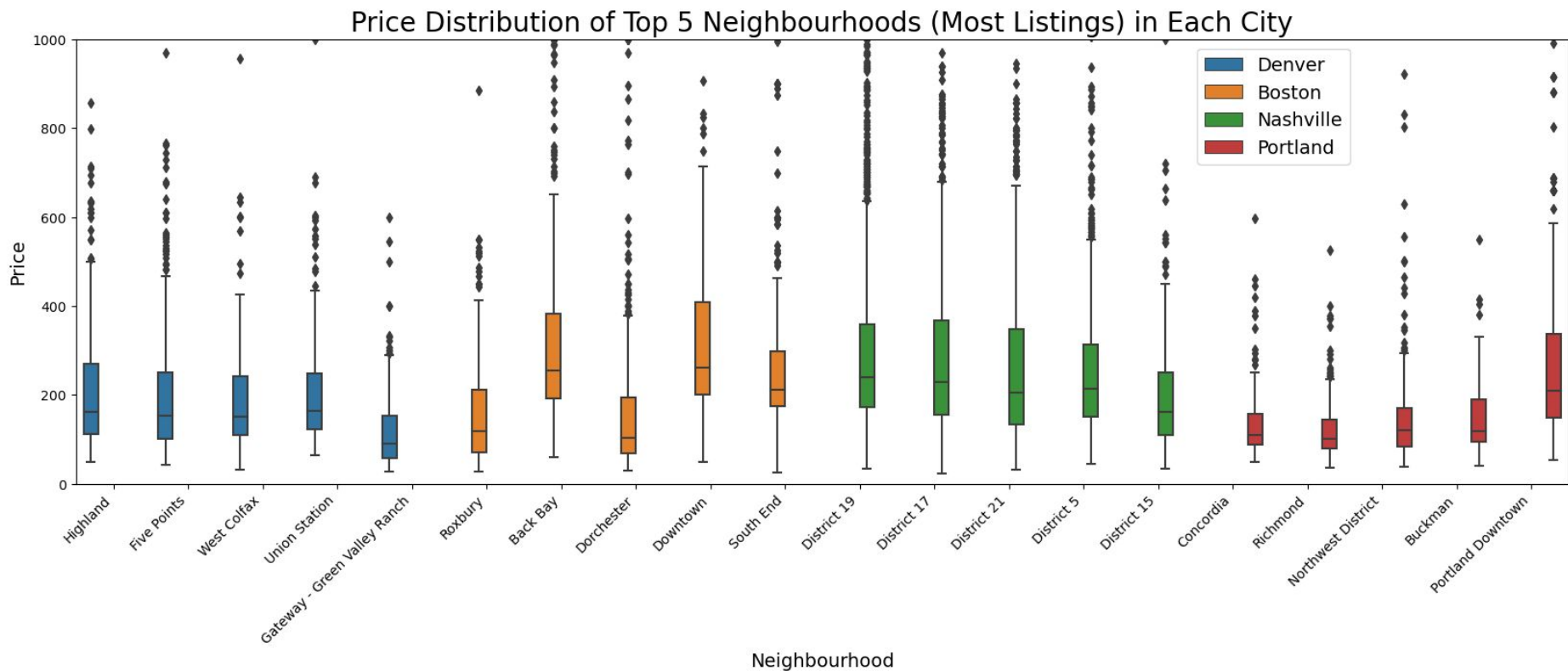
**Cities selected based on similar listing volume.*

Similar Average Price For Most

Price Distribution in Denver, Boston, Nashville, and Portland



Neighbourhood Doesn't Appear to Affect Price

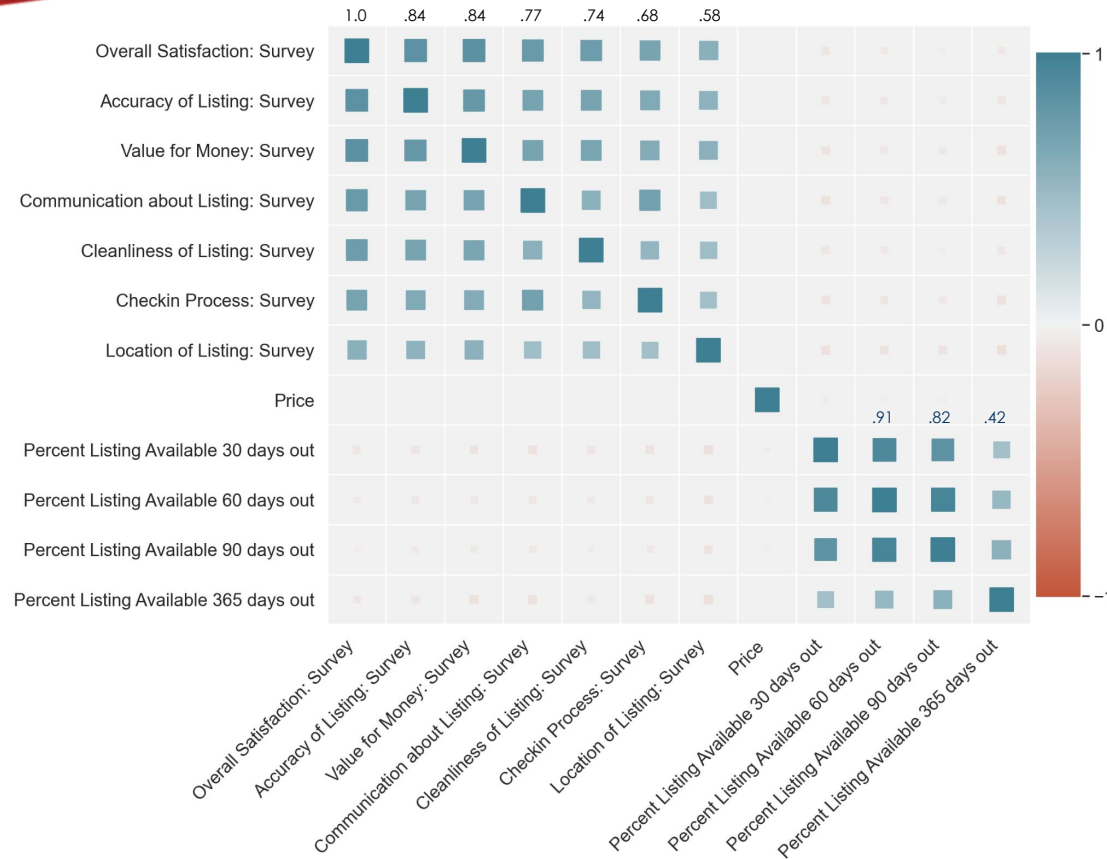


Price to Property Type Relationship



- Price outliers over \$474 removed
- Six property types comprise 95% of properties
- Clear relationship across cities

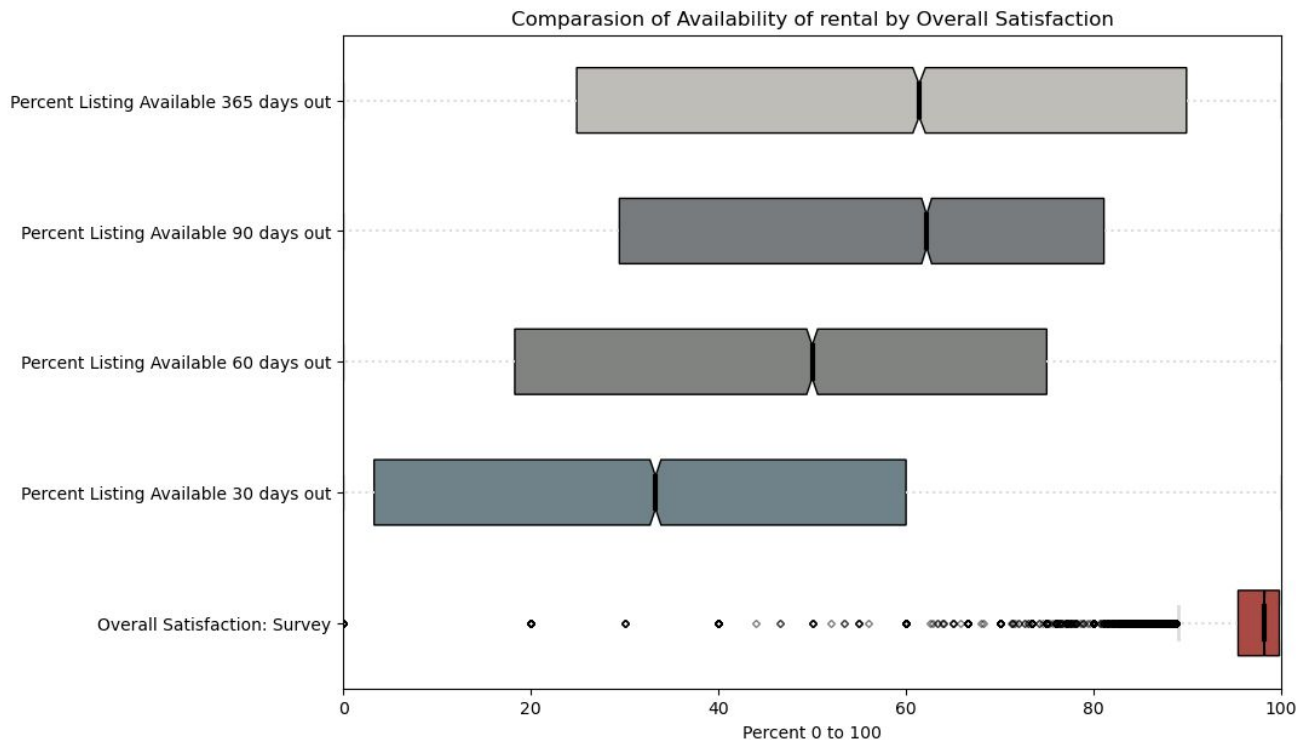
Which Factors Relate to Overall Rating?



There are two areas that are highly correlated with each other:

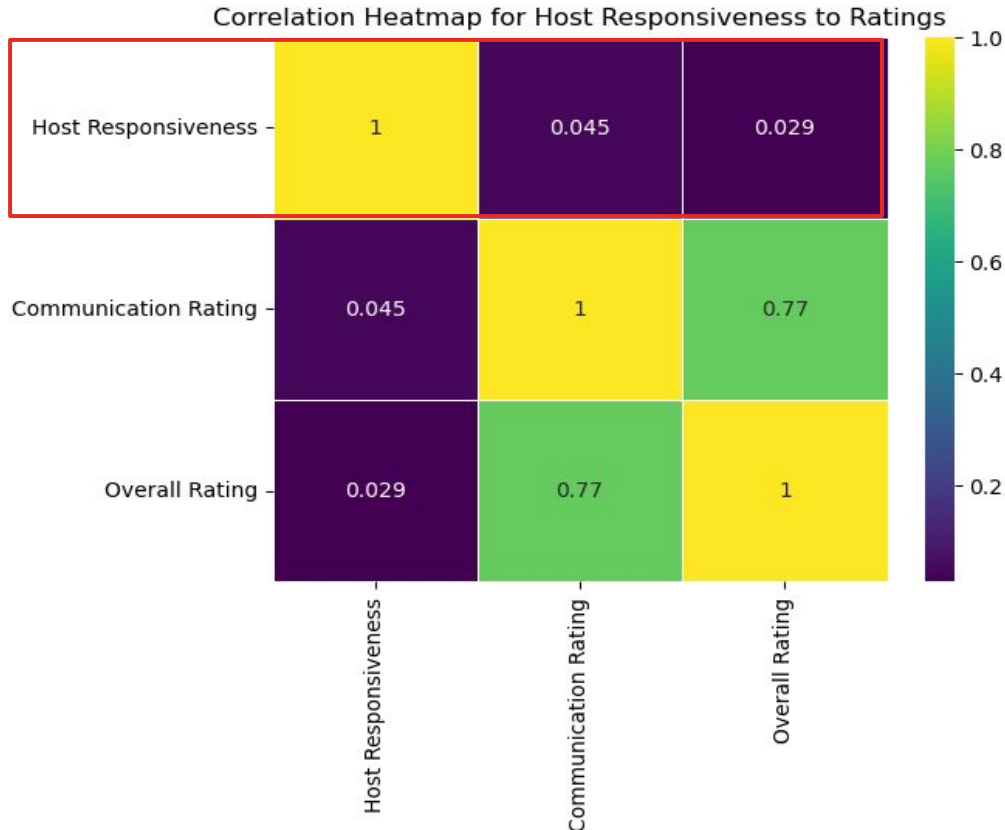
- Survey metrics
- Percent of listings available

Do Listings With High Overall Ratings Have Less Availability?



By normalizing the data on a 0 to 100 scale we **do not see** major relationships between “Overall Satisfaction: Survey” and the “Listing Availability”

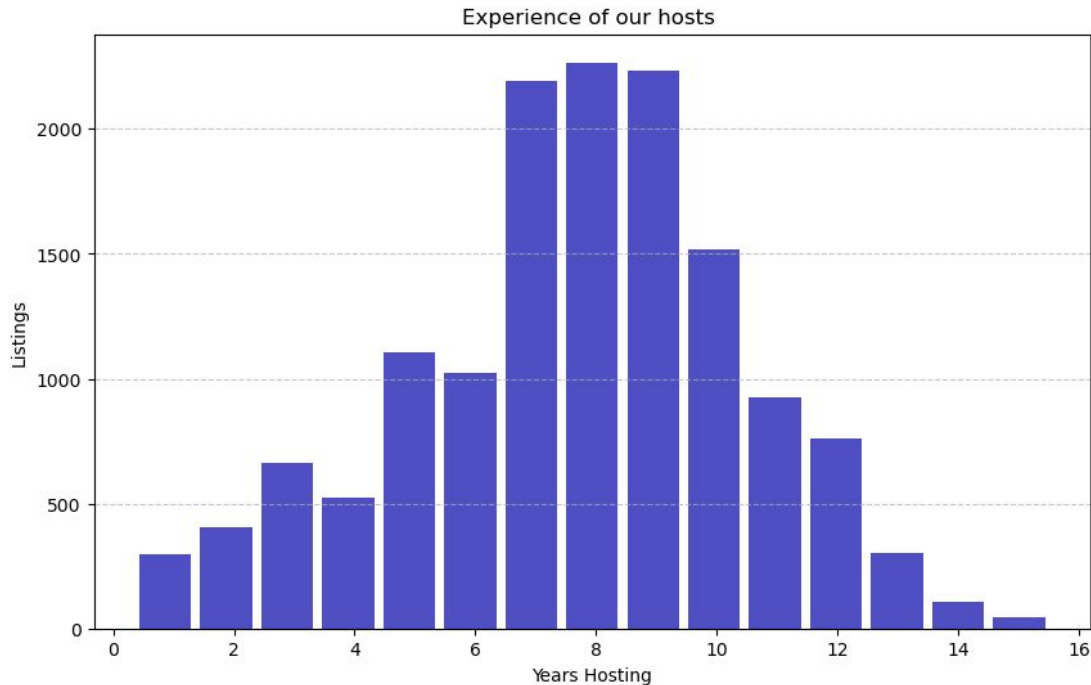
Role of the Host and Ratings



Host responsiveness doesn't seem to influence either the communication rating, or the overall rating.

No other provided host measures correlated with price or rating.

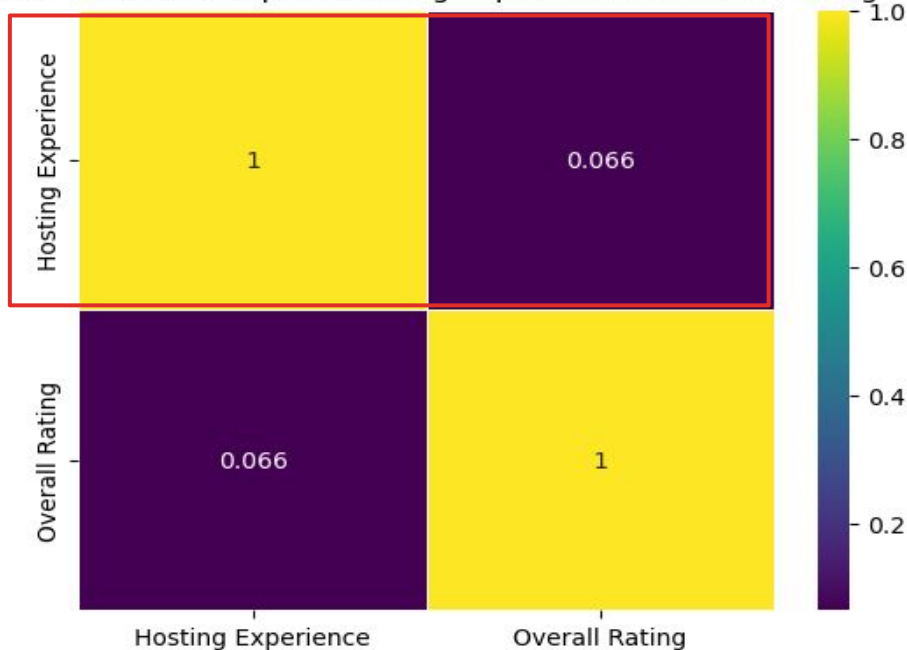
Does Hosting Experience Improve Overall Rating?



The majority of hosts have about 8 years experience in hosting

Years Hosting Did Not Influence Overall Ratings

Correlation Heatmap for Hosting Experience to Overall Rating



Host factors had no relationship with the overall rating, including the number of years hosting.

CONCLUSION

Findings:

Factors most related to **price** across cities:

- **Property type**

Top 2 factors influencing **overall rating** metric:

- **Listings description accuracy**
- **Value for money**

Factors related to the host have no relationship to price or ratings

Recommended further exploration:

What role does the listing proximity to various local attractions have in relation to price and rating?

Does more information supplied by host about property correlate to price or rating?

Data Sources

- Inside Airbnb

Inside Airbnb is a mission driven project that provides data and advocacy about Airbnb's impact on residential communities

- Data downloads here

- September 2023 listings.csv.gz files for respective cities

- Data licensed under CC BY 4.0

- Creator and attribution parties

- Murray Cox, John Morris, Taylor Higgins
- Past collaborators and advisory board members found here

- Changes to data:

- Format, data type, convert date/time
- Calculations added include but not limited to mean, median, sum, count, % of total
- Value mappings to facilitate statistical analysis



Discussion