Sentiment Analysis and Review Length Analysis Report

Introduction

This report presents an analysis of customer reviews, focusing on two key aspects:

1. **Sentiment Analysis**: Categorizing reviews as positive, neutral, or negative based on their content.
2. **Review Length Analysis**: Analyzing the distribution of review lengths.

Data Preprocessing

Handling Missing Values

- Any missing values in the 'Review' column were filled with empty strings to ensure the analysis could be conducted without errors.

Sentiment Analysis

Methodology

The sentiment of each review was determined using the `TextBlob` library, which provides a polarity score:

- **Positive**: Reviews with a polarity score greater than 300
- **Neutral**: Reviews with a polarity score equal to 200
- **Negative**: Reviews with a polarity score less than 150

The distribution of sentiments is visualized below. The plot shows the frequency of positive, neutral, and negative reviews.

Distribution of Sentiments
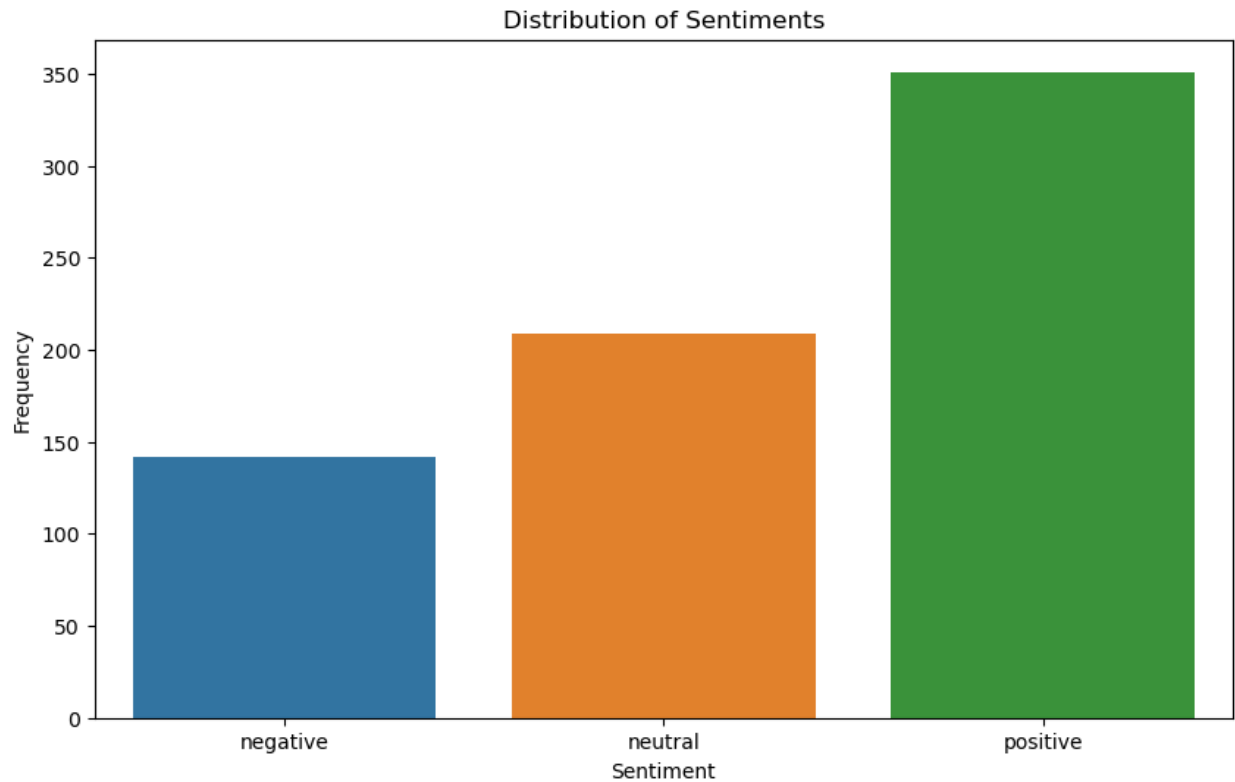
- **Positive Reviews**: up to 350
- **Neutral Reviews**: Above 200
- **Negative Reviews**: Above 130

Review Length Analysis

Methodology

The length of each review was calculated and the distribution was analyzed to understand the common lengths of customer reviews.

The distribution of review lengths is visualized below. The histogram shows the frequency of reviews based on their length.

Distribution of Review Lengths
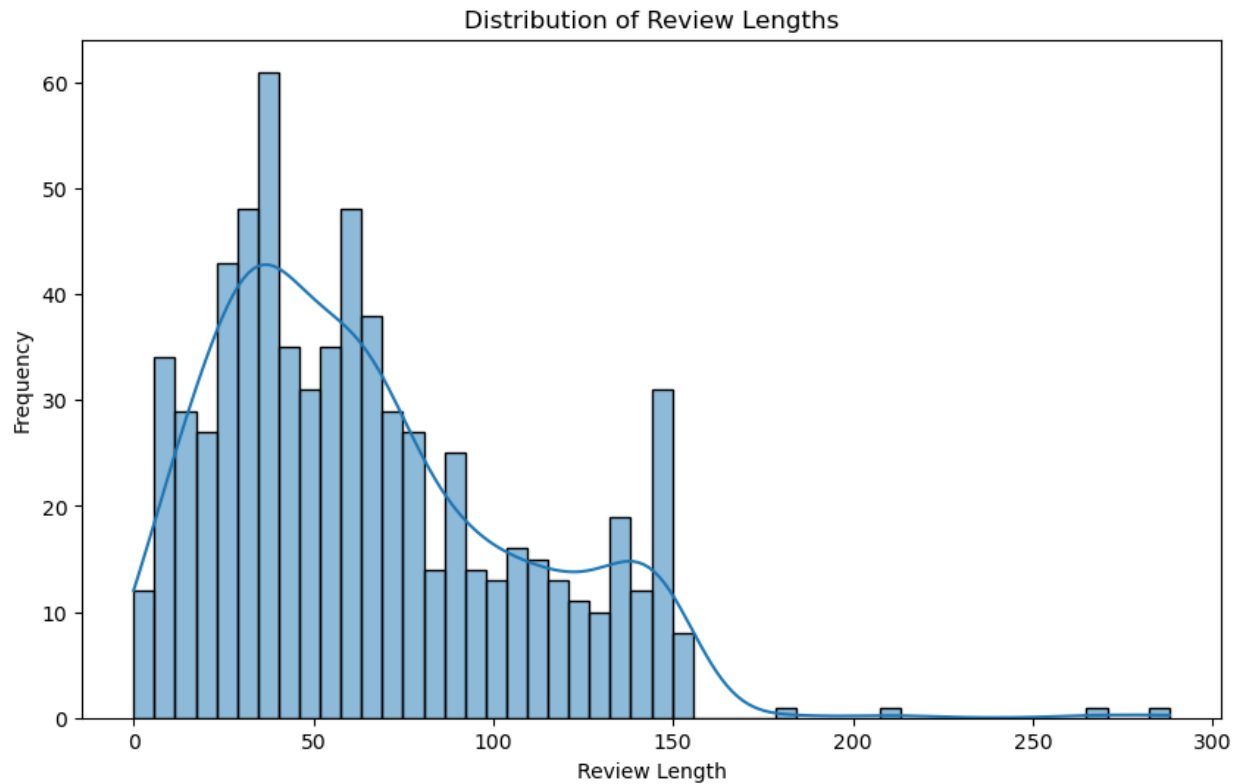
- **Average Review Length**: 300
- **Most Common Review Length**: The frequency of common review length is upto 20 to 40
- **Review Length Range**: 0 to 300

Conclusion

The analysis provides insights into the sentiment and length of customer reviews. These insights can help in understanding customer feedback and improving products or services accordingly.

- The majority of reviews are positive, indicating [general sentiment].
- Review lengths vary, with the majority of reviews being around [common length] words long.

Positive Reviews

Negative Reviews

Neutral Reviews