A1: Combined assessment: Text Mining / NLP

(Business Analysis with Unstructured Data)

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Executive Summary:

The analysis of Airbnb listings provides insight into what makes an Airbnb stay special for guests. Study of a dataset to identify the description, amenities, and services that attract bookings. guests prefer listings that offer a fully equipped, private, and well-located home base. Words like "apartment," "kitchen," and "beach" were prominent in successful listings. In addition, guests are drawn to experiences that highlight being located "in the heart of" a city, indicating a desire to be at the center of the action. Surprisingly, it also found that listings with stricter cancellation policies received higher satisfaction scores, suggesting that clear expectations and reliability are more important to guests than flexibility. The emotional tone of successful listings was predominantly positive, with "trust" and "anticipation" being strongly featured. Listings that evoked these emotions tended to command higher prices, indicating a correlation between emotional connection and financial performance. The comprehensive Tableau dashboard analysis of Airbnb listings reveals high guest satisfaction in diverse locales, notably in Brazil and China. Rapid host response times correlate with positive reviews, and the busiest month would be February with 2314k of bookings. Overall findings demonstrate that successful Airbnb listings combine the comforts of home with the promise of an authentic experience, communicated with clarity and confidence. These insights can empower hosts and inform Airbnb's market strategies.

Text data analysis

The most frequent word appears to be related to "apartment," indicating that many hosts are listing entire apartments rather than shared spaces. Other high-frequency words like "bed," "kitchen," and "private" suggest that listings often emphasize sleeping arrangements, cooking facilities, and privacy, which are important factors for guests. The presence of words such as "beach," "city," and "station" points to the importance of location and accessibility in property listings. (See Fig.1).

The bar chart shows prevalent four-word phrases in Airbnb listings, with prominent terms about location, such as "in the heart of," indicating a marketing emphasis on central, strategic positioning. The use of phrases like "fully equipped kitchen" and "queen-size bed" indicates an emphasis on complete facilities, implying that hosts are matching their descriptions with guest preferences for comfort and ease. (See Fig.2). The box plot indicates generally positive guest experiences across Airbnb room types. Private rooms see slightly higher satisfaction, suggesting an opportunity for Airbnb to focus on these listings. The wide sentiment range for entire homes suggests varied experiences, while the lower range for shared rooms points to a consistent but more modest satisfaction level. Addressing outliers with negative scores could further enhance overall guest satisfaction. (See Fig.3). The heatmap analysis highlights a strong positive correlation between hosts' verified profiles and positive emotions in listings, suggesting verified profiles enhance guest trust. Super hosts also tend to evoke positive sentiments, underscoring the importance of Airbnb's Super host program in elevating guest satisfaction. (See Fig.4). The bar chart indicates that Airbnb listings with super strict cancellation policies garner the highest average sentiment scores, suggesting guests might appreciate the certainty and structure these policies provide, whereas flexible policies receive lower average sentiment scores, potentially pointing to mismatched expectations. (See Fig.5). The word cloud indicates a clear trend: listings with luxury amenities like "Sonos sound system" and "Home theater" command higher prices, suggesting a market appetite for high-end entertainment options. Outdoor features such as "Hot tub" and "Beach chairs" also elevate listing prices, emphasizing leisure's value to guests. Convenience elements like "Central air conditioning" and "Permit parking" point to a premium on comfort and security. For hosts, investing in such amenities could justify higher rates, and for Airbnb, these insights could

refine recommendation algorithms and marketing strategies, targeting users inclined toward luxury experiences. (See Fig.6)

Tableau dashboard:

By looking at the global tapestry of guest satisfaction. Notice that highlights in Brazil, China, and Australia guests feel most at home. This international perspective directs us to where to focus our growth and customer satisfaction initiatives. The host responsiveness graph suggests a positive correlation between quick response times and the number of reviews, implying that prompt communication may lead to better reviews and more bookings' is the love season leading the total booking by month which uncovers the rhythms that define the busiest month, equipping us to anticipate and meet the demand. Differences in average prices between room types and countries could inform hosts on how to price their listings competitively while also indicating potential opportunities for Airbnb to adjust their service fees or promotions in specific markets. Differences in average prices between room types and countries could inform hosts on how to price their listings competitively while also indicating potential opportunities for Airbnb to adjust their service fees or promotions in specific markets. (See Fig.7)

Key Business Insights:

Premium amenities like home theaters are prime price influencers, highlighting a preference for luxury. Listings emphasizing a central location suggest a guest priority on accessibility and attractions. Host verification correlates with positive sentiment, underlining trust as a key factor for guests. Defined cancellation policies yield higher satisfaction, indicating guests value clear, reliable terms. The focus on private, well-appointed spaces in listings suggests guests seek comfort and convenience.
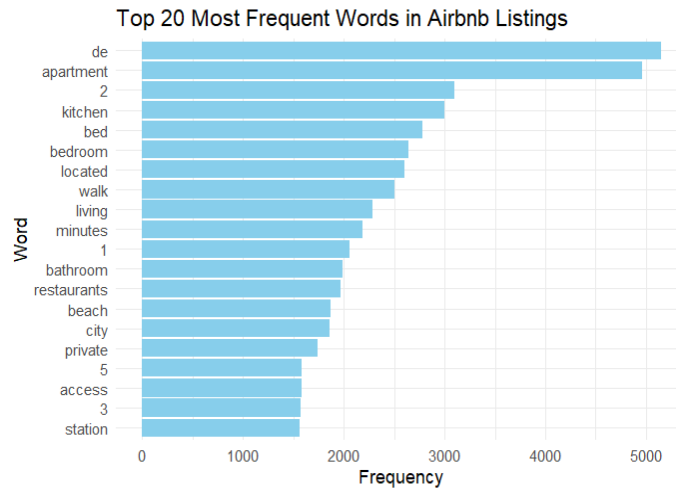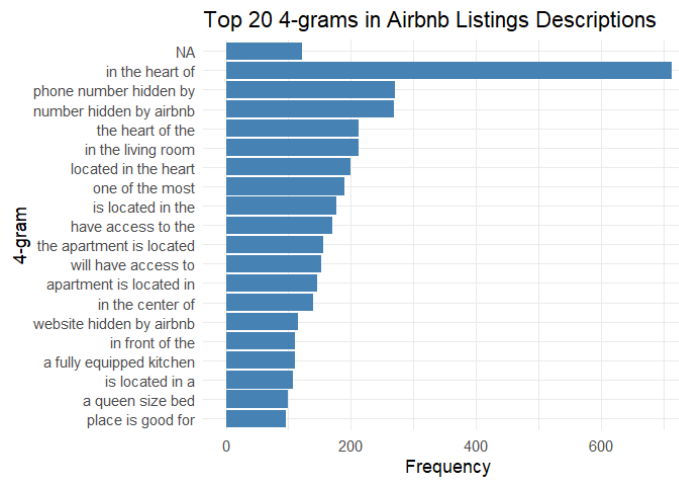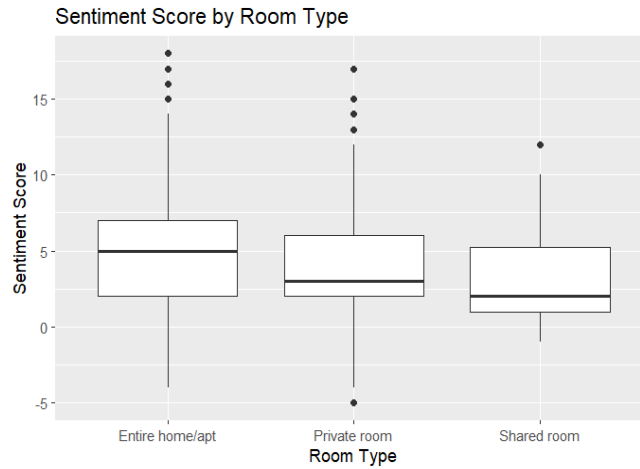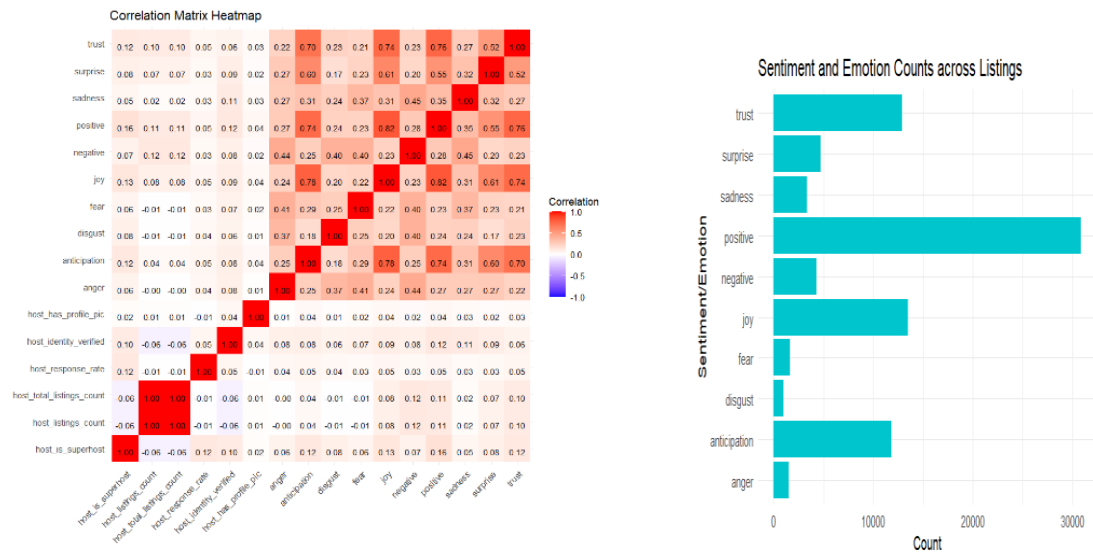
Appendix:

Top 20 Most Frequent Words in Airbnb Listings

Fig.1

Top 20 4-grams in Airbnb Listings Descriptions

Fig.2

Sentiment Score by Room Type

Fig.3

Fig.4

Fig.5

Fig.6

Fig.7