

Topic Modeling for Customer Insight

Saxa 3

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Problem Statement

- Poor reviews negatively impact reputation and future bookings.
- Objective: Identify common complaint themes in poor hotel reviews.
- Approach: Apply text analytics and topic modeling to Yelp reviews.

Data Prep

Vectorize Text



Initial Exploration

Review unigrams, bigrams, and trigrams. Identified custom stop words.



Fit LDA Model

Using bigrams, remove english stop words and identified custom words, four topics

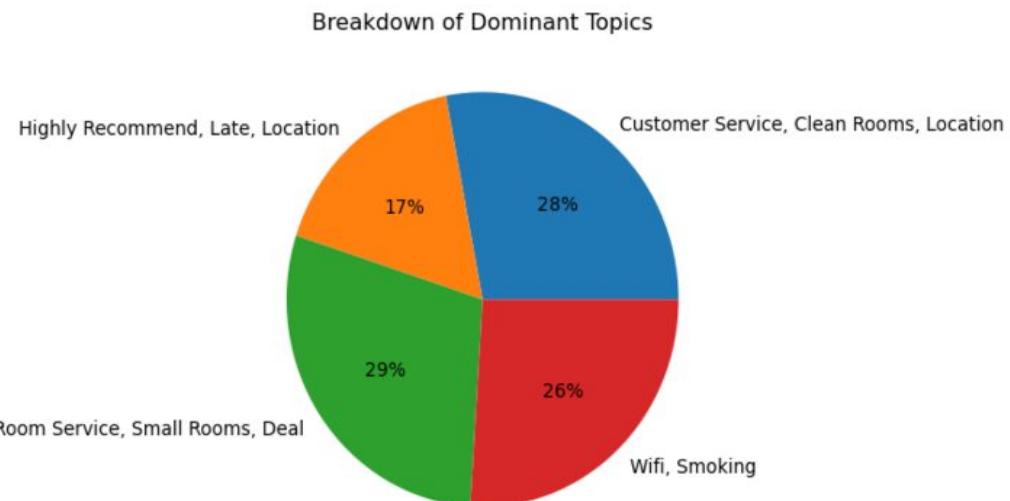


Map Topics for Analysis

Overall Topics Identified

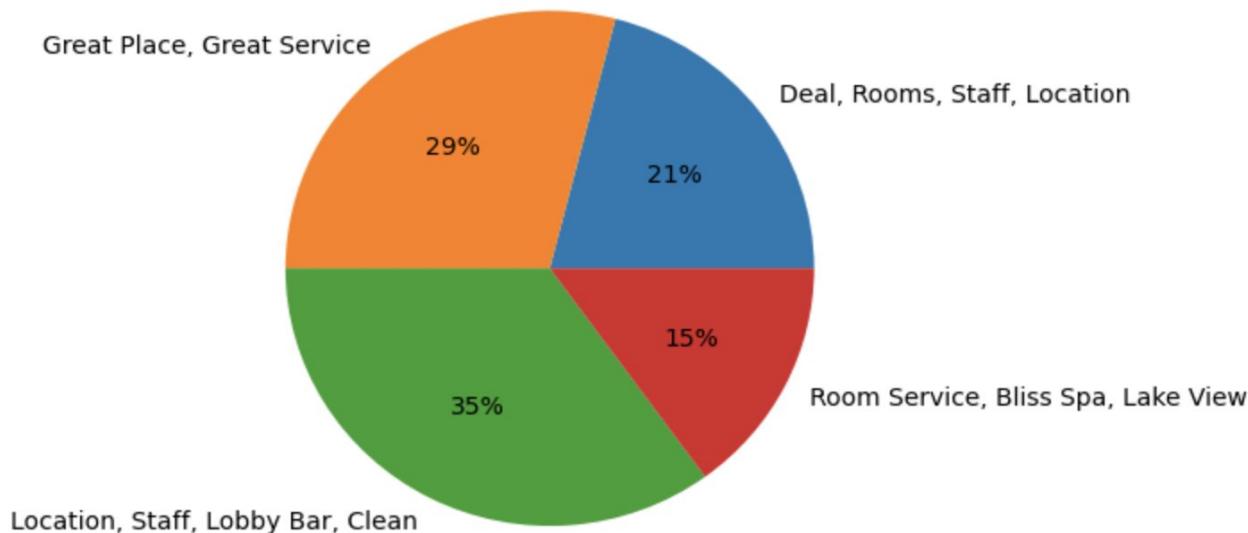
From the notebook's "All Reviews" model:

- **T1 – "Stay/Logistics & Wi-Fi":** *stayed nights, wifi, felt like, smoking room, place stay*
- **T2 – "Recommendation & Access":** *feel like, highly recommend, make sure, late check, block away*
- **T3 – "Service & Cleanliness & Location":** *customer service, great location, staff friendly, room clean, got room*
- **T4 – "Room/Deal/Size":** *room service, rooms small, room small, definitely stay, great deal*
Read: Location, staff, cleanliness come up constantly; room size and Wi-Fi also loom large.



Happy Reviews

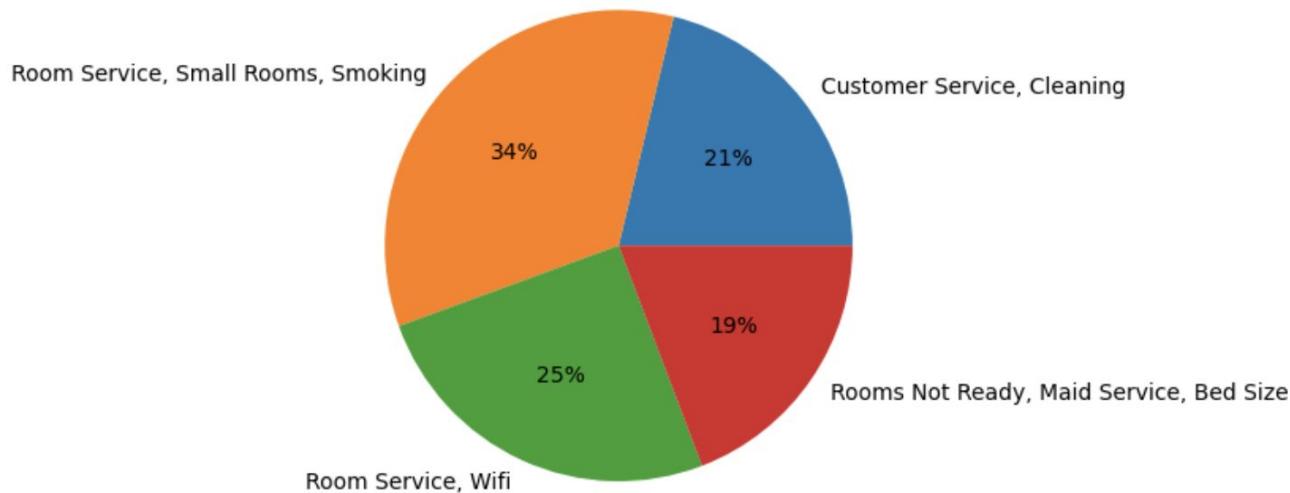
Breakdown of Dominant Topics - Happy Customers



Happy: *friendly staff, clean rooms, quick check-in, quiet stay.*

Unhappy Reviews

Breakdown of Dominant Topics - Unhappy Customers



Unhappy: *lines/delays, cleanliness misses/rooms not ready, Wi-Fi trouble, smoking odors, friction at check-in and reliability issues.*

Customer Characteristics

	Positive Reviews	Negative Reviews
Number of Reviews	540.00	202.00
Avg Useful Votes	0.90	1.00
Avg Cool Votes	0.59	0.27
Avg Funny Votes	0.33	0.44
Avg Total Engagement	1.82	1.71
Median Total Engagement	0.00	1.00

Takeaways:

- Unhappy customers will typically write longer reviews compared to happy customers.
- Potential customers engage more with the positive reviews.
- How potential customers engage with reviews differ between positive and negative reviews.

New Hotel Focus

Short Term:

Evaluate room service operations and address bottlenecks.

Evaluate room cleaning operations, address bottlenecks, establish cleaning standards.

Establish customer service standards.

Implement a strict 'Do Not Disturb' policy.

Implement a no smoking policy in hotel rooms.

Long Term:

Consider offering free internet service.

Engage with an interior designer to explore options to make rooms 'feel bigger'.

Main Takeaways & Recommendations

Takeaways:

- Customers choose our hotel because of the location.
- The lobby bar and bliss spa key features that customers like.
- Customer, Room, and Cleaning Services are inconsistent.
- Customers find the rooms small.

Recommendations:

- Evaluate the customer, room, and cleaning services. Address bottlenecks and establish standards.
- Implement a no smoking policy in rooms.
- Explore free internet offering.
- Explore options to make rooms 'feel bigger'.

Thank You!