

A DATA SCIENCE PROJECT ON

CUSTOMER FEEDBACK ANALYSIS: A MOBILE PHONE REVIEW

BY DS TEAM 2

INTRODUCTION

- 93% of consumers say online reviews will affect their shopping choices.
- MobileTech, a leading provider of mobile devices and accessories is determined to improve their services with customer review data.
- However, extracting actionable insights from vast amounts of unstructured data poses a significant challenge.
- To address this challenge we propose the use of natural language processing (NLP) techniques to analyze mobile phone reviews effectively.



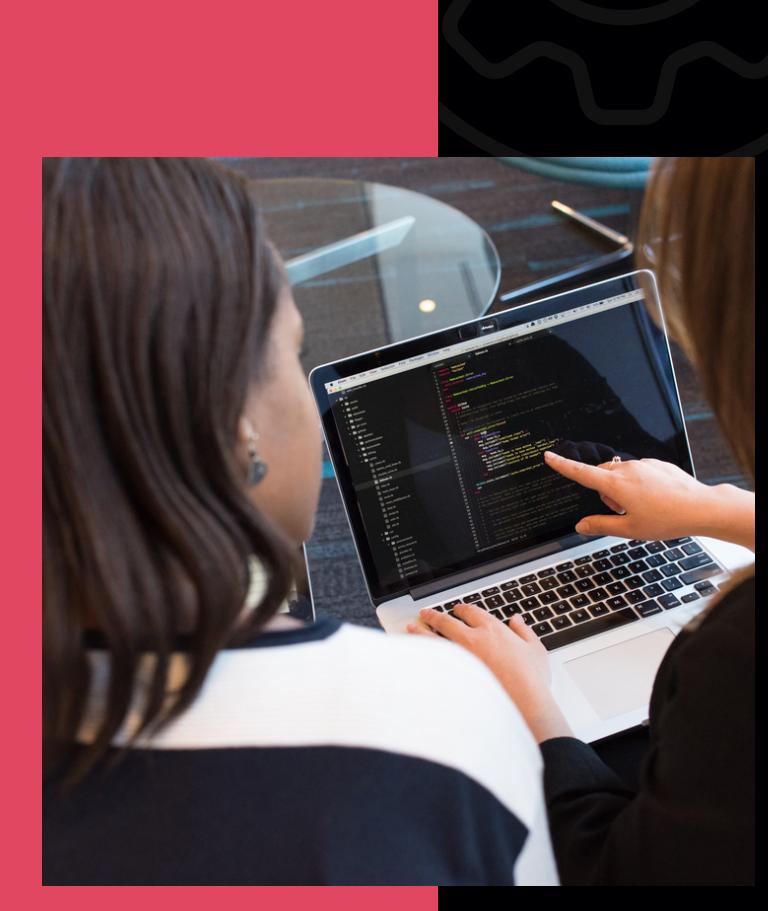
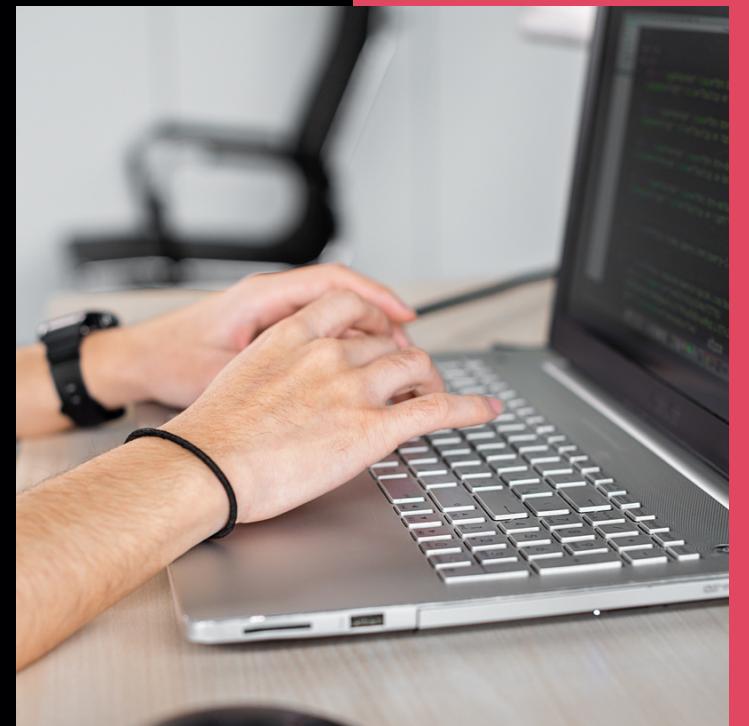


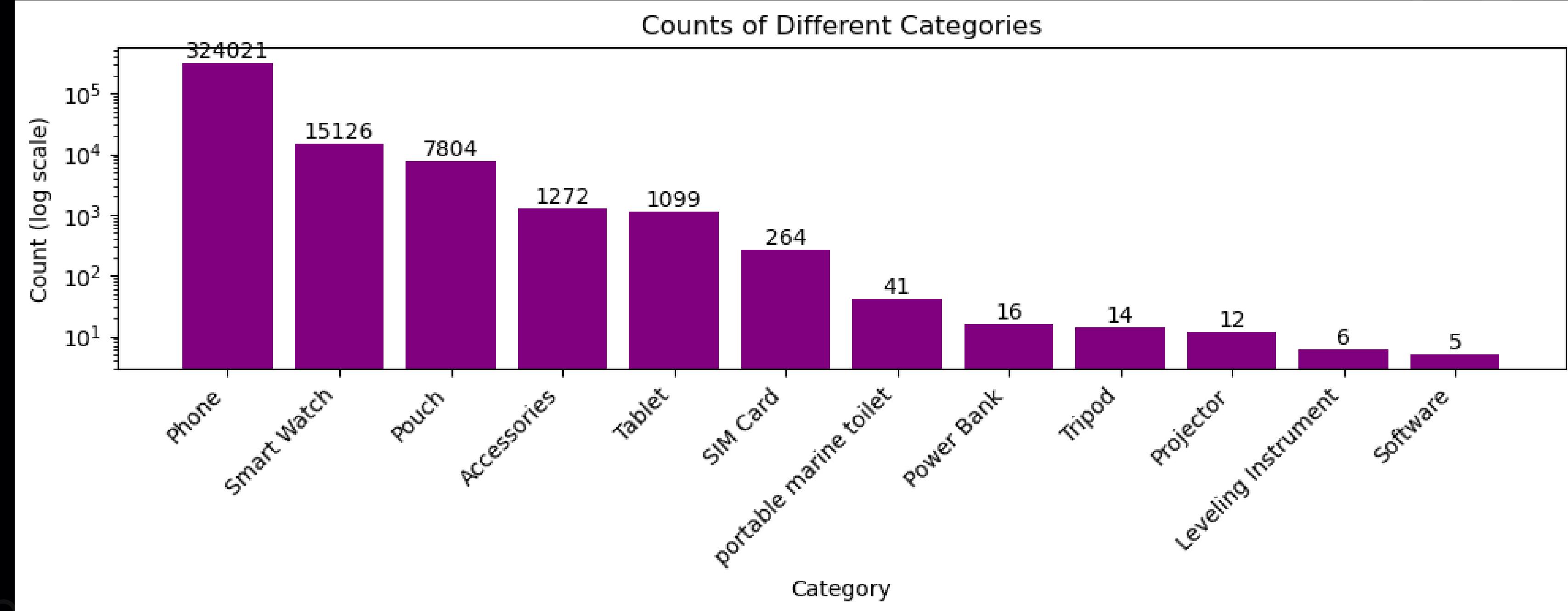
PROJECT SCOPE

- Loading the essential libraries and then reading the dataset.
- Visualizing the dataset using charts, graphs, etc., to understand the data better.
- Pre-processing the data using various data cleaning and manipulation techniques.
- Identifying the best parameters for the classification models using hyperparameter tuning.
- Applying multiple machine learning algorithms to train the models and evaluate their performance using different metrics.

DATA PROCESSING

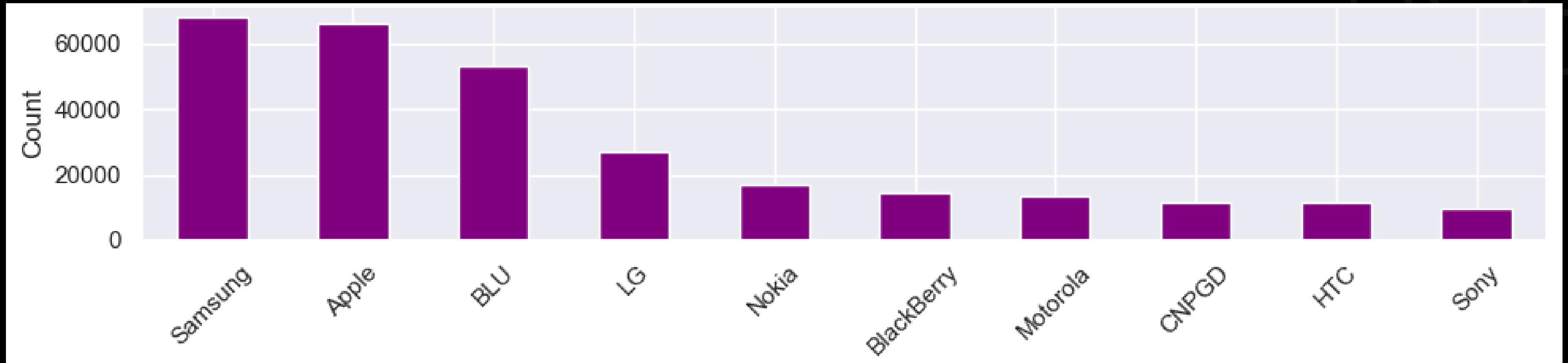
- The data contained several missing value, spelling inconsistencies, duplicates etc.
- Missing values were filled or dropped where required.
- Duplicates were eliminated.
- Spelling errors within the Brand Name were corrected to maintain consistency.
- Additional features such as product colour, review length, sentiments were engineered.



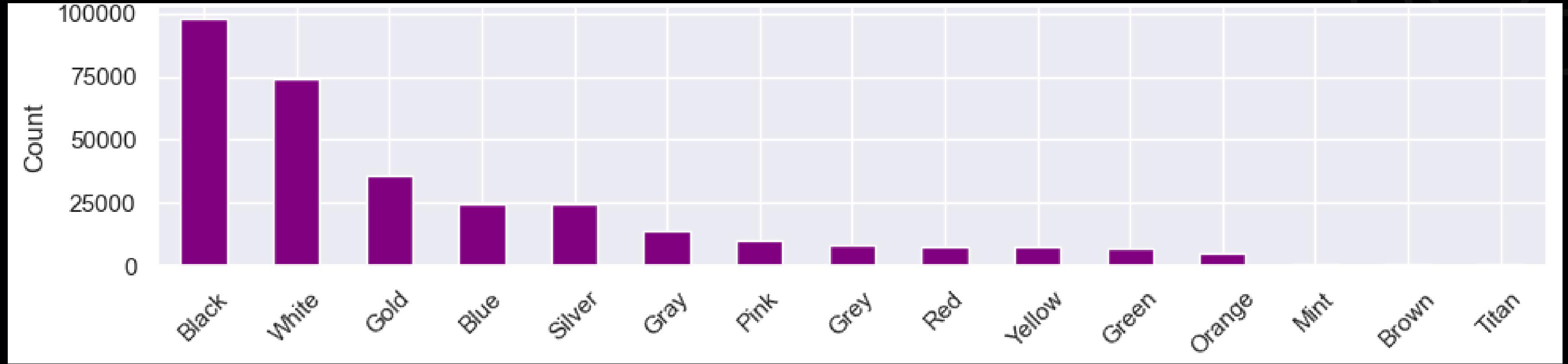


DATA EXPLORATION

93% of reviewed products were phones.
Other products were Smartwatches,
pouches, accessories etc.



Prominent phone brands making the highest sale were revealed in the initial exploration with brand such as Samsung, Apple and Blu sold more frequently than others.

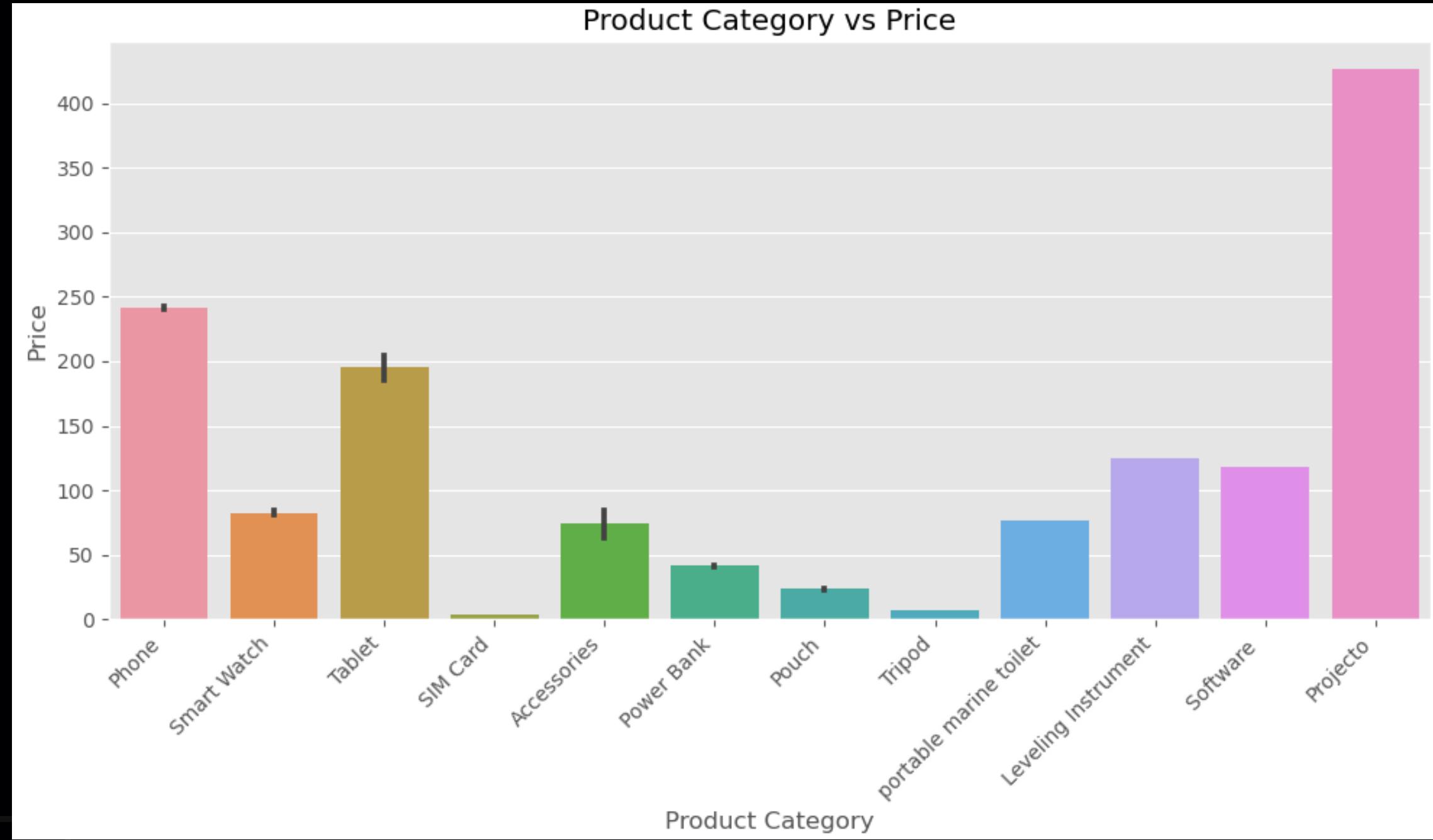


In terms of product colour, preference were highest with the black, white and gold coloured products.



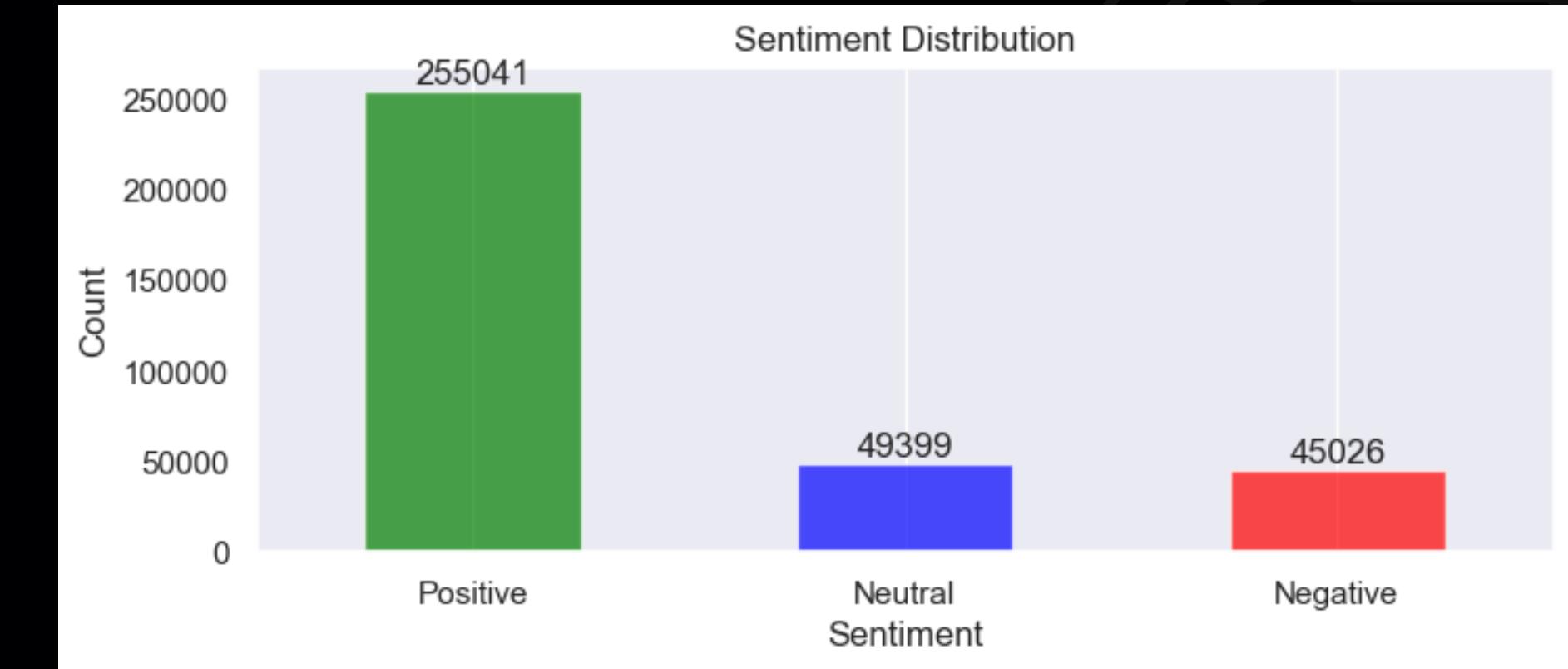
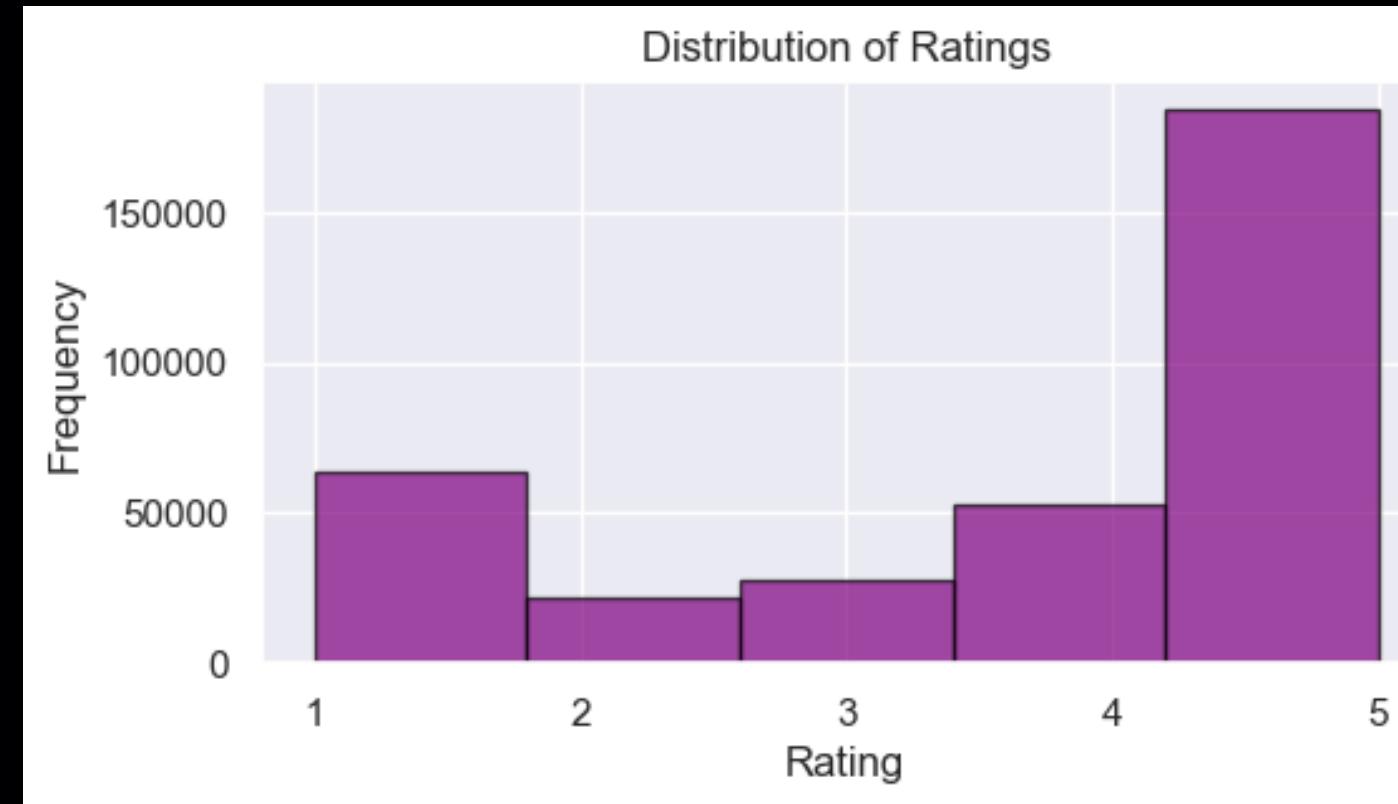
Positive skew in price distribution indicated that while majority of prices are within >1000, a few product cost higher.

We see here that price does not influence product rating.



The prices of the products in some category seem to vary somewhat as indicated by the vertical bars extending above the horizontal line representing the average price.

There is a large range in price between the most expensive and least expensive categories with projectors as most expensive and sim cards the cheapest.



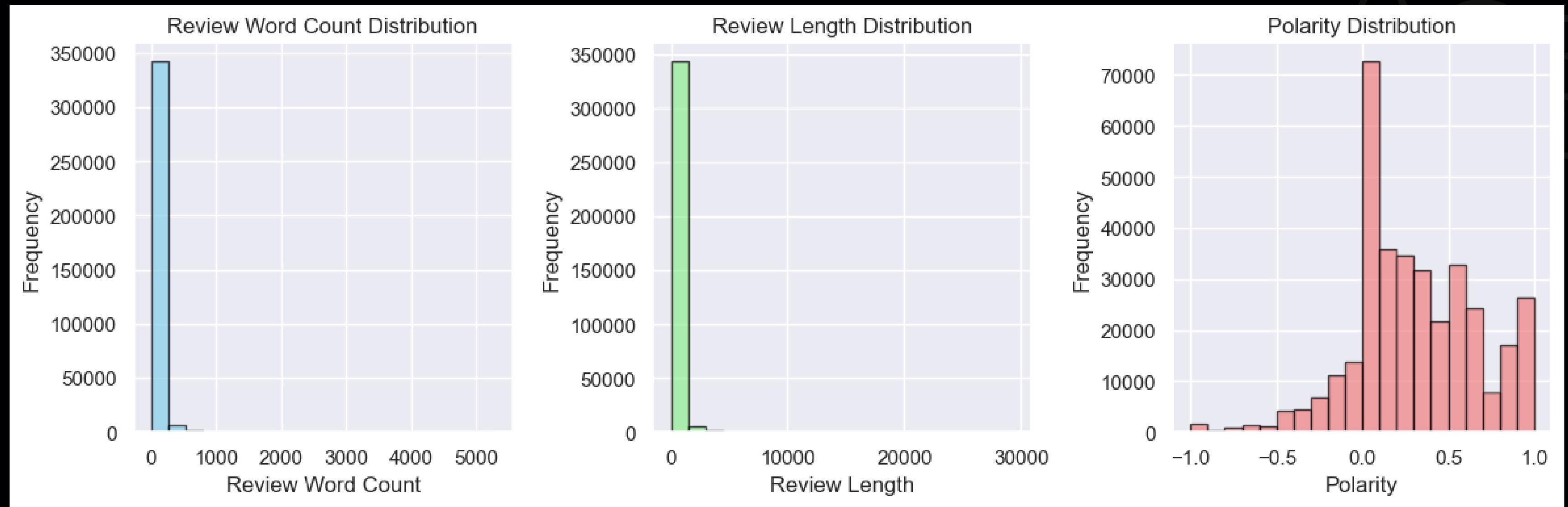
Rating distribution indicated that 73% of reviews were positive.
This is also seen in the sentiment distribution.

TEXT ANALYSIS

- What does the customer have to say?

Sentiment analysis helps businesses identify common pain points and issues faced by customers. This in turn help businesses pinpoint areas for improvement.





Customers had a lot say:

- Close to 350,000 reviews were left
- Median and mean review length were 20 and 48 words respectively
- Overall, sentiment polarity tended more to towards positive.



SALFORD & CO.



BUT WHAT WAS THE
CENTRAL THEME OF
THIS TALK?



REVIEW CLASSIFICATION BASED ON COMMON THEME

01

Positive product experience

02

Phone feature and performance

03

Product warranty

04

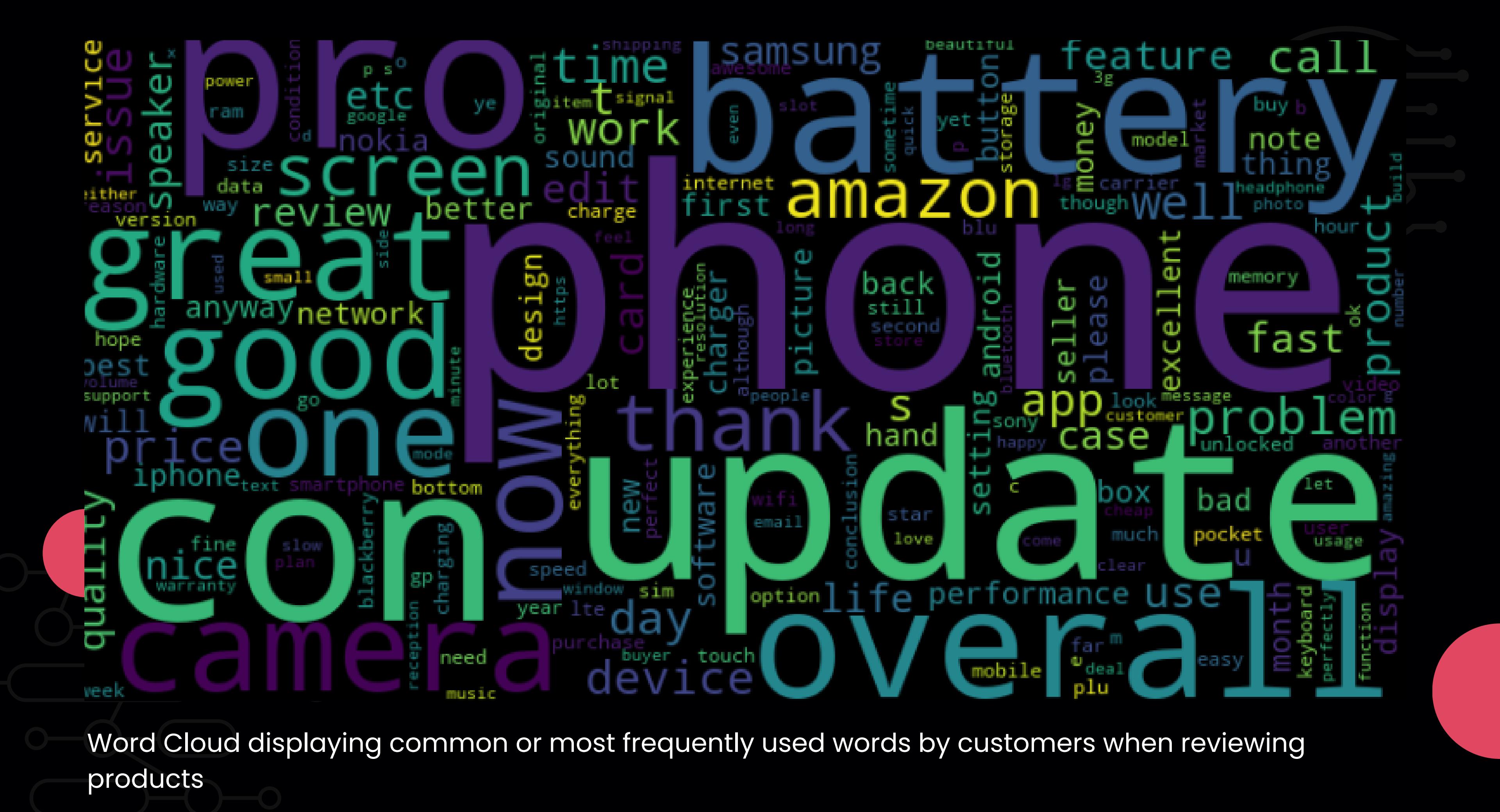
International compatibility and carrier services

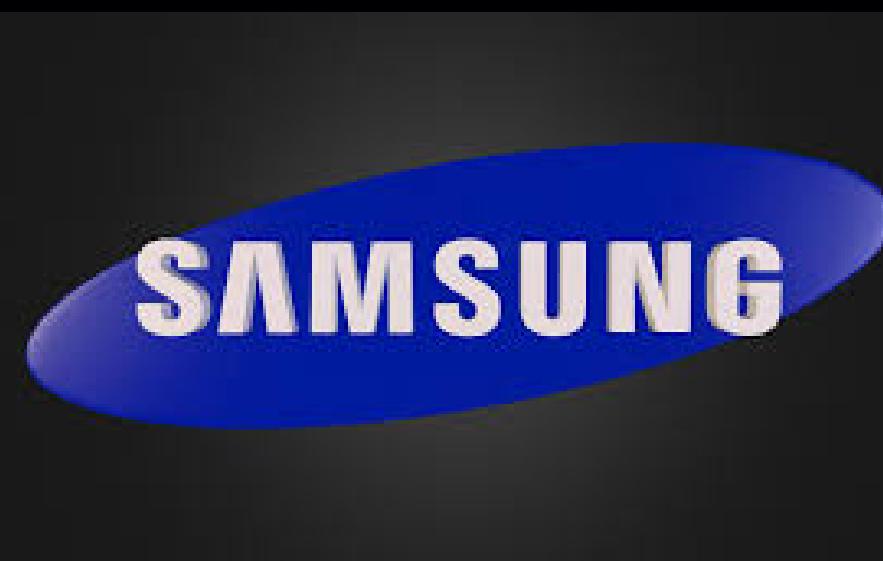
05

Storage, memory, battery, and charging experience

06

Concerns about older phones





SAMSUNG

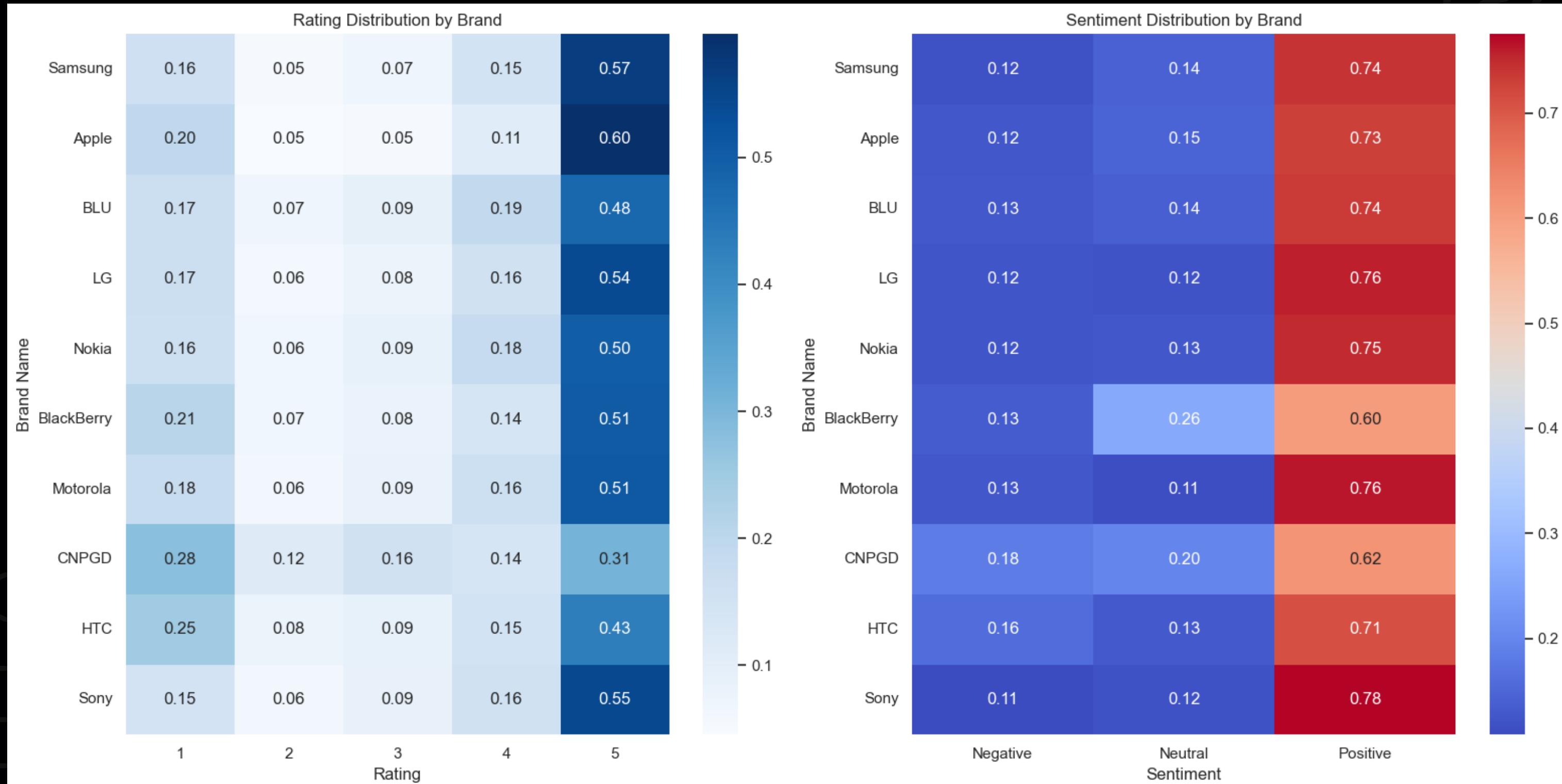
SONY



HOW ARE THE
BRANDS PERCIEVED
BY THE CUSTOMERS?



BRAND PERCEPTION BY RATINGS AND SENTIMENTS



Apple has highest concentration of 5-star rating and CNPGD the least within the top 10 products.
 Samsung, LG, Motorola and Sony have the most concentration on positive reviews.



CONCLUSION

- The sentiment analysis conducted on the reviews suggests that customers generally have positive sentiments towards the products.
 - Frequently mentioned product aspects such as update, battery, screen and camera which may guide product development and marketing strategies were identified.
 - Sentiment distribution revealed overall customer satisfaction. Trends can be tracked with polarity scores.
 - LDA analysis revealed main themes which business can use to prioritize areas to address and improve customer needs.
 - Finally, we gained insights into customers' perception of different brands based on their ratings and the sentiment expressed in their reviews.
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MEET OUR TEAM



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THANK YOU

