

Trader Behaviour vs Market Sentiment Analysis

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1. Introduction

Market sentiment plays an important role in cryptocurrency trading.

In this project, I analysed how trader behaviour changes under different market sentiments, specifically **Fear** and **Greed**, using Bitcoin market sentiment data and historical trading data.

The objective of this analysis is to understand whether traders behave more aggressively, trade higher volumes, or experience different profit and loss patterns during fear and greed phases of the market.

2. Datasets Used

Two datasets were used for this analysis:

1. Bitcoin Market Sentiment Dataset

- Contains daily sentiment classification as **Fear** or **Greed**

2. Historical Trader Data

- Contains trade-level information such as execution price, trade size, direction, and closed profit/loss

Both datasets were merged using the trade date to align market sentiment with trading activity.

3. Methodology

The following steps were performed:

- Converted timestamps and dates into proper datetime format
- Merged trader data with sentiment data using date
- Removed unnecessary and duplicate columns

- Created new features such as:
 - Profit/Loss label
 - Absolute PnL (risk magnitude)
 - Trade volume in USD
 - Buy/Sell indicator

After preprocessing, exploratory data analysis was conducted to compare trader behaviour during Fear and Greed sentiment periods.

4. Key Findings

- Average profit and loss varied across different market sentiments
- Trade volumes were generally higher during **Greed** periods
- Traders showed more aggressive behaviour during Greed compared to Fear
- Fear periods had a higher number of defensive or cautious trades

Visualizations were used to support these findings.

5. Insights and Conclusion

This analysis shows that market sentiment significantly impacts trader behaviour. During Greed phases, traders tend to trade higher volumes and take more risks, while Fear phases are associated with cautious behaviour and lower profitability.

These insights can help traders make smarter decisions by adjusting their strategies based on prevailing market sentiment.