

IphoneXR&13 Features and Sentiments Analysis

How user sentiment has shaped prioritized product feature development and roadmap decisions



Introduction

Dive into user-generated discussions and real-world ratings to uncover how iPhone XR and iPhone 13 owners perceive key product features:

- **Reddit Keyword Frequency** – which tells us what topics dominate each community's conversation
 - **Cross-Version Sentiment Analysis** – which shows how users feel about those features over time
 - **Amazon Rating Comparison** – which reveals which features consistently earn top marks in formal reviews
 - **Cross -Platform Analysis**

Data Source	Content	Processing Steps
Reddit Posts (reddit_iphone13_XR_data.csv)	r/iPhone13 & r/iPhoneXR submissions with extracted feature keywords and sentiment scores	<ul style="list-style-type: none"> • praw subreddit by API; Initialize PRAW with credentials from env.txt. • Define target subreddits (iPhone13&iPhoneXR), keyword list, post limit, and max comments per post. • Iterate through the subreddit's "hot" posts (up to limit_per_subreddit). • Skip stickied posts and filter for ones containing any of our feature keywords in title or body. • For each matching post, gather up to 9 top-level comments. • Extract and format fields: subreddit name, post ID, title, UTC timestamp converted to readable format, number of comments, up to five comment bodies, post content, and URL. • Outlier Handling: Compute IQR on num_comments to identify and remove posts with unusually high or low comment counts, ensuring a representative sample.
iPhone XR Reviews (apple_iphone_XR_reviews.csv)	Amazon reviews with per-feature star ratings and review text (Kaggle)	<p>Text Cleaning & Validation</p> <ul style="list-style-type: none"> • clean_text: Strips whitespace, lowercases, removes URLs, non-ASCII characters, special characters, and extra spaces. • is_valid_text: Flags reviews and titles as valid only if they're strings ≥ 15 characters long and not "[deleted]"/"[removed]." • Extract_features scans cleaned text/title for any of 22 predefined keywords (e.g., battery, camera, 5G). Results stored in features_in_text and features_in_title columns as lists of matched features. • Get Sentiment Score: get_sentiment uses TextBlob to compute polarity scores for both review body and title, saved in text_sentiment and title_sentiment. • Rating Extraction: extract_rating parses the numeric star rating from the raw review_rating string (e.g., "4.5 out of 5 stars") into a float ratingScore.
iPhone 13 Reviews (iphone13.csv)	Amazon reviews with per-feature ratings and full review text (Kaggle)	

Reddit: Keywords- Sentiment Analysis

Step1– Extract iPhone features from content

```
def extract_features(text, keyword_list):
    if not isinstance(text, str):
        return []
    text = text.lower()
    return [kw for kw in keyword_list if kw.lower() in text]

df['features_in_text'] = df['review_text'].apply(lambda x: extract_features(x, feature_keywords))
df['features_in_title'] = df['review_title'].apply(lambda x: extract_features(x, feature_keywords))
```

features_in_post	features_in_comment_1	features_in_comment_2	features_in_comment_3	features_in_comment_4	features_in_comment_5
[]	['Speakers']	[]	[]	[]	[]
['camera', 'screen', 'performance', 'IOS', 'storage']	[]	[]	[]	[' performance', '5G']	
['ui']	[]	[]	[]	[]	
['ui']	[]	['camera']	[]	[]	[]
['charging']	[]	['charging', 'ui']	[]	[]	[]
[]	[]	[]	[]	[]	
['screen']	[]	[]	[]	[]	
['screen']	[]	[]	[]	[]	
['screen']	[]	[]	[]	[]	
['charging']	['charging']	[]	[]	[]	
['camera']	[]	[' performance']	[]	[]	
['camera', 'screen']	[]	[]	[]	[]	
['charging']	['charging']	[]	[]	[]	
['screen']	[]	[]	[]	[]	
['charging']	[]	[]	['ui']	[]	
['screen', 'ui']	[]	[]	[]	[]	
['screen']	[]	[]	[]	[]	
['camera']	['ui']	[]	['camera']	[]	[' system', 'camera']
['camera']	[]	[]	[]	[]	
['storage']	['screen']	[' IOS', 'ui']	[]	['screen']	[]
['camera']	['camera', 'design', 'performance', 'IOS', 'design', 'ui']	[' system', 'performance']	[]	['camera']	[]
['screen']	[]	[' IOS']	[]	[]	
['screen']	['screen']	[]	[]	['screen']	
['IOS']	[' system', 'screen', 'IOS']	[]	[]	[]	
['ui']	[]	[]	[]	[]	
['screen', 'ui']	[]	[]	[]	[]	
['camera', 'charging', 'performance']	[]	['screen', 'performance', 'IOS']	[]	[]	[' performance']
['charging', 'IOS']	[]	[]	[' IOS']	[]	
['camera']	['ui']	[]	[' IOS']	[]	[' IOS']

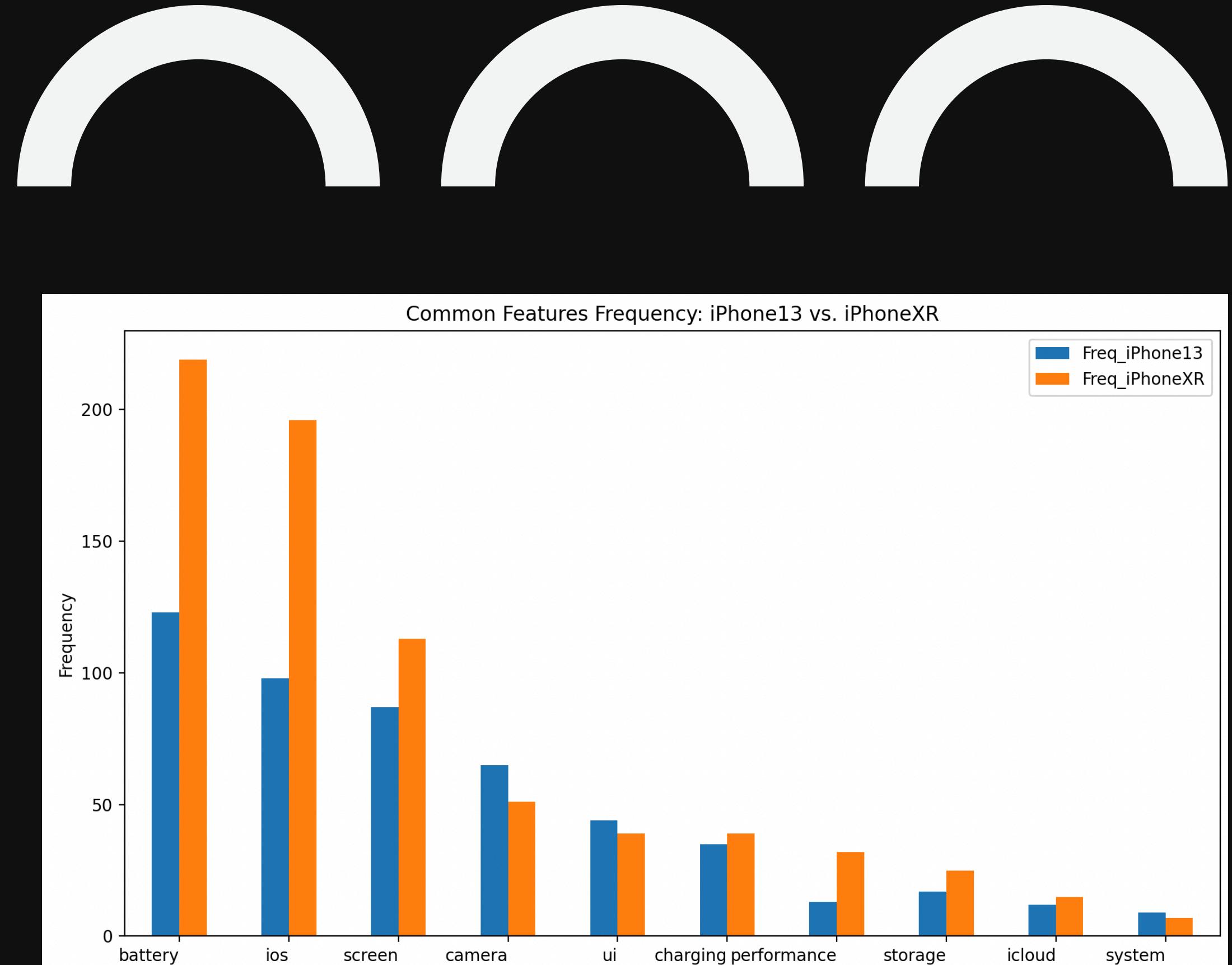
Step2 – set the sentiment score

```
get_sentiment(text):
    if not isinstance(text, str):
        return 0.0
    return TextBlob(text).sentiment.polarity
```

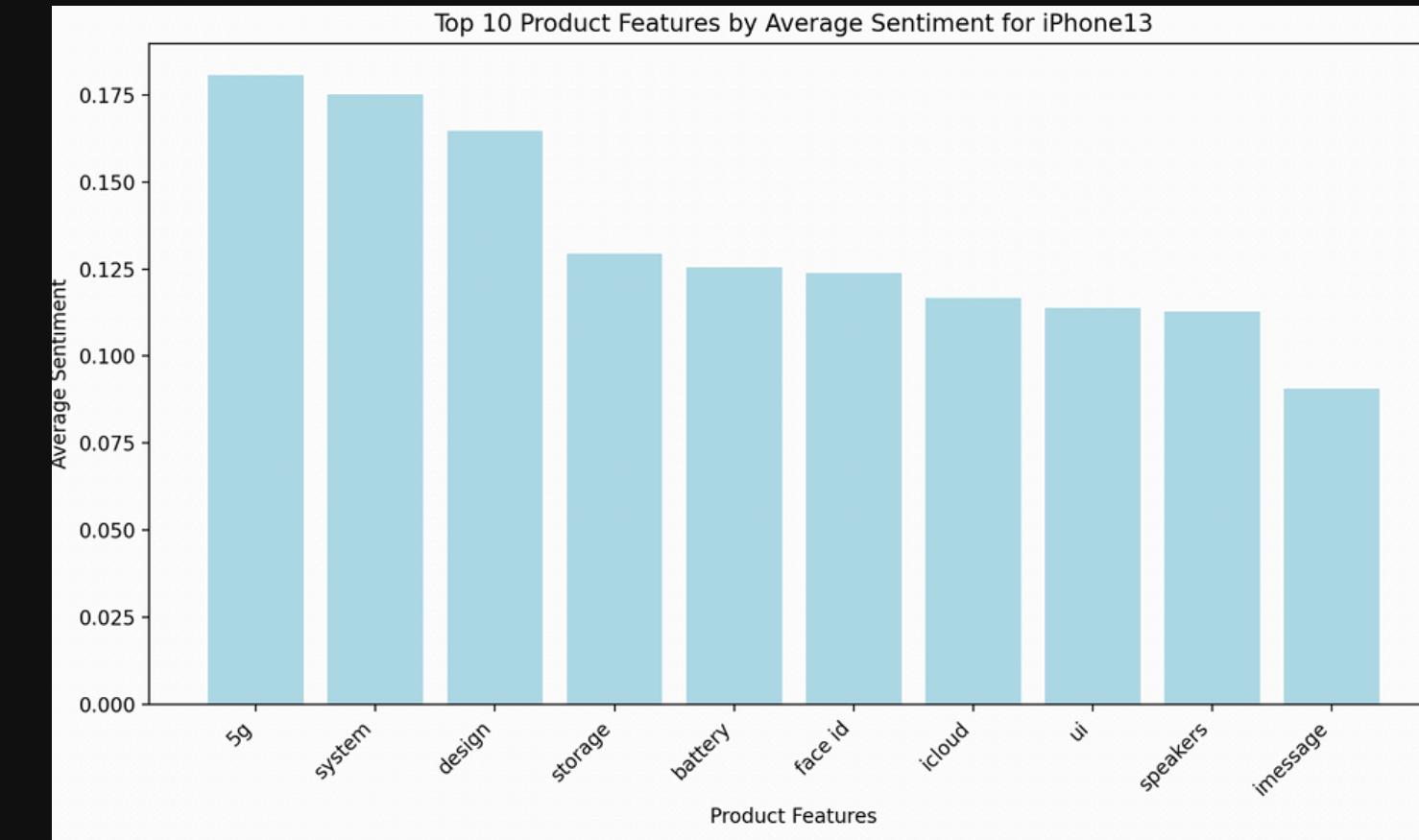
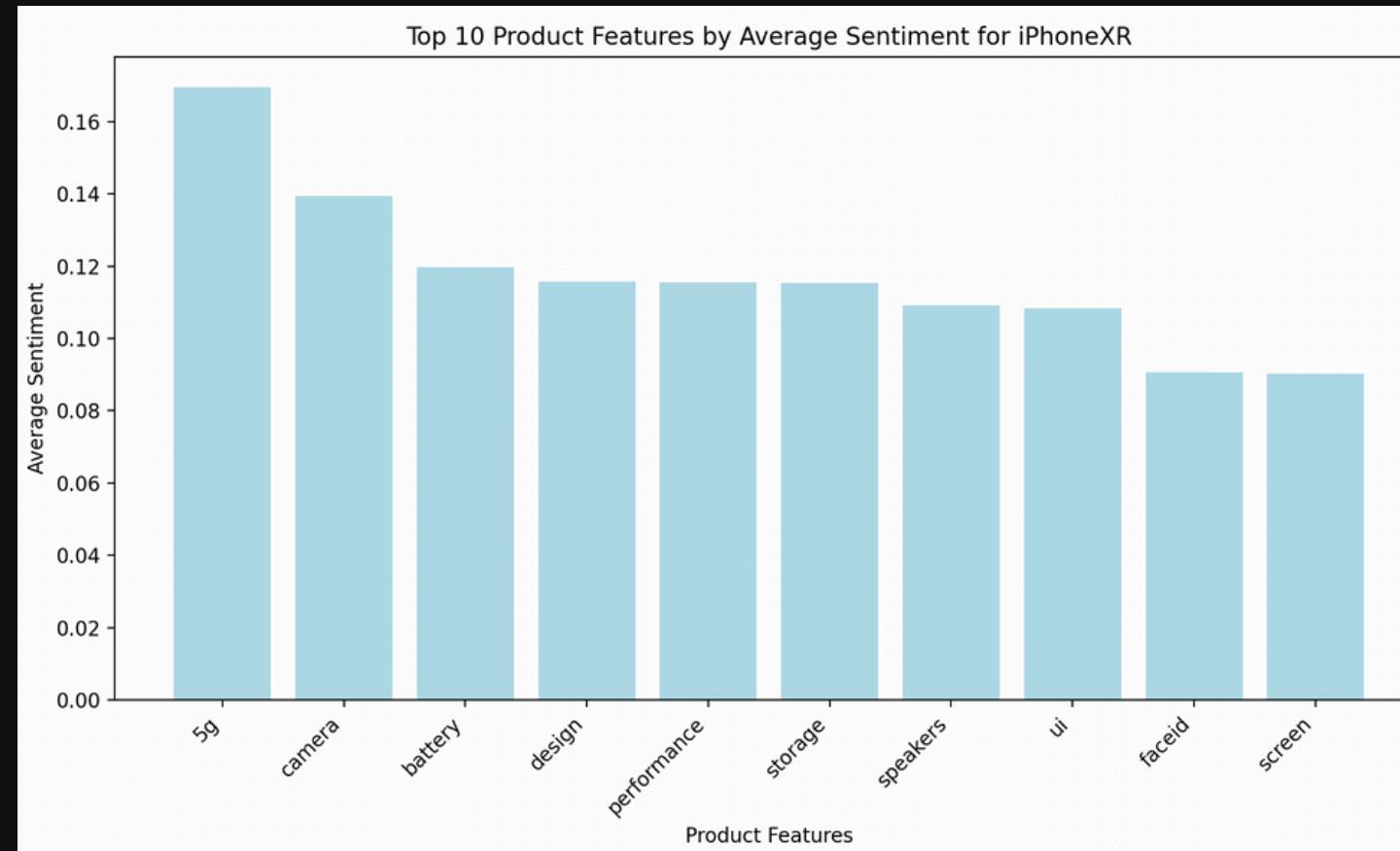
post_sentiment	comment_1_sentiment	comment_2_sentiment	comment_3_sentiment	comment_4_sentiment	comment_5_sentiment
0.425	0.2277777777777800	0.236666666666666700	0.0	0.0	0.0
0.19243827160493800	0.0	0.24285714285714300	0.0	0.2972222222222200	0.0833333333333330
0.0	0.0	0.0	0.0	0.0	0.0
0.266666666666666700	0.1	0.2000000000000000	0.0	0.0	0.0
0.15375	0.04375	0.0515972222222200	0.0	0.0	0.0
-0.125	0.0	0.0	0.0	0.0	0.0
0.166666666666666700	0.0	0.1	0.0	0.0	0.5
-0.2	-0.3	0.33333333333330	-0.8	0.0	0.0
0.02027777777777800	0.0	0.0	0.0	0.0	0.0
0.2857142857142860	0.0148148148148148	0.0	0.0	0.0	0.0
0.11785714285714300	0.25	0.16666666666666700	0.2193831168831170	0.0	0.0
0.196666666666666700	0.0	0.0	0.0	0.0	0.0
-0.1442857142857140	-0.0222222222222200	0.193181818181800	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0
0.41666666666666670	0.1	0.5	0.0	0.0	0.0
0.15060606060606100	0.0	0.0	0.0	0.0	0.0
-0.2	0.0	0.0	0.0	0.0	0.0
-0.1277777777777780	0.2555555555555560	0.558333333333330	0.3055555555555560	0.0799242424242420	-0.7000000000000000
0.05714285714285720	0.0	0.0	0.0	0.0	0.0
0.010740740740700	-0.28333333333330	0.4	0.0	-0.25	0.0
0.11504820936639100	0.3162927981109800	0.38918367346938800	0.4286796536796540	0.29444444444444400	0.2
0.06428571428571430	0.0	0.0	0.0	0.0	0.0
-0.3	-0.1375	0.1	0.0	-0.05	0.0
0.2	-0.2714285714285710	0.0	0.0	0.0	0.0
-0.08638054653679650	0.0	0.0	0.0	0.0	0.0
-0.03835578002244670	0.0	0.0	0.0	0.0	0.0
0.42329545454545500	-0.0750000000000000	0.4722222222222200	0.0	0.3	0.1600852272727200
0.12620320855615000	0.0	0.0	0.0	0.0	0.0
0.3333333333333330	0.333333333333330	0.2	0.16666666666666700	0.0	0.5
0.0	0.25	0.25	0.0	0.2	0.0
0.225	0.0	0.0625	0.2164772727272730	-0.019696969696969700	0.0
0.1875	0.0555555555555560	0.1770833333333300	0.5	0.0	-0.2000000000000000

Reddit Keywords Frequency

1. Battery & iOS Focus: XR mentions (~220 battery, ~195 iOS) are nearly double iPhone 13 (~123 battery, ~98 iOS), highlighting legacy-model users' ongoing concerns about power longevity and software stability.
2. Camera as Key Differentiator: iPhone 13 community discusses "camera" ~65 times versus ~51 for XR, underscoring the new model's upgraded sensors and multi-lens system as primary conversation drivers.
3. Screen Consistency: Both subreddits rank "screen" third (13 ≈ 87; XR ≈ 113), confirming display quality remains a critical decision factor across device generations.
4. Performance & Charging Gaps: XR shows higher "performance" (~32 vs. ~14) and "charging" (~39 vs. ~36) mentions, indicating older-chipset users seek more reassurance on speed and battery health.

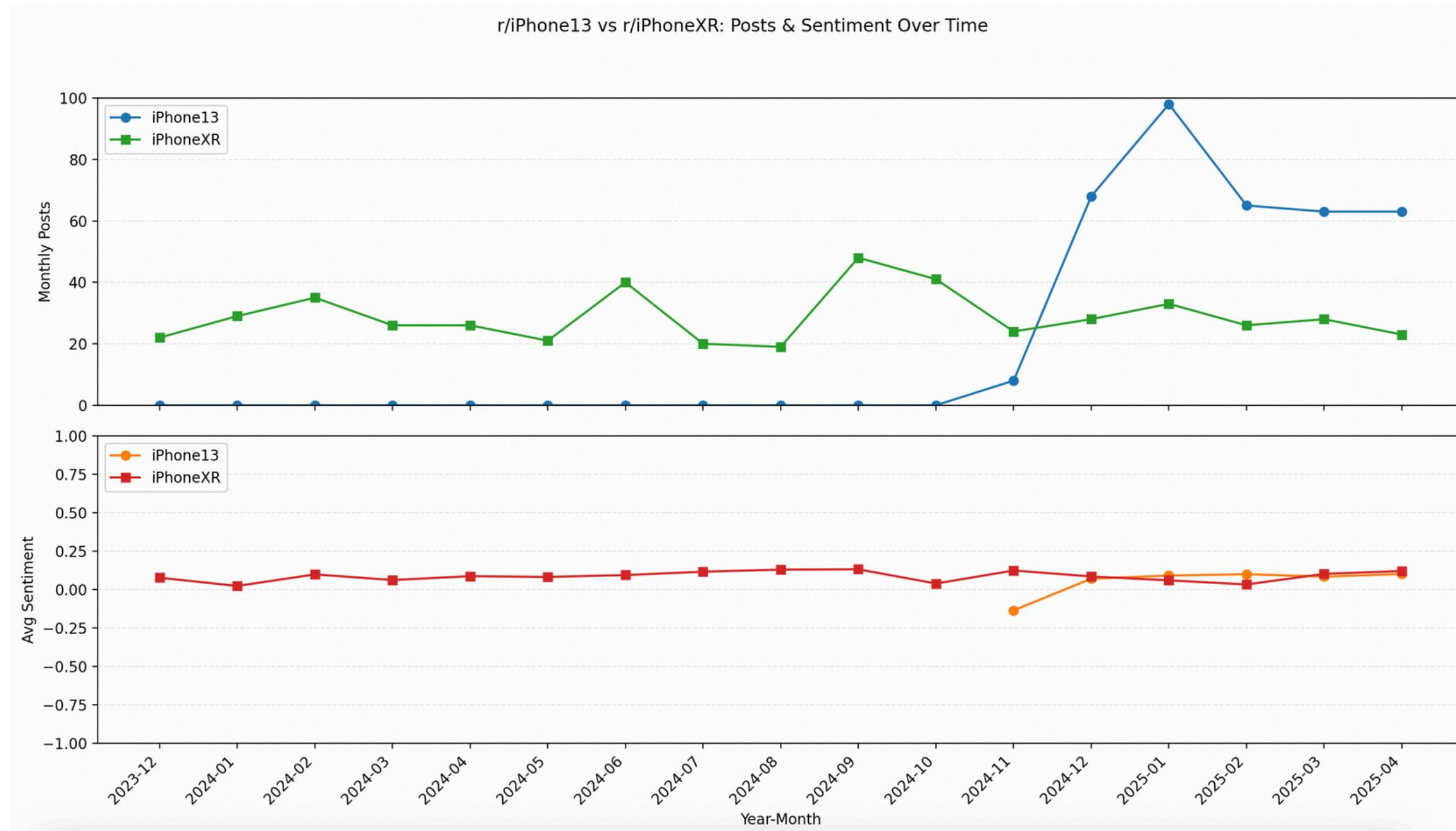


Cross-Version Reddit Sentiment Analysis:



Metric	iPhone XR Top	iPhone 13 Top	What Shifted?
#1 Sentiment	Camera (0.14)	5G (0.18)	From imaging reliability → cutting-edge connectivity
#2 Sentiment	Battery (0.12)	System (iOS stability, 0.175)	From power endurance → seamless software performance
Emerging Features	—	Face ID (0.123) & iMessage (0.09)	Rising focus on privacy & unified communication

Community Activity & Sentiment Over Time



- **Top Panel (Monthly Posts):**

r/iPhoneXR (green): Steady ~10–20 posts/month since 2023.

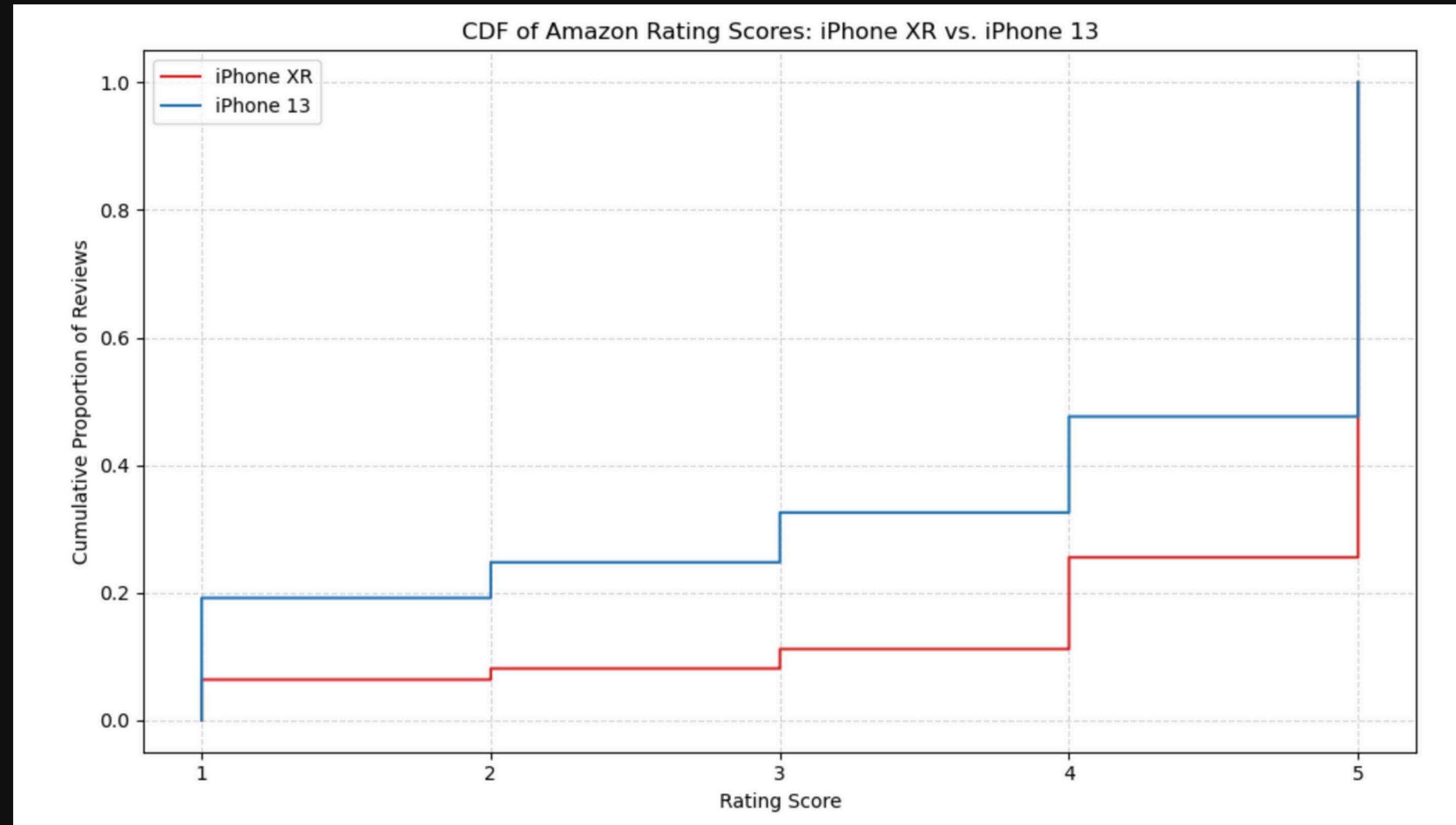
r/iPhone13 (blue): Emerges Nov '24, spikes to 100 posts in Jan '25, then plateaus ~38/month.

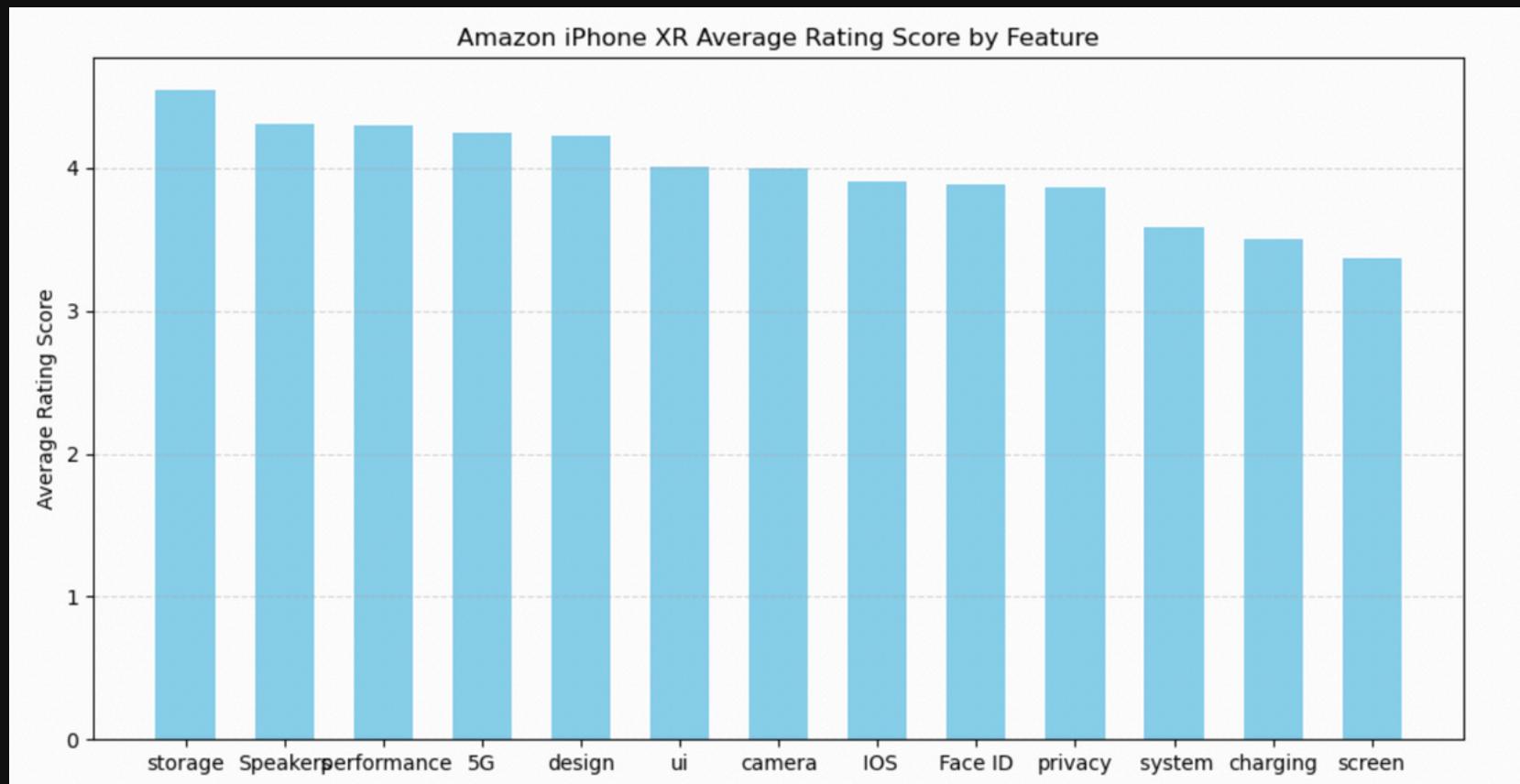
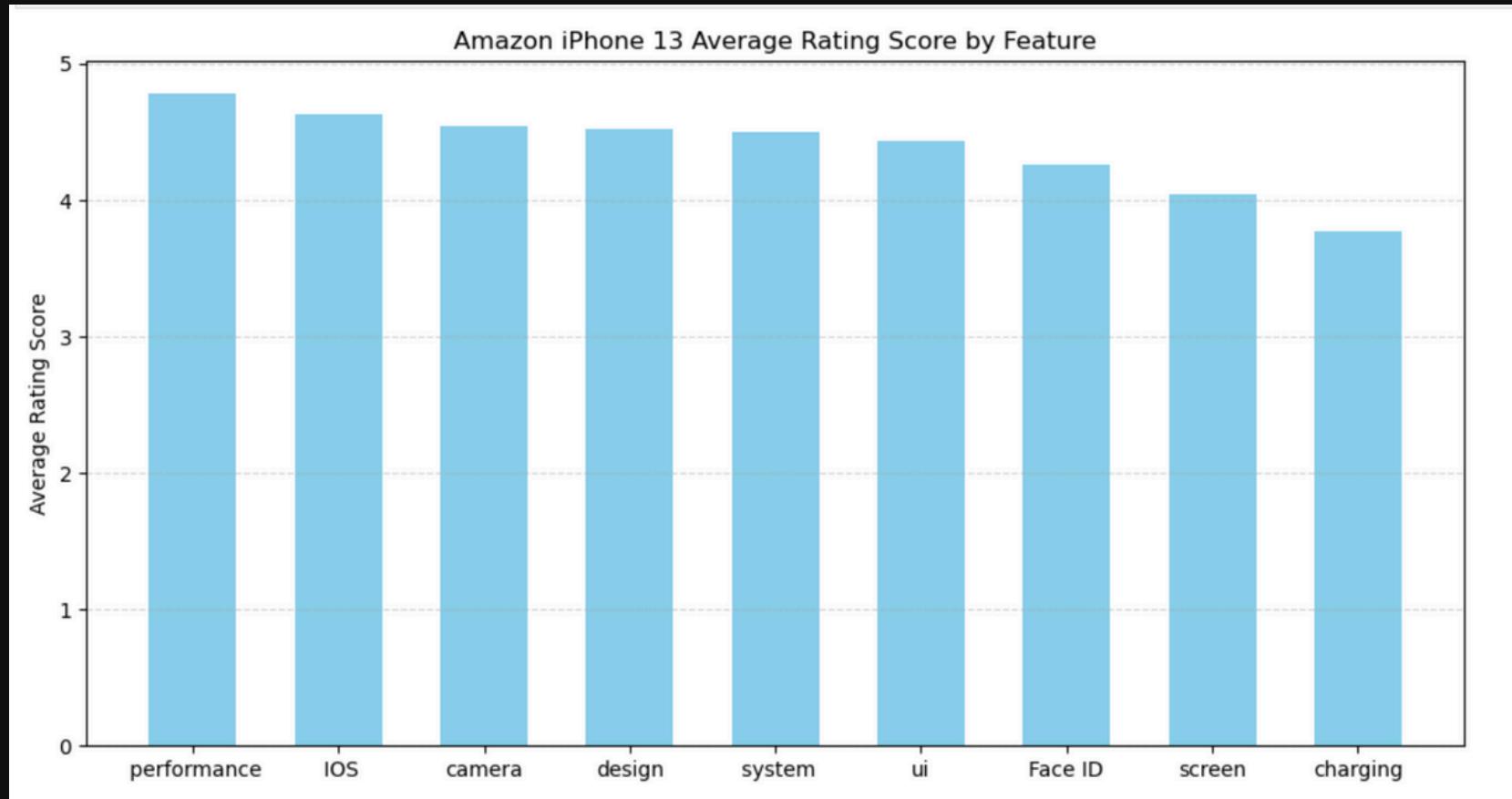
- **Bottom Panel (Avg. Sentiment):**

r/iPhoneXR (red): Consistently positive (~+0.05 to +0.20), with minor dips around major OS updates.

r/iPhone13 (orange): Starts negative (-0.10 in Nov '24), crosses neutral by Dec '24, and stabilizes ~+0.10 by Q1 '25.

Amazon Score Comparison





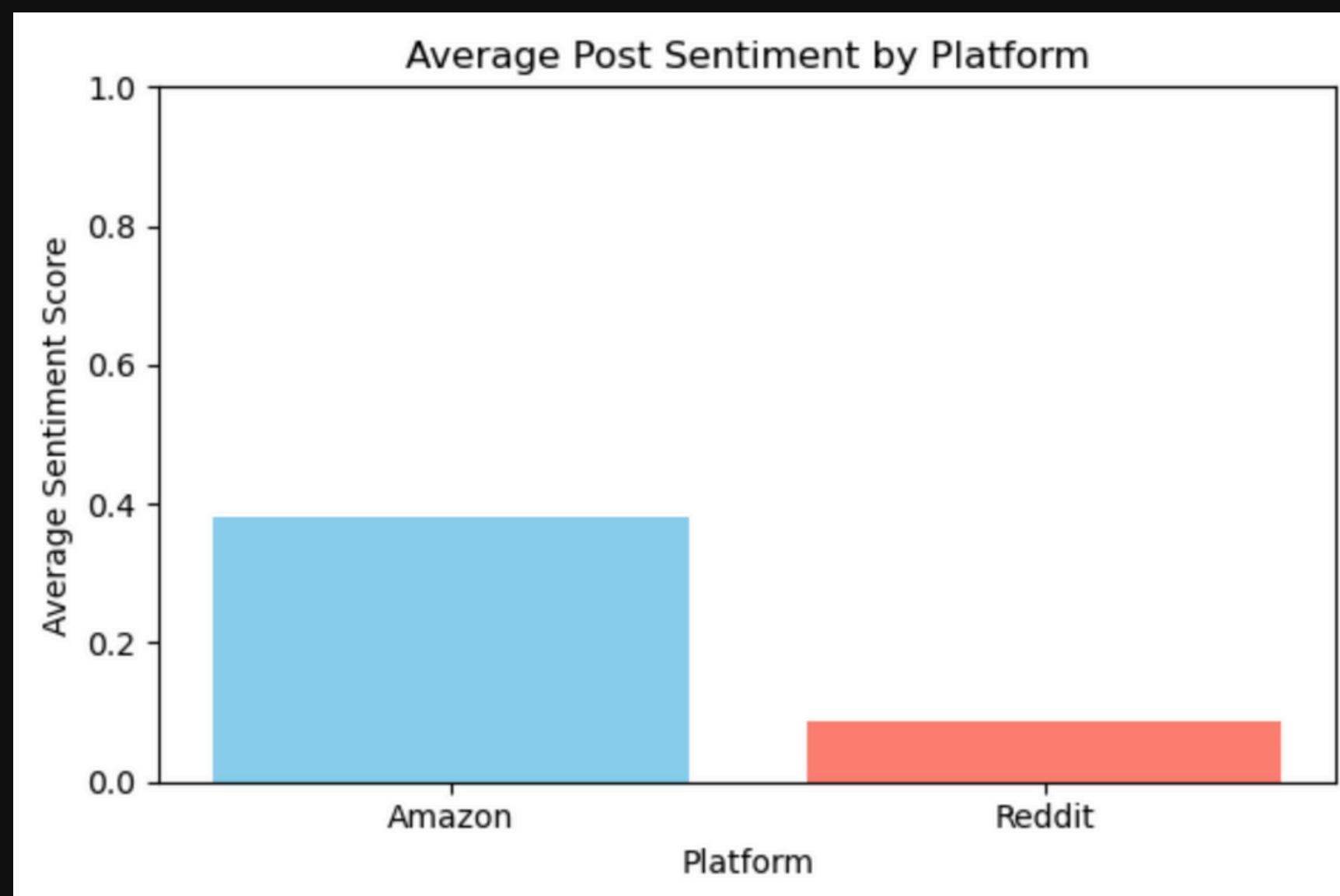
Cross-Version Amazon Rating Analysis: Customer Preferred Features with High Rating Score

- XR leads in performance and software stability, while 13's biggest gains are in storage capacity and audio quality.
- Both models consistently rate screen and charging lowest, indicating these as prime areas for technical innovation.
- Privacy emerges as a new concern for iPhone 13 users, highlighting the importance of strengthened data-security features.

Cross-Platform Sentiment Analysis:

Left Chart Annotation (bullet points):

- Amazon posts score an average sentiment of ~0.38, reflecting generally positive customer feedback.
- Reddit community sentiment is lower at ~0.08, indicating more mixed discussions and troubleshooting threads.



Right Chart Annotation (bullet points):

- iPhone XR: Amazon (~0.45) vs. Reddit (~0.12) – strong positive ratings, with community still appreciative but less exuberant.
- iPhone 13: Amazon (~0.30) vs. Reddit (~0.07) – slightly lower on both platforms, suggesting early adopter teething issues.

