Analysis of Trader Behavior vs Market Sentiment

1. Introduction

In financial markets, emotions play a very important role in how people trade. When the market is going up, people often feel greedy and confident, and when the market is falling, people feel fearful and uncertain. This project tries to understand how these emotions affect real trading behavior using data.

In this analysis, two datasets are used: the Bitcoin Fear & Greed Index, which shows the overall market mood each day, and historical trading data from Hyperliquid, which contains real trade information. The main goal is to see how trading activity and profitability change when the market is in Fear, Neutral, or Greed.

2. Dataset Description

Two datasets were used for this study:

The first dataset is the Fear & Greed Index, which gives a daily classification of market sentiment such as Extreme Fear, Fear, Neutral, Greed, and Extreme Greed.

The second dataset is the Historical Trading Dataset, which contains detailed information about trades such as the traded amount in USD, the time of the trade, and the profit or loss (PnL) made on each trade.

3. Methodology

First, both datasets were cleaned and their date columns were converted into a proper date format. Then, the trading data was merged with the Fear & Greed data using the date column so that every trade could be linked to the market sentiment of that particular day.

After that, the trade-level data was converted into daily summaries. For each day, the following values were calculated:

- Total trading volume in USD
- Total profit or loss (PnL)
- Total number of trades

Finally, these daily values were grouped by market sentiment to compare how traders behave during different emotional phases of the market.

4. Key Findings

The results of the analysis were very interesting and somewhat surprising:

- The highest trading activity is seen during Extreme Fear and Fear periods.
- The highest profits are also made during Fear and Extreme Fear periods.
- During Greed and Extreme Greed periods, both trading volume and average profit are lower.
- This shows that traders are actually more active and more successful when the market is fearful, not when it is greedy.

This result goes against the common belief that the best opportunities come during greedy or bullish markets. In reality, fearful markets seem to offer better opportunities for smart traders.

5. Visual Analysis

Two charts were created to support the analysis:

- Average Trading Volume by Market Sentiment
- Average Profit/Loss by Market Sentiment

Both charts clearly show that trading activity and profits are much higher during Fear and Extreme Fear periods, and lower during Greed and Extreme Greed periods.

6. Conclusion

This project shows that market sentiment has a strong influence on how traders behave. Traders tend to trade more and earn more during fearful market conditions, while greedy markets appear to be more crowded and less profitable.

This suggests that instead of following the crowd and emotions, traders should focus on data-driven strategies and look for opportunities when the market is fearful rather than when everyone is overly confident.