

Navigating the Sharing Economy: Strategies and Insights for Airbnb in Chicago

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Agenda

- Airbnb Overview
- Purpose
- Timeline
- Data Selection and Cleaning
- Data Analysis
- Results
- Conclusion







Purpose of the Analysis

- To what extent does external factors impact hosts of Airbnb in Chicago?
- How can Airbnb develop strategies to focus and motivate hosts to expand the Airbnb economy?



Airbnb Overview

- Founded in 2008, grown 5M+ hosts with 7.7M+ listings welcomed 1.5M+ guest arrivals
- A global online marketplace for lodging and tourism experiences
- Airbnb's business model includes not only accommodations but also "Airbnb Experiences," which allow guests to book unique activities designed and led by locals
- Airbnb has also expanded its offerings with initiatives like Airbnb Plus and Beyond by Airbnb, which cater to guests looking for higher quality or luxury experiences, respectively
- Airbnb has significantly impacted the travel and tourism industry, providing an alternative to traditional hotel stays and fostering a culture of sharing economy.





Timeline



Data Selection

Dataset Choice:

- **Reviews.csv** (410K+ reviews in Chicago Airbnb listings up to 2023)
- **Listing.csv** (320K+ records for USA listings up to 2022)
- Crucial variables (neighborhood, room type, availability) for insightful analysis

Data Source:

- Inside Airbnb
- Kaggle

Data Preparation:

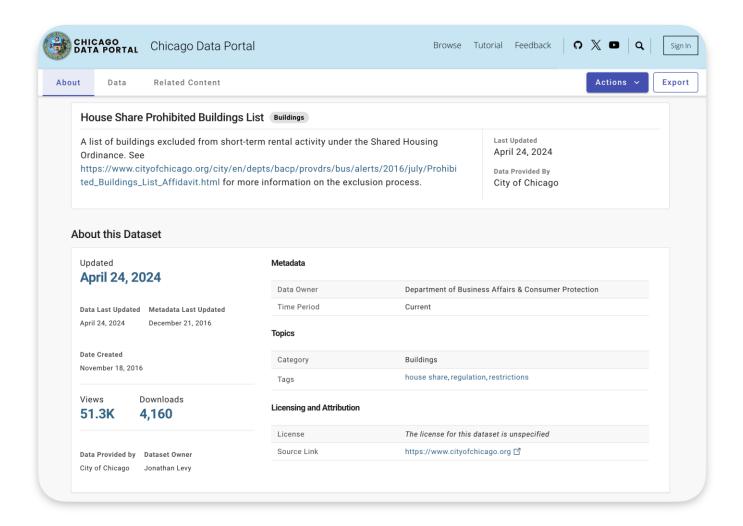
- Data cleaning by removing missing values and anomalies
- Count the number of unique listings in reviews data based on the 'listing_id'
- Group reviews by 'listing_id' to display the count of comments associated with each individual listing
- Combine 2 datasets together to analyze







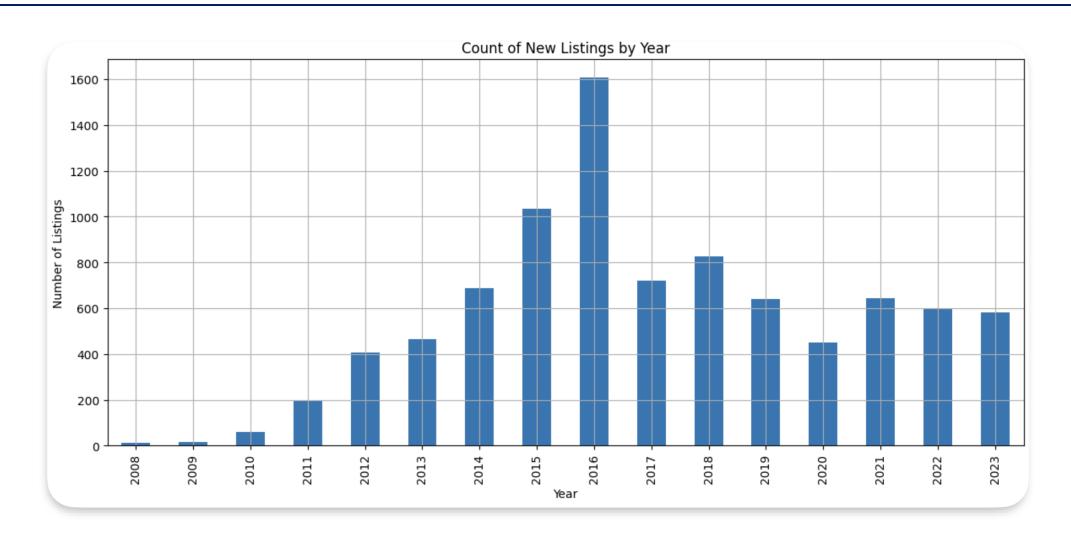
Prohibited Listing Check



```
{'company_hosts': {'unique_hosts': 1,
   'total_listings': 1,
   'average_listings_per_host': 1.0},
   'individual_hosts': {'unique_hosts': 0,
   'total_listings': 0,
   'average_listings_per_host': 0}}
```

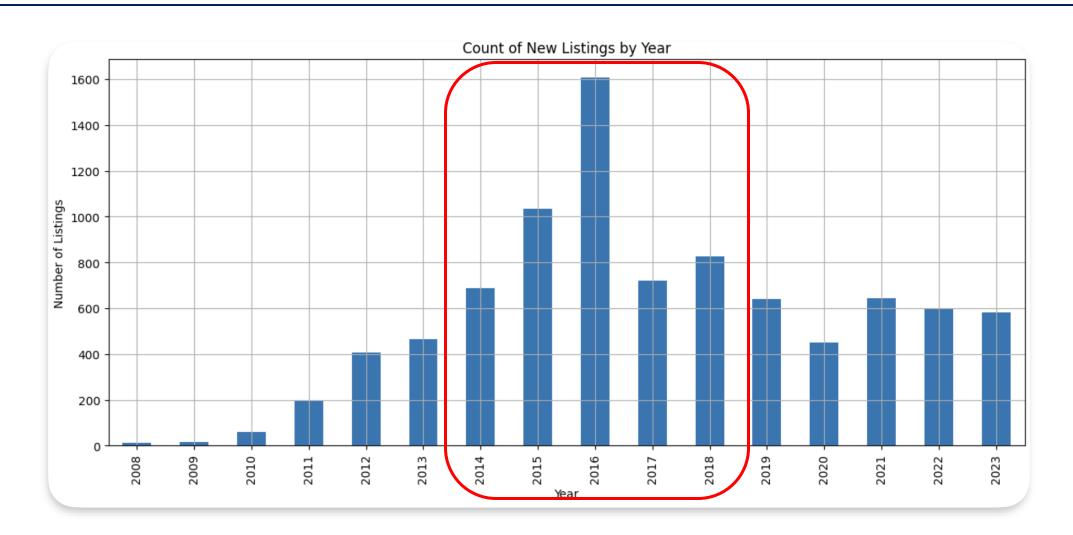


Overview of New Listings





Overview of New Listings





Listing Growth in 2016

- **Economic Incentive for Homeowners**: a convenient and profitable way for homeowners to earn extra money
- **Influence of the Sharing Economy**: the concept of sharing homes became more accepted and mainstream
- **Growing Popularity of Airbnb:** more homeowners began to see the potential benefits of listing their properties





New Ordinance in 2016

- **High Tax Rate**: a 21% tax on short-term rentals, combining a 4% surcharge with the city's 17.4% hotel tax
- Registration Requirement: must register with the city to obtain a number and get their application approved
- **Heavy Fines for Non-compliance:** Violations and bans can lead to fines ranging from \$5,000 to \$10,000
- **Limitations on Units in Buildings:** Buildings with fewer than five residential units could only have one unit listed as an Airbnb, while buildings with five or more units were limited to listing up to 25%
- Guest Registration Records, Inspections





Sentiment Analysis of Reviews

Start	End	Score
May 2014	Dec 2016	0.867
Jan 2017	May 2019	0.820

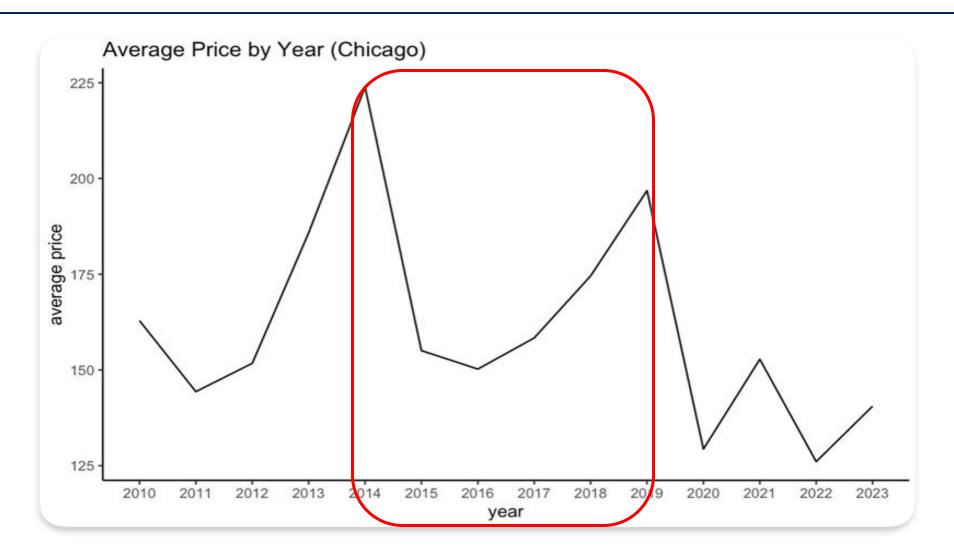


Overview of Listing Price





Overview of Listing Price





Who are the hosts?



Individuals

~1.5 Listings per Host

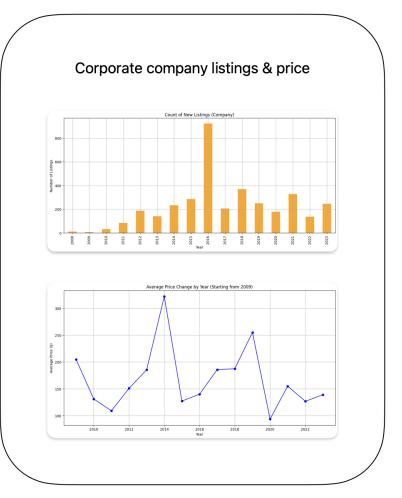


Companies

~9.5 Listings per Host



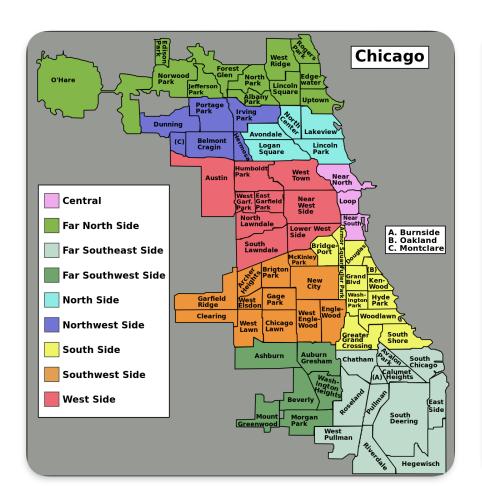


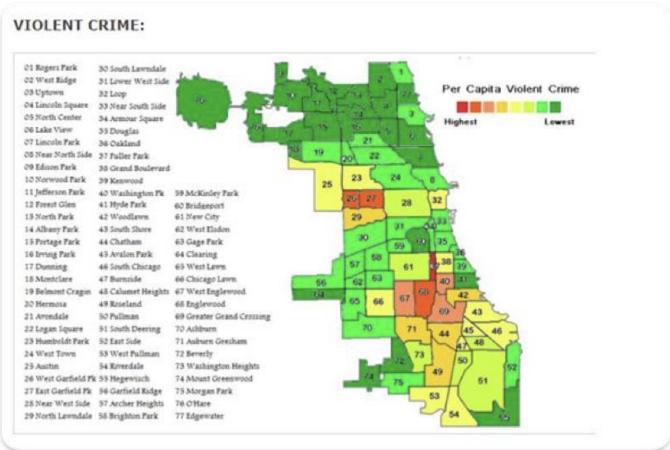


Trend of listings by host type



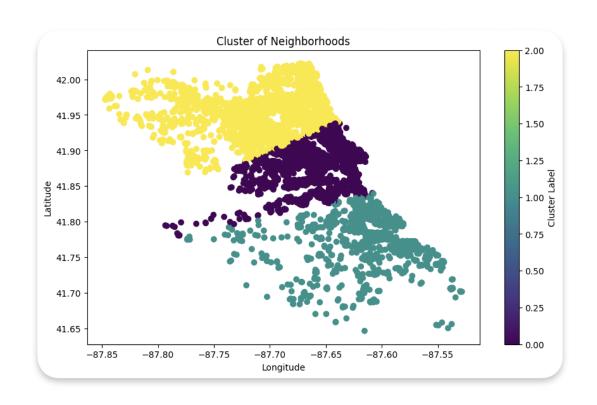
Chicago Region and Community

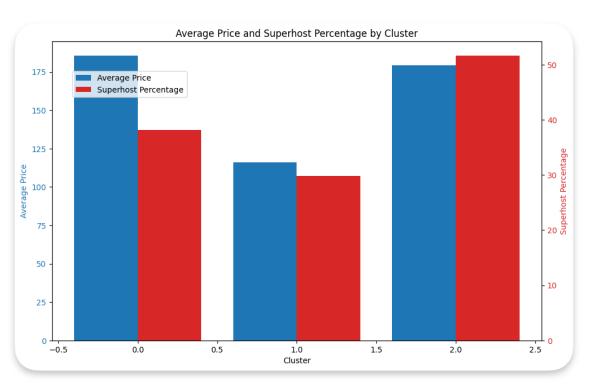






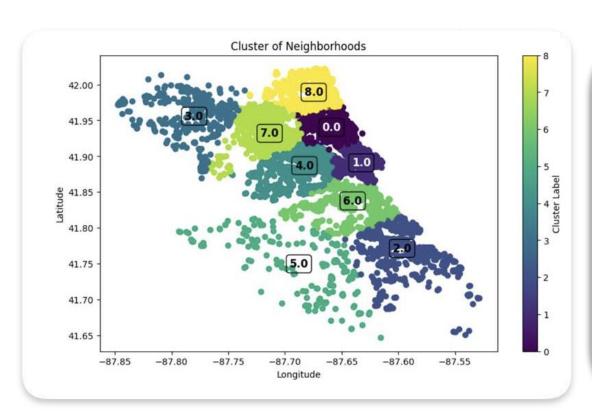
Unsupervised ML Clustering with 3 groups

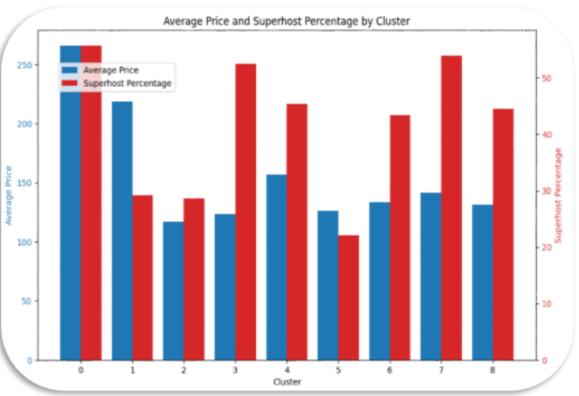






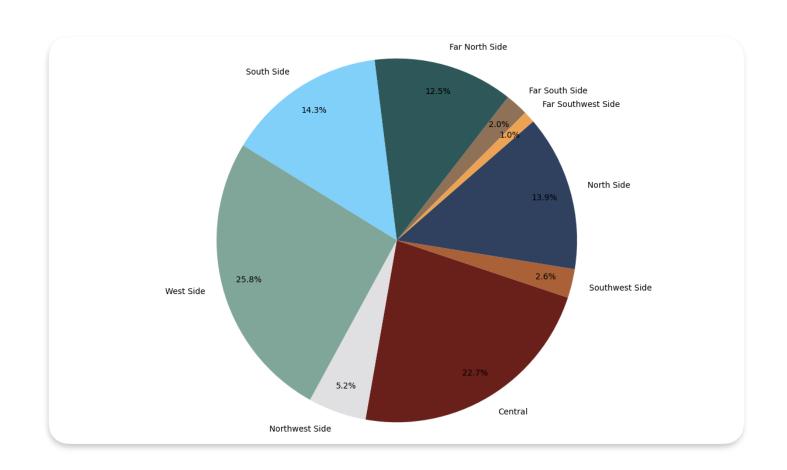
Unsupervised ML Clustering with 9 groups





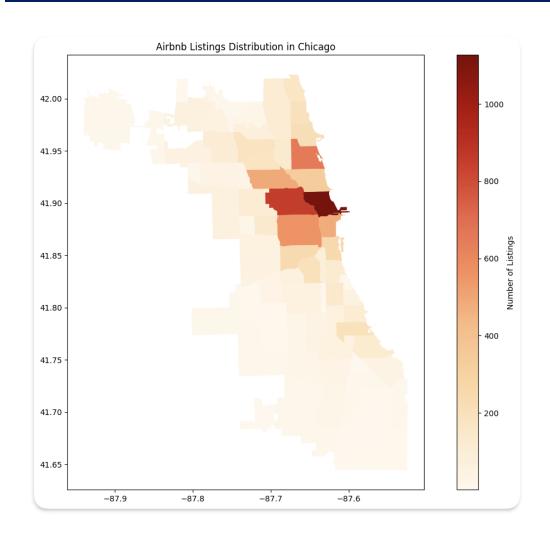


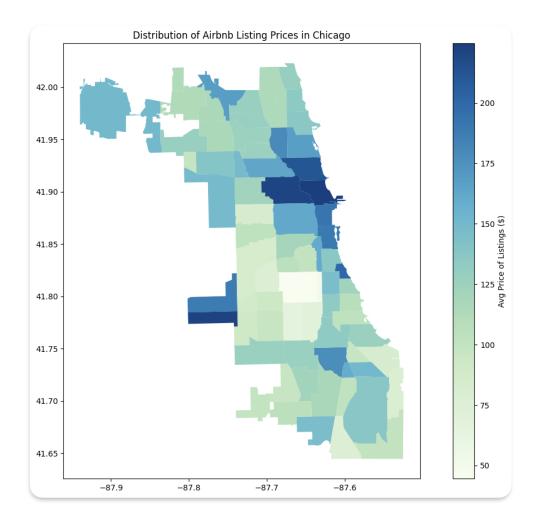
Airbnb Popular Region





Regional Listing Number and Price





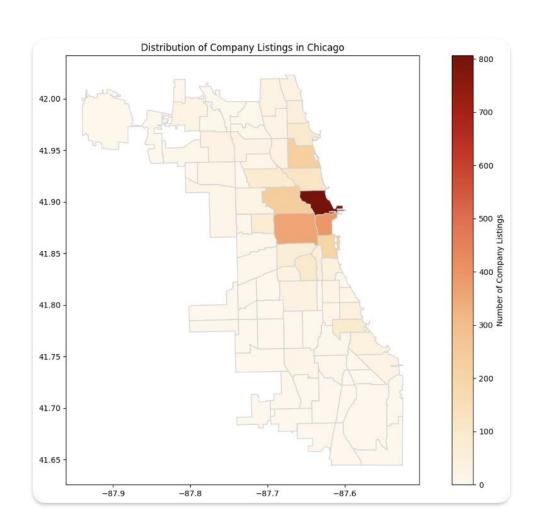


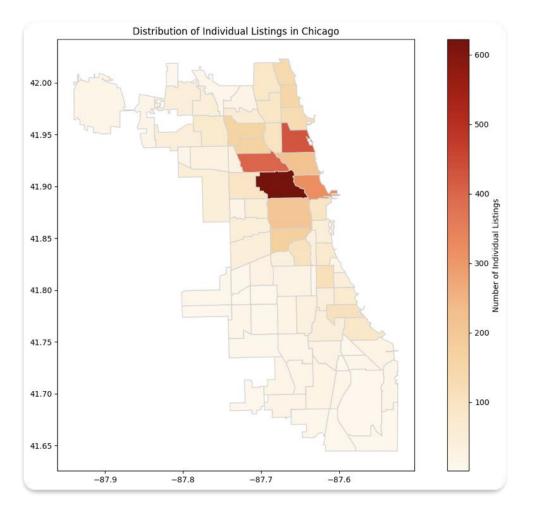
Tourism popularity

- 2019, Chicago hosted 55.2 million tourists
- Over 5.4 million people visited Navy Pier in 2019
- In 2018, The Millennium Park was the top tourist attraction in Chicago with nearly 25 million visitors
- Hotel occupancy rate in the central region of Chicago, specifically in the Loop area, reached 75% in the third quarter of 2023
- Average occupancy rate for the city was around 63.1% in October 2023



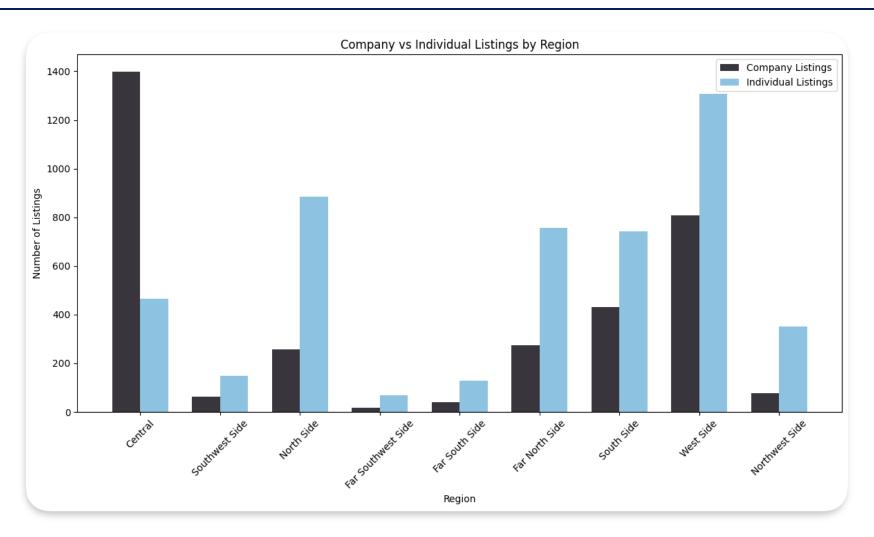
Regional Listing Company vs Individual





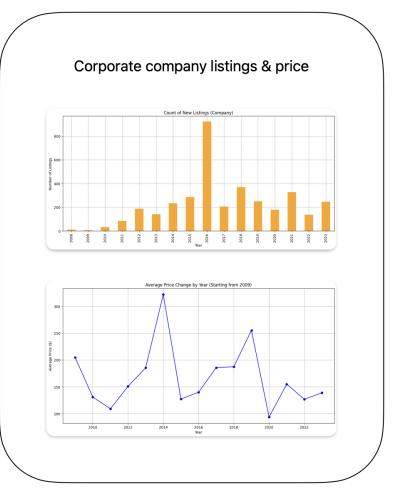


Regional Comparison









Linking back



Policies affect individuals stronger

Why Ordinance?

Concerns on

- 1. City's housing market
- 2. Quality of life
- 3. The hotel industry.



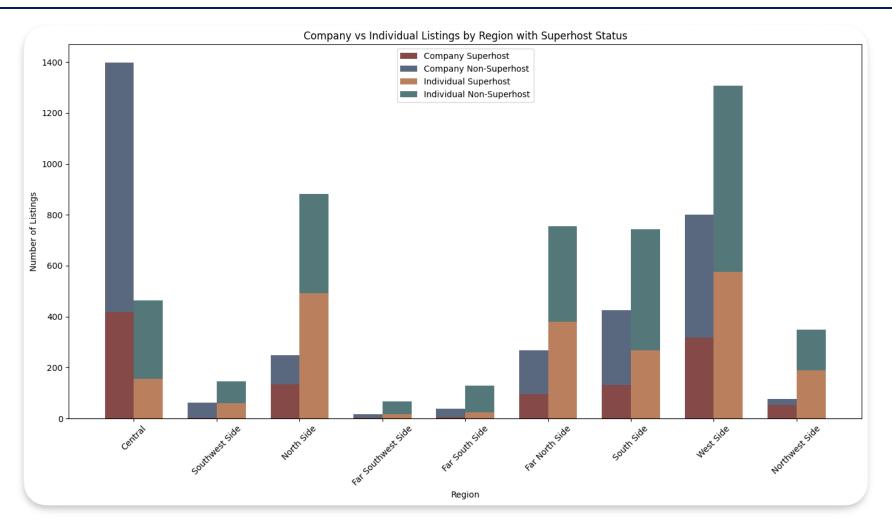
Individual hosts

Lower Quality listings | service





Companies have less Super Host





Super hosts: Company VS Human

Company Listings

• Non-Superhosts: 2,327

• **Superhosts**: 1,265

Individual Listings

• Non-Superhosts: 2,861

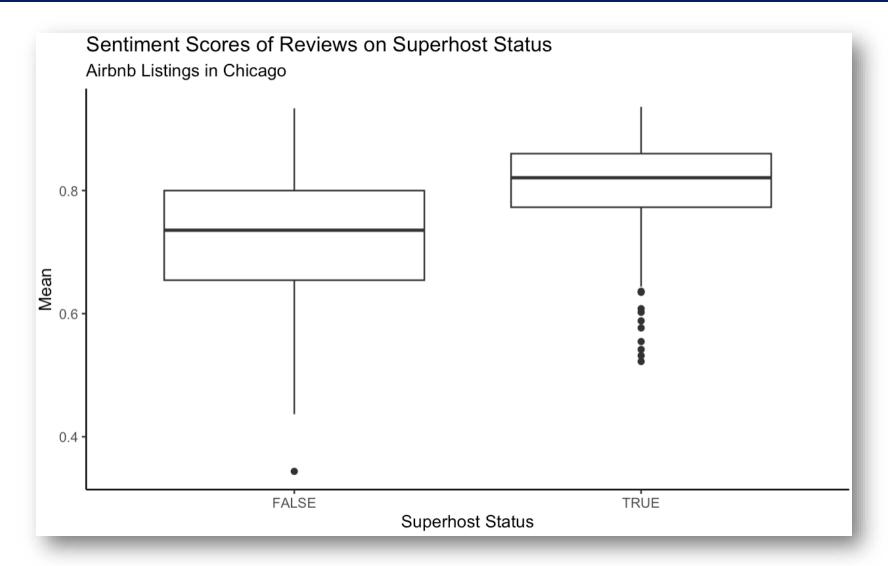
• **Superhosts**: 2,458

Metrics	Company Listings	Company Listings Individual Listings	
Average Rating	4.68	4.80	
Average Price (\$/night)	\$166.28	\$157.50	
Total Number of Reviews	113,817	304,690	

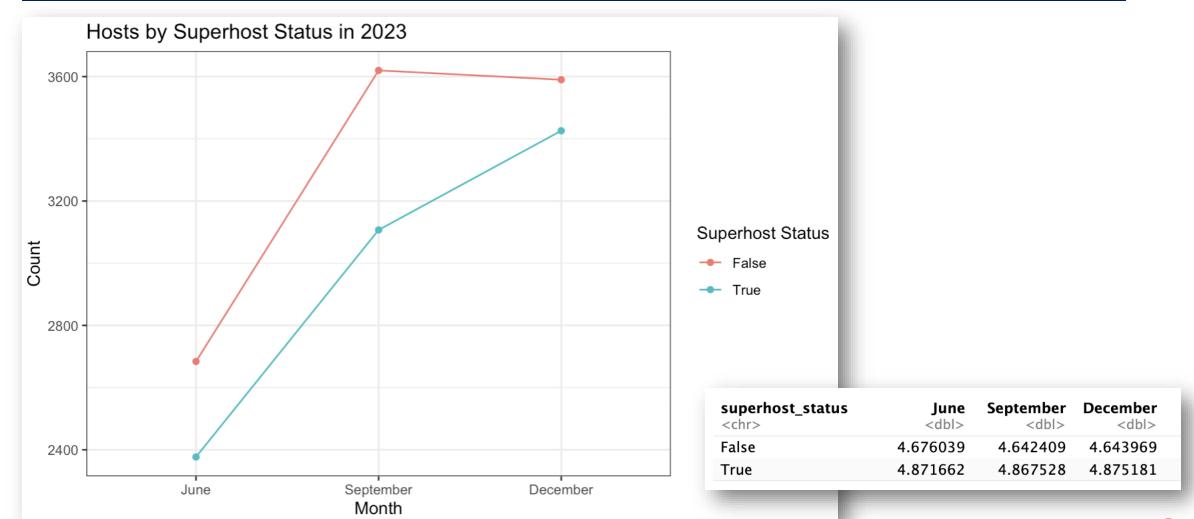
Metrics by Superhost Status

Category	Metrics	Company Listings	Individual Listings
Non-Superhost	Average Rating	4.55	4.70
	Average Price (\$/night)	\$155.79	\$154.81
	Total Number of Reviews	53,231	104,389
Superhost	Average Rating	4.85	4.89
	Average Price (\$/night)	\$188.06	\$160.49
	Total Number of Reviews	58,535	199,614

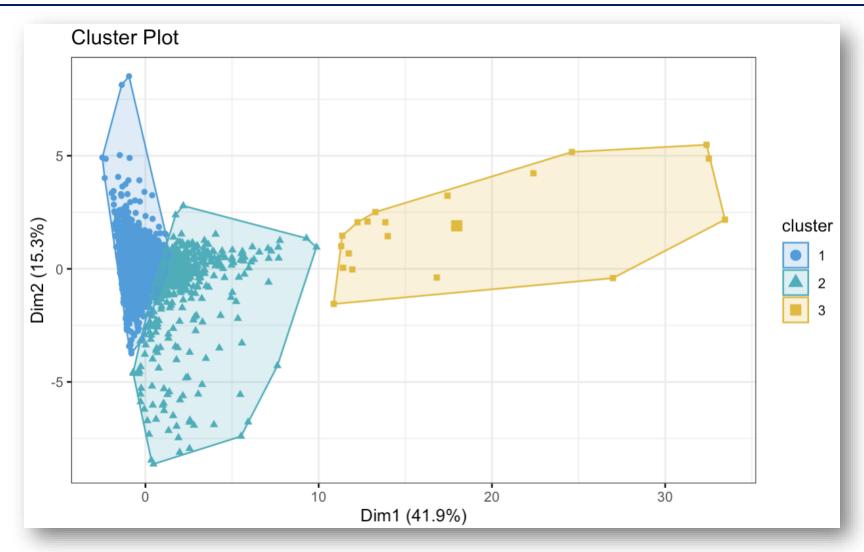




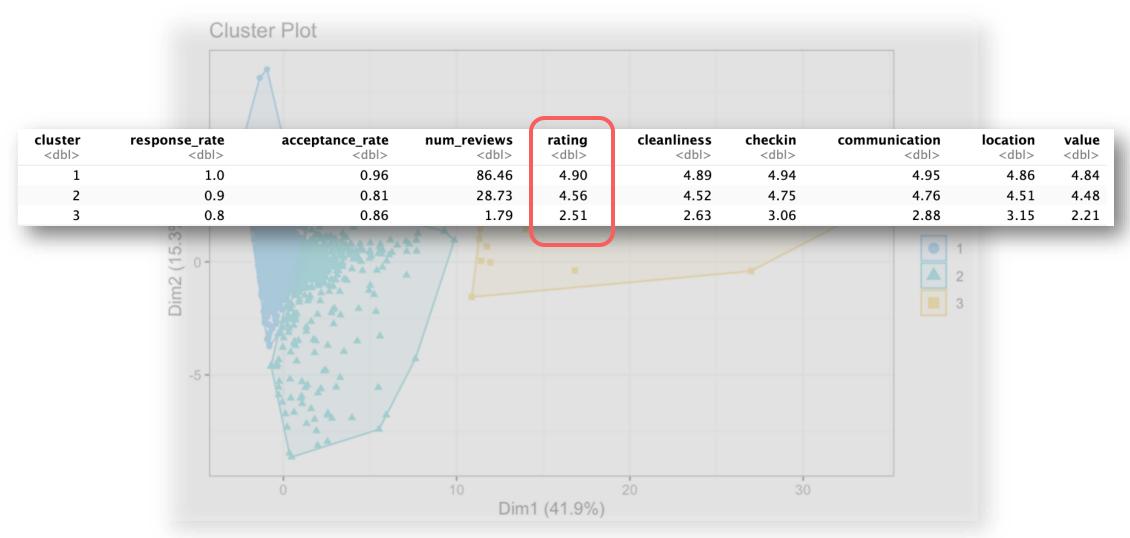














Conclusion

- Chicago city policies have higher influence on individual hosts
- Superhost program should focus on individual hosts
- Diversifying the superhost program will provide access to more hosts
- Expanding the superhost program will develop the Airbnb economy



Thank you



Q&A





Hilton Head Island, South Carolina 690 miles away May 1–6

\$953 night



Asheville, North Carolina 447 miles away May 5 – 10

\$927 night



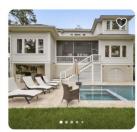
Asheville, North Carolina 439 miles away May 1–6

\$1,390 night



Chicago, Illinois 124 miles away May 4 – 9

\$5,600 night



Hilton Head Island, South Carolina

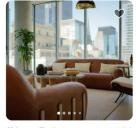
691 miles away May 25 – Jun 1

\$2,199 night



Chicago, Illinois 123 miles away May 14 – 19

\$2,359 night



Chicago, Illinois 123 miles away May 14 – 19

\$2,615 night



 \bigstar 5.0 Isle of Palms, South Carolina

691 miles away May 27 – Jun 1

\$7,250 night



Jefferson, North Carolina 444 miles away

Jun 30 – Jul 5

\$3,040 night



Atlanta, Georgia 486 miles away May 12 – 17

\$1,744 night



★ 5.0 Isle of Palms, South Carolina
Show map

*S away
17

\$3,125 night



Isle of Palms, South Carolina 690 miles away

Jun 1 – 6 \$5,250 night

Airbnb Luxe

