

Bitcoin Tweet Sentiment Analysis Insights Report

Introduction

This report analyzes the sentiment of tweets related to Bitcoin using a dataset of 48,583 tweets, filtered to 38,416 tweets containing hashtags. The analysis aims to understand public sentiment towards Bitcoin, identify key discussion topics, and provide insights into the overall perception on social media platforms.

Methodology

Data Preprocessing

- **Dataset:** `Bitcoin_tweets.csv` with columns `text` (tweet content) and `date` (timestamp).
- **Filtering:** Retained only tweets with hashtags, resulting in 38,416 entries.
- **Text Cleaning:** Removed mentions, URLs, punctuation, and normalized text to lowercase. Bitcoin-related terms (e.g., `#bitcoin`, `#BTC`) were standardized to "bitcoin".

Sentiment Analysis

- **Tool:** TextBlob for polarity and subjectivity scoring.
- **Sentiment Classification:**
 - Positive: Polarity > 0.1
 - Neutral: Polarity between -0.1 and 0.1
 - Negative: Polarity < -0.1

Visualizations

- **Word Cloud:** Generated to identify frequent terms in tweets.
- **Sentiment Distribution:** Pie chart showing the proportion of positive, neutral, and negative sentiments (to be generated).

Findings

Sentiment Distribution

- **Neutral:** 22,711 tweets (59.1%)
- **Positive:** 13,311 tweets (34.7%)
- **Negative:** 2,394 tweets (6.2%)
- **Average Polarity:** 0.118 (slightly positive overall sentiment)
- **Average Subjectivity:** 0.296 (moderate subjectivity, indicating a mix of factual and opinion-based content)

Key Topics

The word cloud (see Figure 1) highlights frequent terms such as "bitcoin," "price," and "trade," suggesting that discussions often focus on market dynamics and trading activities.

Figure 1: Word Cloud of Bitcoin Tweets



Sentiment Distribution Visualization

A pie chart (to be generated as Figure 2) will visualize the sentiment distribution, showing the dominance of neutral sentiment followed by positive sentiment, with a smaller proportion of negative sentiment.

Conclusions

The analysis reveals a generally neutral to positive sentiment towards Bitcoin on social media, with 59.1% of tweets classified as neutral and 34.7% as positive. The average polarity of 0.118 indicates a slight positive bias. Key discussion topics include market prices and trading, as evidenced by the word cloud. Future work could involve time-series analysis to identify sentiment trends over time, potentially revealing correlations with market events.

Recommendations

- **Market Monitoring:** Stakeholders can use this positive sentiment to gauge public confidence in Bitcoin.
- **Further Analysis:** Incorporate time-series analysis to track sentiment changes, especially during significant market events.
- **Enhanced Cleaning:** Improve text cleaning by handling emojis and non-English tweets for more accurate sentiment analysis.