

Airbnb Suitability Analysis

From Airbnb lodging: Are people really satisfied with their experience?

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BACKGROUND



Airbnb, founded in 2008 in San Francisco, is an online community marketplace where people can list and book short-term lodging accommodations around the world. During several years of rapid growth, Airbnb connects travelers to a more diverse and authentic range of experiences in over 34,000 cities and 190 countries and is revolutionizing the traditional lodging market. As it claims, “Unforgettable trips start with Airbnb.”

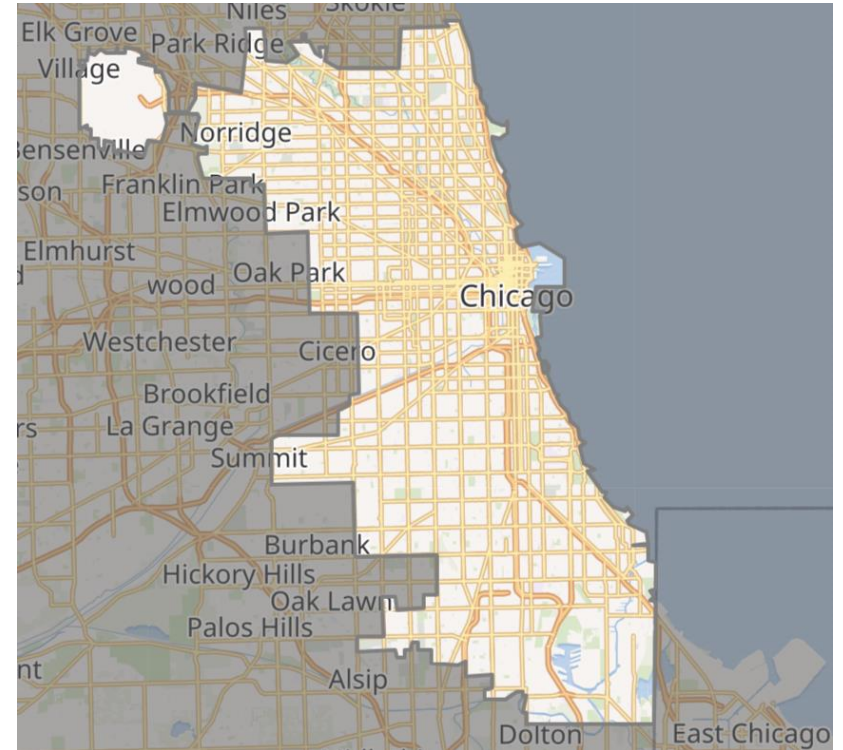
INTRODUCTION:

But are people really satisfied with their Airbnb experience? Descriptions of accommodations with Airbnb created by individual hosts are not likely to be as exactly as what the guests have expected. Other factors such as different travel purposes (vacation, business, etc.) and the surroundings of the lodge may also affect people's experience with Airbnb.

In this research, we are trying to analyze through people's reviews on Airbnb lodges and conclude some main aspects (e.g. transport, nearby facilities, security) they have mentioned. Then we can combine locations of accommodations, as well as restaurants, tourist attractions, etc. to evaluate from various perspectives above. Finally, based on the evaluation, we will create our own recommendation lists for different types of travel/travelers.

DATA

- Study area: Chicago
- Study period: 01/01/2015 to 01/01/2020
- Review of guests: Inside Airbnb website
- Locations of lodges: Inside Airbnb website
- Crime Data: one year prior to present
- Transport: Parking permit zone
- Restaurant: Food inspection data



METHODS: PART 1

- Extraction of guest comments and preprocessing using nltk.
- First, we extracted guest comments from recent 5 years and 1 year and get basic stats about the extracted comments.
- We select comments from two time periods: last 5 years (2015-03-01 to 2020-03-01) and last year (2019-03-01 to 2020-03-01).

Total number of comments received during past five years: 350661

Total number of comments received during the last year: 156119

METHODS: PART 1

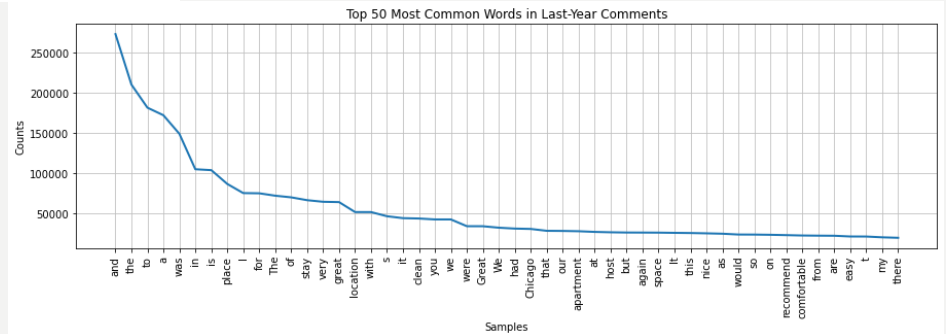
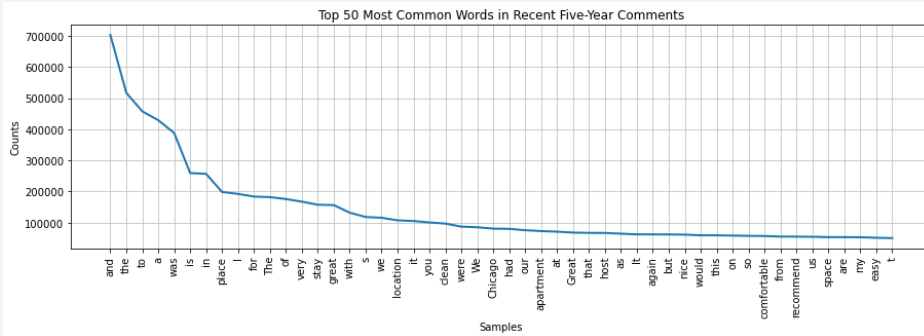
- Tokenize the txt file to produce a list of words and punctuation

Total number of sentences within last 5 year comments: 1281299

Total number of sentences within the last year comments: 520311

METHODS: PART 1

- Find top 50 most frequent words in the comments using FreqDist



RESULTS AND FINDINGS: PART 1

People did mention a lot words such as "places" and "locations" in their comments. We need further evidence if they refer to the surroundings of the Airbnb houses.

METHODS: PART 2

- Sentiment analysis and Word clouds
- We perform sentiment analysis of the comments within the last year and build word cloud to show the keywords expressing different sentiments.

Average positive score: 0.6315924115558283

Average neutral score: 0.7861341981911073

Average negative score: 0.6082982625482626

METHODS: PART 3

Keywords Extraction using RAKE

RAKE short for Rapid Automatic Keyword Extraction algorithm, is a domain independent keyword extraction algorithm which tries to determine key phrases in a body of text by analyzing the frequency of word appearance and its co-occurrence with other words in the text.

RESULTS AND FINDINGS: PART 3

- People tend to give negative comments when they receive unfriendly treatment or the house itself lacks necessary facilities.
- Positive comments describe guests' comfortable experience during the stay. Locations and closeness to nearby places are among popular reasons.
- People talk about the surroundings of their places mostly in a neutral tone.
- Word Cloud and RAKE process the same comment text in different ways. RAKE helps uncover important phrases of the comments, and lots of them are related to the spatial context of the houses, such as parking and food.