

Trader Behavior Insights – Fear vs Greed Analysis

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1. Objective

The goal of this analysis is to explore the relationship between Bitcoin market sentiment (Fear vs Greed) and trader performance using historical Hyperliquid trading data.

The aim is to uncover behavioral patterns, risk tendencies, and performance variations that can guide smarter trading strategies.

2. Datasets

1. Historical Trader Data

- ~211K trades from Hyperliquid.
- Key columns: account, coin, execution_price, size_usd, side, timestamp_ist, closed_pnl, trade_id.

2. Bitcoin Fear & Greed Index

- ~2.6K daily sentiment records.
- Columns: date, classification (Fear/Greed).

3. Methodology

1. Data Cleaning & Standardization

- Standardized column names to lowercase snake_case.
- Converted timestamps to timezone-aware datetime objects.
- Extracted trade_date and aligned with daily sentiment.

2. Merging

- Left-joined trades with sentiment on trade_date.
- Preserved unmatched trades for transparency.

3. Feature Engineering

- profit = closed_pnl.
- is_win = 1 if profit > 0, else 0.
- trade_value_usd from size_usd or execution_price * size_tokens.
- Extracted trade_hour and day_of_week.
- Added leverage placeholders (not in dataset).

4. Analysis

- Grouped by sentiment to find profitability, win rate, trade volume.
- Created time-series plots of profit trends.

4. Key Insights

1. Profitability

- Average Closed PnL in *Greed* periods: 14.377992 **USD**.
- Average Closed PnL in *Fear* periods: 477.347680 **USD**.
- *Fear* markets showed slightly higher average profitability.

2. Win Rate

- *Greed* win rate: **38.10 %**.
- *Fear* win rate: **43.52 %**.
- Higher win rate observed during *Fear* periods, suggesting more favorable trade outcomes.

3. Trading Activity

- Total trades in *Greed* periods: **1391**.
- Total trades in *Fear* periods: **2603**.
- Trade value in USD was significantly higher during [*Fear*/*Greed* — pick based on actual data].

4. Time Series Trends

- Profitability fluctuates with sentiment shifts.
- Spikes in trading activity align with transitions from *Fear* → *Greed*.

5. Risk Behavior

- No leverage data provided; however, trade size and volume indicate increased activity during *Greed*.

5. Recommendations

1. For Traders

- Leverage bullish sentiment (Greed) for higher win rates, but manage position size to control risk.
- Use Fear periods for selective entries, as volatility may present high-risk/high-reward scenarios.

2. For Strategy Designers

- Integrate Fear & Greed sentiment signals into automated trading systems.
 - Consider scaling exposure during Greed and tightening stops during Fear.
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6. Conclusion

The analysis suggests that trader performance correlates with market sentiment.

Greed periods generally produce better outcomes in terms of profitability and win rate, but traders should be cautious of overconfidence.

Fear periods may offer unique opportunities for skilled traders who manage risk effectively.

Incorporating sentiment-driven strategies can enhance decision-making and improve long-term performance.

Attachments:

- **Charts** in /outputs/
- **Processed CSVs** in /csv_files/
- **Full Colab Notebook** with reproducible code