Trader Sentiment Analysis – Understanding the Relationship Between Market Mood and Trading Behavior

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1. Introduction

The cryptocurrency market is heavily influenced by trader psychology and market sentiment. This project explores the relationship between trader activity and market sentiment to identify behavioral patterns affecting market dynamics.

2. Data Description

Two datasets were analyzed: Traders Data (2,348 rows, 17 columns) containing trade information, and Sentiment Data (2,644 rows, 3 columns) containing the Fear and Greed Index. The data was merged on the 'date' field to align daily trader behavior with market sentiment.

3. Data Cleaning Steps

Data cleaning involved removing duplicates, converting timestamps, creating new date columns, renaming columns, and filling missing sentiment classifications. The merged dataset contained 2,348 records with 19 attributes.

4. Exploratory Data Analysis (EDA) and Visualizations

Bar plots, heatmaps, and trend lines were generated to explore how trading metrics correlate with sentiment levels. Greed days showed higher trade volume and profit, while Fear days showed more stable results.

5. Results & Insights

• Traders are more active and profitable during Greed phases.
• Fear phases have fewer trades but consistent performance.
• Trade volume and win rate are strongly correlated.
• Emotional sentiment clearly influences trading intensity.

6. Conclusion

This analysis reveals a clear connection between market sentiment and trading performance. Greed correlates with higher activity and profit variance, while Fear leads to stable but cautious trading. Such insights can help design risk-aware trading systems and improve market prediction models.

7. References

1. Kaggle & Google Drive Datasets
2. Fear and Greed Index (Alternative.me)
3. Pandas, Matplotlib, Seaborn documentation
4. Data Science Assignment Guidelines