Market Sentiment vs Trader Behavior Analysis

Objective

The objective of this analysis is to study how Bitcoin market sentiment (Fear vs Greed) influences trader behavior using historical trading data from the Hyperliquid platform. The analysis focuses on trading volume, profitability, win rate, and inferred risk behavior.

Datasets Used

1. **Bitcoin Market Sentiment Dataset**
    - Contains daily market sentiment classified as *Fear* or *Greed*.

2. **Historical Trader Data (Hyperliquid)**
    - Includes trade-level details such as account, trade size, execution price, timestamp, and closed PnL.

Methodology

- Cleaned and standardized timestamp formats.
- Aggregated trade-level data into daily metrics.
- Encoded sentiment labels numerically (Fear = 0, Greed = 1).
- Merged daily trading metrics with sentiment data by date.
- Analyzed volume, profitability, win rate, and risk behavior across sentiment categories.
- Used visualizations to support findings.

Key Findings

- Trading volume is higher during **Greed** sentiment periods.
- Increased trading activity during Greed does not guarantee improved profitability.
- **Fear** sentiment periods exhibit lower volume but more consistent win rates.
- Risk-taking behavior increases during Greed, while Fear promotes conservative trading.

Limitations

- Leverage-related metrics were not available in the provided dataset.
- Risk behavior was inferred indirectly using trade size, win rate, and PnL volatility.
- Analysis is limited to the available historical period and Bitcoin-related trades.

Conclusion

Market sentiment plays a crucial role in shaping trader behavior. Greed encourages higher activity and risk-taking, whereas Fear leads to disciplined and selective trading. Understanding sentiment-driven behavior can help traders and analysts make more informed decisions in volatile markets.