Trader Performance vs Market Sentiment

Methodology

This analysis investigates how Bitcoin market sentiment (Fear & Greed Index) relates to trader behavior and performance on Hyperliquid. Two datasets were used: a market sentiment dataset containing daily sentiment classifications and a historical trading dataset including execution details and realized Closed PnL.

Data preparation involved parsing timestamps using day-first formatting and aligning both datasets at the daily level. After merging the datasets, data quality checks were performed to verify missing values and dataset consistency. Several behavioral features were engineered to support analysis, including trade size segmentation (small, medium, large), daily trader PnL, trade frequency segmentation (high vs low activity), and long/short behavior metrics.

The analysis focused on comparing profitability, trade behavior, and risk exposure across different sentiment regimes using grouped aggregations and visualization.

Key Insights

The results show that trader performance varies across sentiment conditions, with larger trade-size segments consistently achieving higher average Closed PnL. Extreme Greed periods demonstrate the strongest profitability, while Extreme Fear negatively impacts smaller trade-size traders more significantly.

Behavioral patterns also shift with sentiment. Average trade size tends to increase during Greed regimes, suggesting that traders take on greater risk when market sentiment is positive. Additionally, trade frequency analysis indicates that high-frequency traders maintain more stable performance across sentiment environments, while low-frequency traders experience higher variability during negative sentiment phases.

Overall, sentiment alone does not fully explain performance; combining sentiment with behavioral segmentation provides deeper insight into trader outcomes.

Strategy Recommendations

Based on the analysis, several actionable strategy ideas emerge. First, adaptive risk management can improve outcomes by reducing exposure during Extreme Fear conditions, particularly for small or infrequent traders, while allowing greater position sizing during Greed regimes where profitability trends improve. Second, behavior-based trading segmentation suggests maintaining consistent activity for high-frequency traders while encouraging more cautious participation from low-frequency traders during volatile market conditions. Finally, sentiment-aware trade sizing can serve as a simple rule-based framework, gradually increasing position size during optimistic sentiment and scaling down during fearful market phases to improve risk-adjusted performance.