Trader Performance vs Market Sentiment

Final Summary Report

Objective

The objective of this analysis was to understand how Bitcoin market sentiment (Fear and Greed) influences trader behavior and performance on the Hyperliquid platform. The goal was to identify behavioral patterns and extract actionable insights that could support better trading decisions.

Data Overview

Two datasets were used:

- A daily Bitcoin market sentiment dataset classifying each day as Fear or Greed.
- Historical trader-level data containing trade direction, trade size, timestamps, and closed profit and loss (PnL).

Both datasets were aligned at a daily level to ensure accurate sentiment mapping for each trade.

Key Metrics Analyzed

The analysis focused on the following performance and behavior metrics:

- Daily PnL per trader
- Win rate
- Trade frequency
- Average trade size
- Long/short bias
- Trader segmentation based on activity

Since leverage data was not available, average trade size (USD) was used as a proxy for risk exposure.

Key Findings

1. **Sentiment impacts trading behavior**
   Traders tend to trade more frequently and take larger positions during Greed periods, indicating higher risk appetite.
2. **Risk increases during Fear regimes**
   Although win rates may not differ significantly, losses during Fear periods tend to be sharper, increasing downside risk.
3. **Experienced traders adapt better**
   Frequent traders perform relatively better during Fear conditions, suggesting better adaptability to volatile market environments.
4. **Distinct trading styles exist**
   Clustering analysis revealed clear trader behavior groups based on activity level, trade size, and win rate.

Optional Modeling Insights

A simple baseline predictive model was built to assess whether sentiment and basic trading behavior could predict daily profitability.
While the model showed limited predictive power due to data imbalance, it confirmed that sentiment and activity patterns are relevant signals for more advanced models.

Actionable Strategy Recommendations

- Reduce position sizes during Fear periods to limit downside risk.
- Allow increased trading activity during Fear regimes only for traders with a consistent and frequent trading history.
- Incorporate sentiment-aware rules into risk management frameworks.

Conclusion

Market sentiment plays a meaningful role in shaping trader behavior and performance. By combining sentiment indicators with behavioral metrics, trading strategies can be made more adaptive and risk-aware. This analysis provides a

foundation for building more advanced trader profiling and sentiment-driven models in the future.

Author: Chaitanya Jhade
Role Applied: Data Science Intern – Primetrade.ai