

CAPSTONE PROJECT

Text, Social Media & Web Analytics

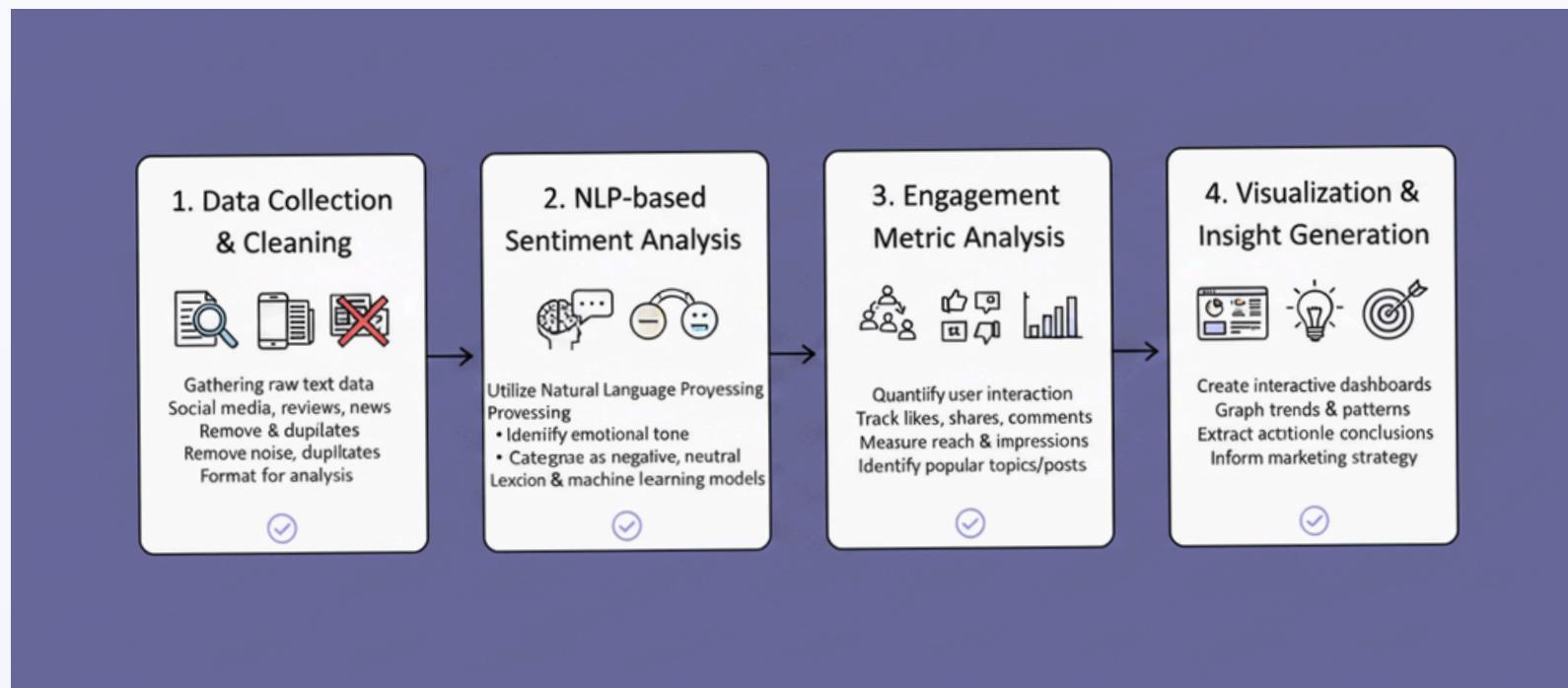
Title: "Advanced Sales Forecasting: A Machine Learning Approach to Market-Integrated Predictions"

ANALYZING PUBLIC SENTIMENT AND ENGAGEMENT TRENDS

**Abhishek Gantana
Reg no: 24MBMB03
MBA Business Analytics**

Problem statement & objectives

Problem statement & Methodology



Brands need real-time sentiment and engagement intelligence from digital text sources.

Rapidly evolving online narratives demand instant understanding.

Key Objectives

- Extract sentiment from social, review, and news data
- Visualize trends and engagement patterns
- Derive actionable insights for marketing and business strategy

Methodology

- Data Collection & Cleaning
- NLP-based Sentiment Analysis
- Engagement Metric Analysis
- Visualization & Insight Generation

Data & Implementation



Datasets Used:

- tweets_sample.csv
- reviews_data.csv
- news_headlines.csv

Preprocessing Steps:

- Tokenization, stopword removal, normalization

Techniques:

- Sentiment Analysis: VADER, TextBlob
- Keyword Extraction: Frequency & Word Cloud
- Engagement Analysis: Correlation between sentiment & likes/retweets

Data & Implementation

- Tweets_sample.csv
 - Reviews_data.csv
 - News_headlines.csv
-
- Tokenization
 - stopword removal
 - normalization



Techniques

- Sentiment Analysis: VADER, TextBlob
- Keyword Extraction: Frequency & Word Cloud
- Engagement Analysis: Correlation between sentiment & likes/retweets

Results & visual insights

Key Insights:

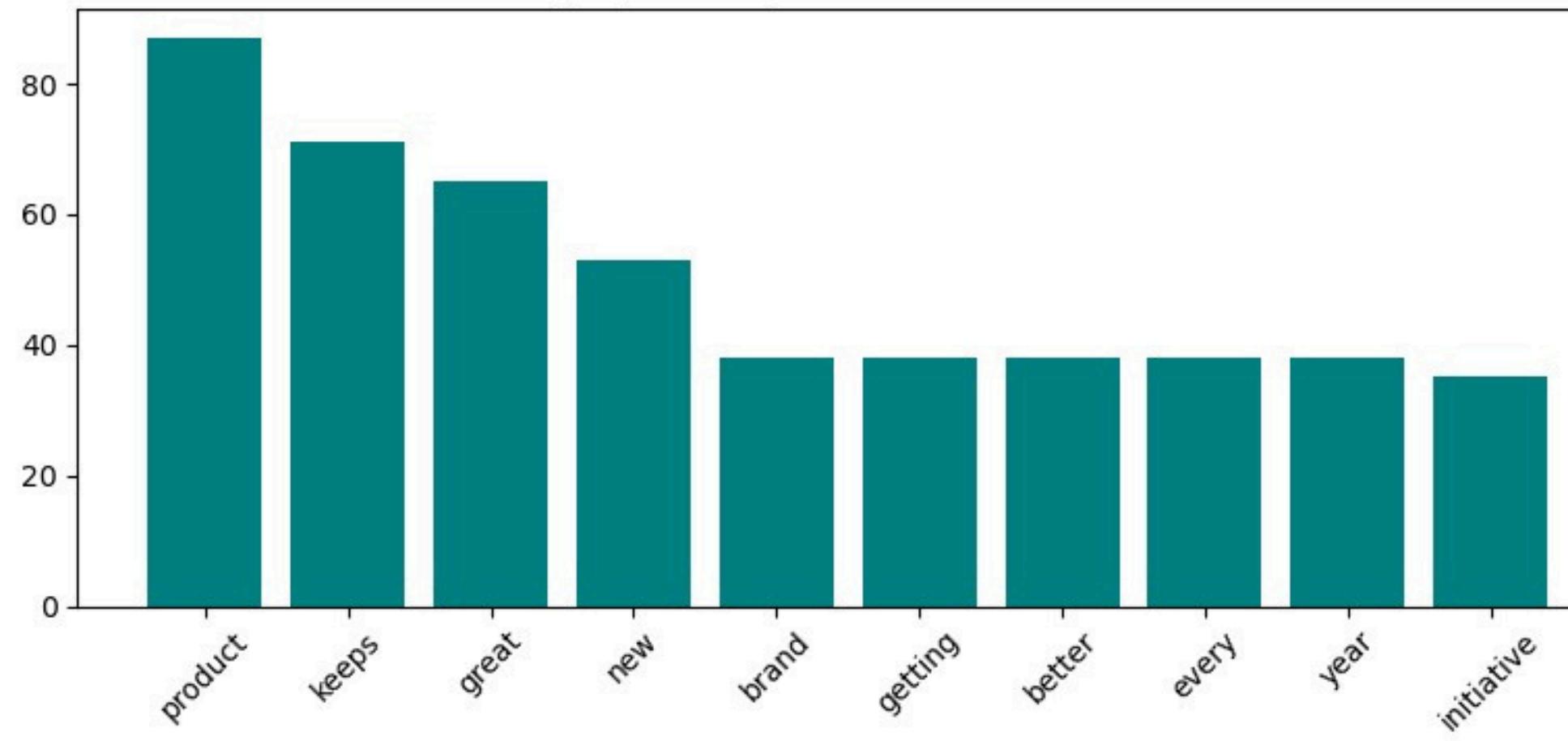
- Tweets show high polarity variance (~0.65 correlation between sentiment & engagement)
- Reviews are mostly positive (avg sentiment > 0.3)
- News headlines remain neutral, useful for event trend tracking

Visuals:

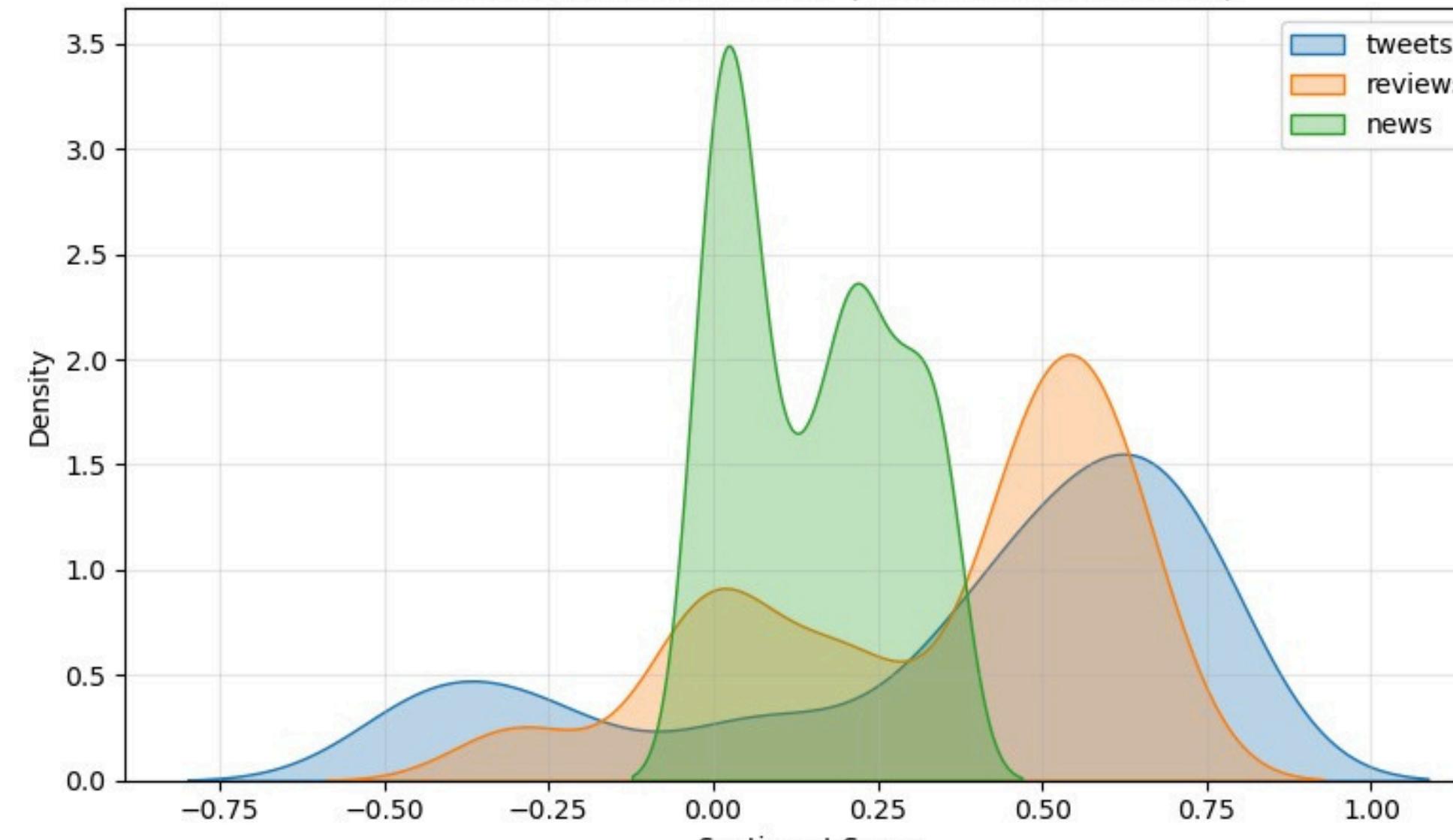
- Sentiment Distribution
- Tweets Word Cloud
- Final Dashboard Snapshot



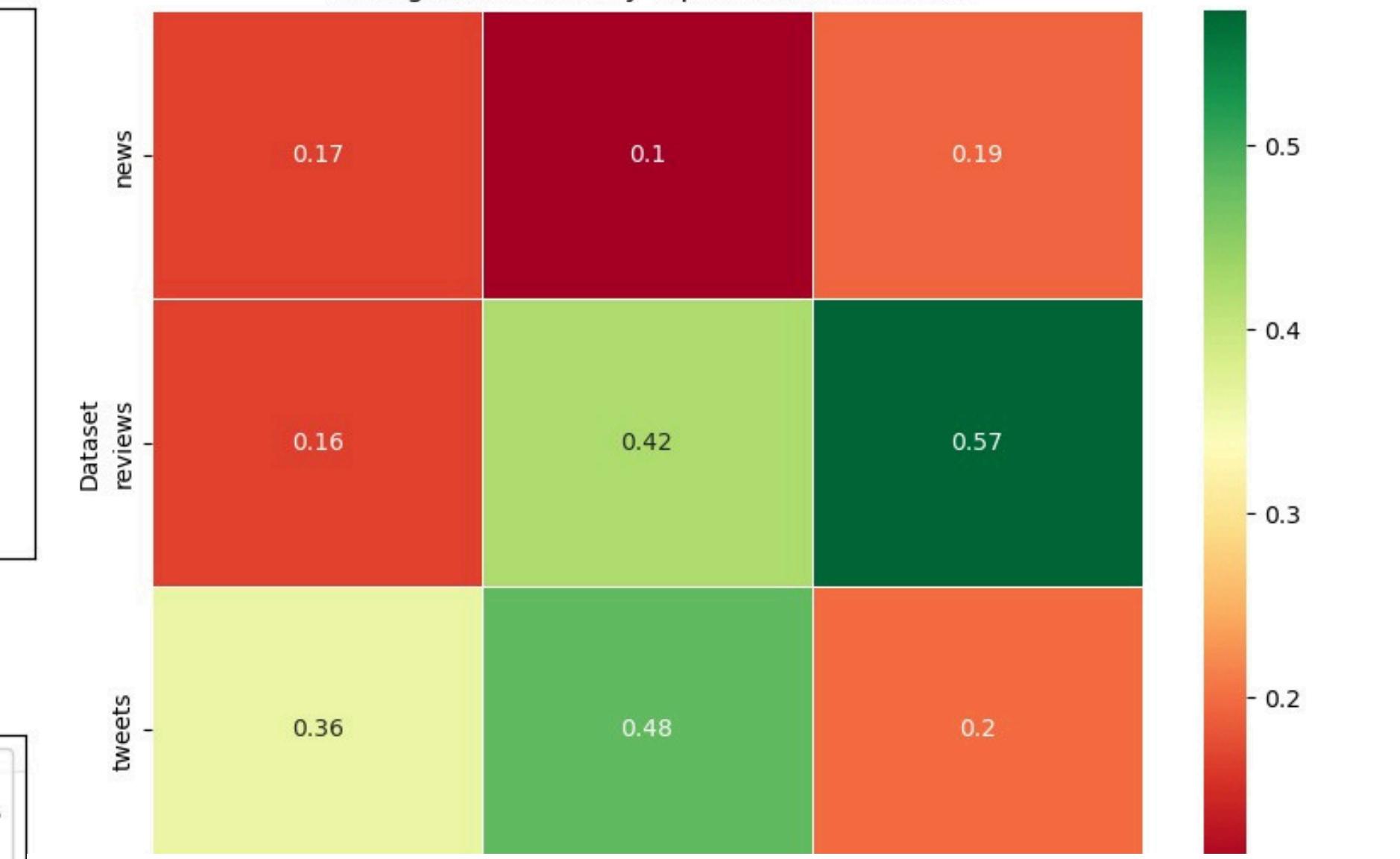
□ Top 10 Frequent Words — Tweets



Sentiment Score Distribution (Tweets, Reviews, News)



Average Sentiment by Topic Across Platform



WordCloud — Reviews

average worth sound quality still works worth price quality average use still month use

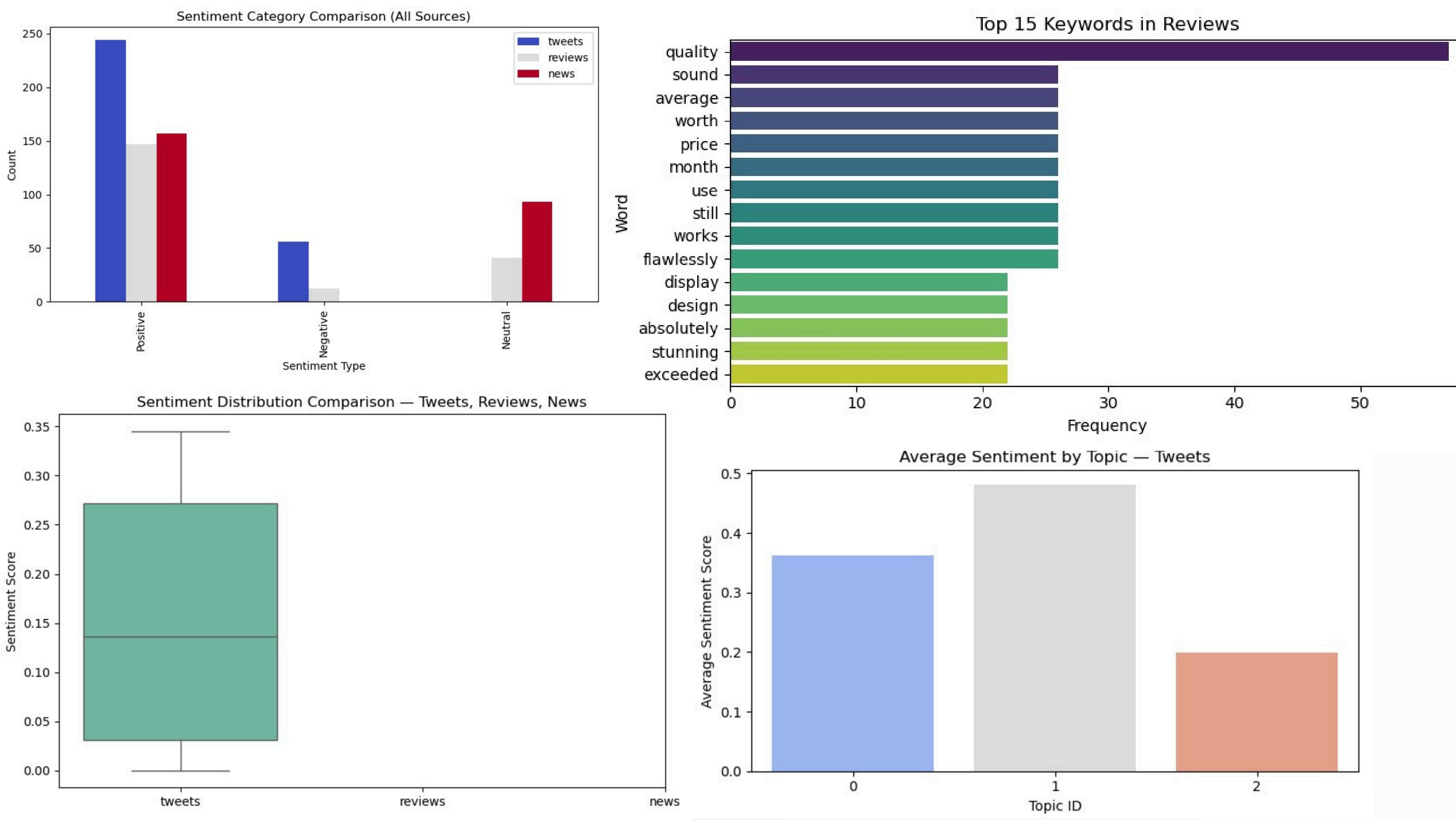
issues charging charging return
user interface life smooth clean easy
easy navigate
works flawlessly失望 experience
highly recommended exceeded expectations
fantastic value quality feels
cheap disappointing
overall okay

design absolutely money highly
build quality
smooth performance

display design
interface clean better overall
value money

excellent battery
absolutely stunning
battery life
faced issues

feel cheap
expectations buy
camera quality



Conclusion:

- Demonstrated NLP-based multi-source sentiment analytics
- Unified dashboard for public sentiment & engagement visualization

Future Enhancements:

- Live Twitter API integration
- Topic modeling (LDA/BERT)
- Streamlit-based interactive dashboards

Conclusion & Future Scope

Thank you

thank you

