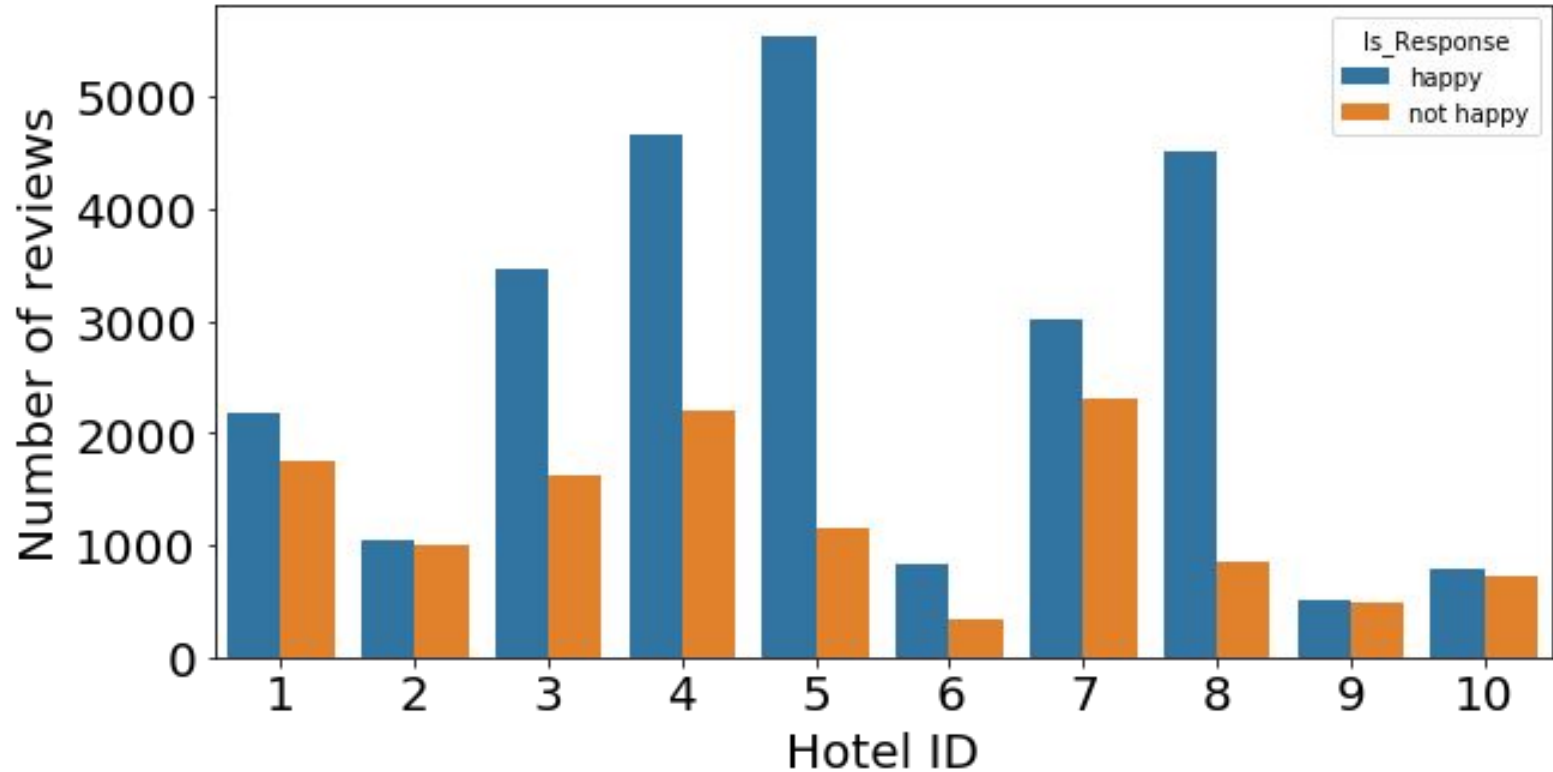# Happy Hotel

Celia Eddy

Context

- I work in the CX team of a large hoteling chain

- We get hundreds of reviews from our 10 hotels each day

  - "Happy" or "not happy"

- How is each hotel performing at a more granular level?

- What are the topics in these reviews?

- What recommendations should I make to the managers of each hotel?

What is the distribution of reviews?

What are the most common words?
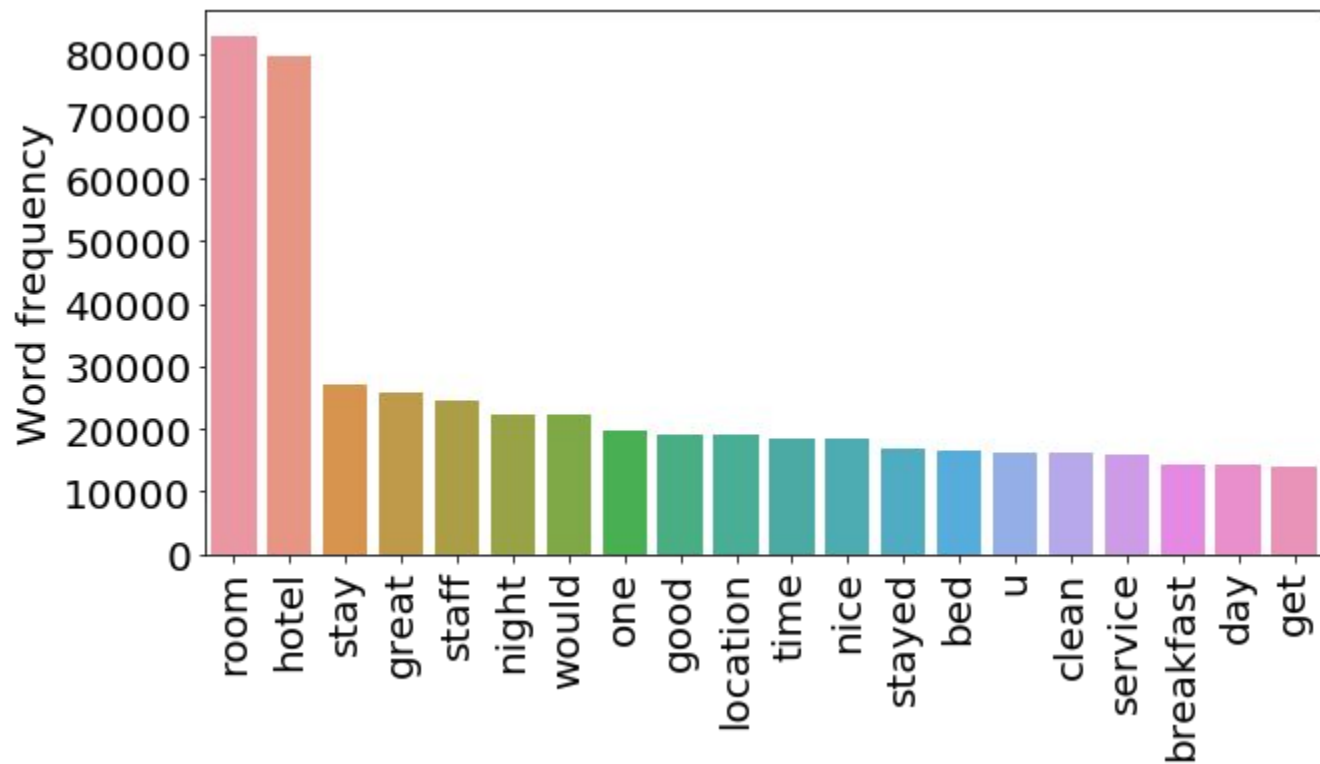
Text Preprocessing

- Remove most common words - room, hotel, night, etc.

- Remove frequently occurring misspelled words - u, wa, th, etc.

- Remove proper nouns - Los Angeles, San Francisco, etc.
  - POS tagging

- Remove words with extremely positive or negative sentiment - great, terrible, etc
  - VADER sentiment score on individual words

Topic modeling

- Performed LDA on the combined set of reviews for all hotels

1. Transportation to and from the hotel   (airport/shuttle/taxi)
2. Value for money   (place/small/price/much/little)
3. Front desk and interactions with staff   (desk/front/check/told)
4. Pet friendly   (dog/pet/carpet)
5. Service experience   (staff/service/experience/guest)
6. Nearby attractions   (subway/central/square/tour/walk)
7. Room quality   (shower/bed/bathroom/tv/air)
8. Hotel amenities - food and parking   (breakfast/restaurant/parking)
9. Events and nightlife   (bar/drink/wine/lounge/wedding/party/club)
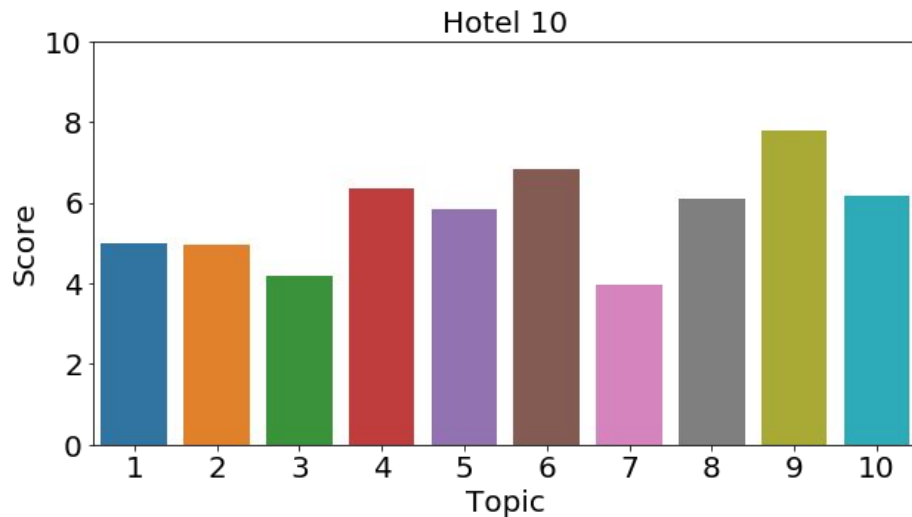10. Family friendliness   (pool/suite/family/kid/child/daughter)
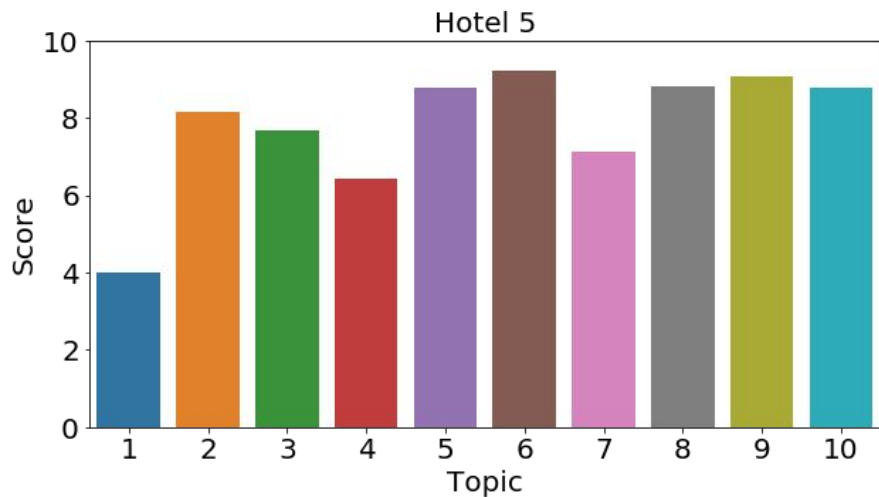
Topic modeling

- Performed LDA on the combined set of reviews for all hotels

- For each review, assign up to three topics
  - Each of these topics must make up at least 10% of review

Topic modeling
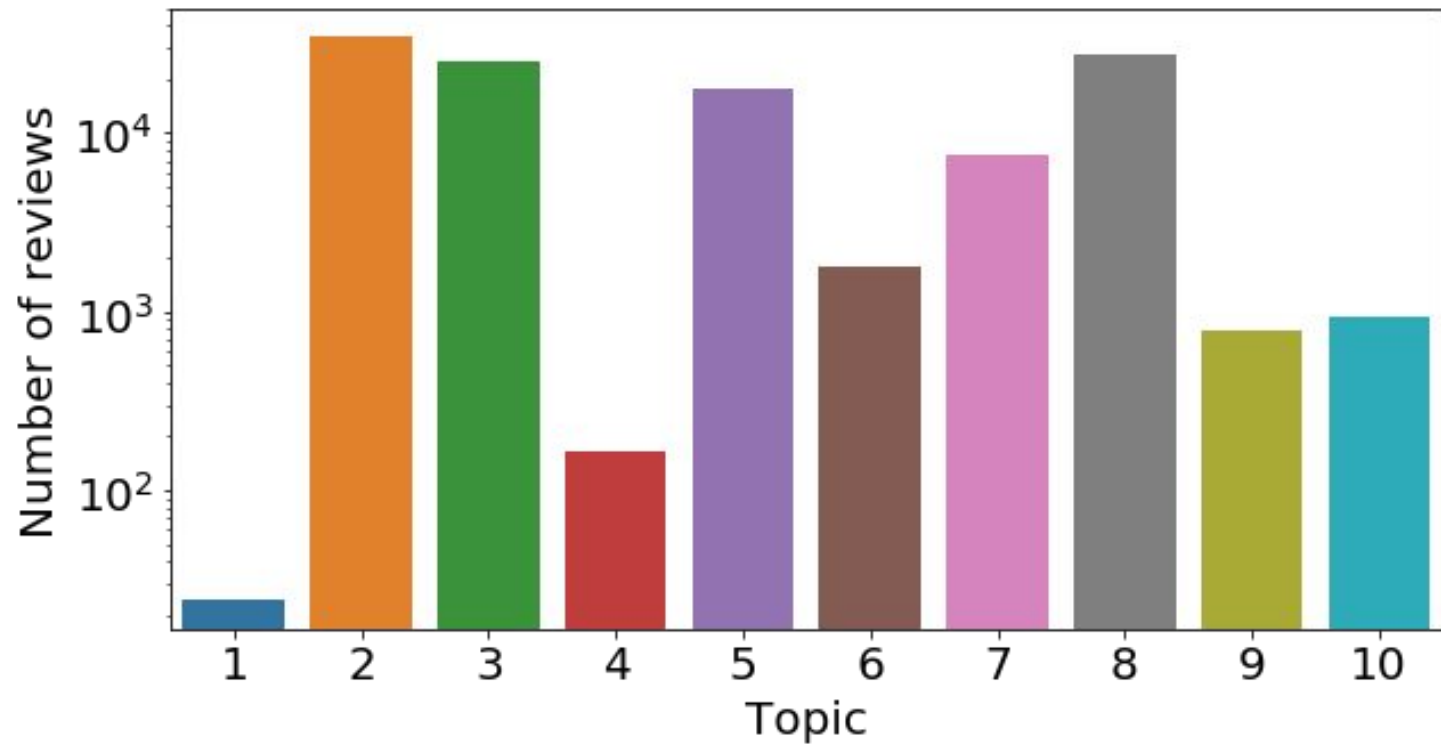
Topic scores by hotel

Score = 10*(positive reviews)/(total reviews)

Topic scores by hotel:
Hotel number 10

Topic	Score	Review Percentage
7	3.97	7.6%
3	4.19	23.0%
2	4.96	30.1%
1	5.0	0.0%
5	5.84	14.1%
8	6.11	22.0%
10	6.18	0.8%
4	6.36	0.2%
6	6.82	1.5%
9	7.78	0.6%

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Topic scores by hotel:
Hotel number 10

Improvements can be made in several areas:

- Service and interactions with staff - train staff to be friendlier with customers
- Value - decrease price

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Recommendations to hotel managers

- For each hotel, I can provide the scores for each topic

- The **most commonly reviewed topics** with the **lowest scores** will form the basis for the recommended improvements

  - For all of the hotels, the majority of the low-scoring review topics relate to service and value

  - The score for room quality is often even lower, but there are always fewer reviews about that