DS Report – Trader Behaviour vs Market Sentiment

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Summary

This project analysed the relationship between trader behaviour and overall market sentiment (Fear vs Greed)

using Bitcoin Market Sentiment and Hyper liquid Historical Trader Data. Key findings include:

- Trading activity is sentiment-sensitive.
- Profitability aligns with sentiment (higher in Greed periods).
- Large notional trades cluster on Extreme Greed and Fear days.
- A few accounts dominate overall PnL.

Recommendation: Incorporate sentiment into trading risk management.

Data Description & Preparation

Datasets:

- Fear & Greed Index (2018–2025, with classifications Fear, Greed, Extreme Fear, Extreme Greed, Neutral).
- Historical Trader Data (~211k trades, across 7 unique dates 2023–2025).

Preprocessing:

- Parsed timestamps, created daily date field.
- Merged trades with sentiment.
- Aggregated daily and account-level summaries.

Limitation: Only 7 trade dates available, no leverage column provided.

Exploratory Data Analysis (EDA)

Findings:

- Fear day (2025-02-19) contained 133k trades.
- Greed: 36k trades; Extreme Greed: 7k; Neutral: 7k.
- PnL distribution skewed with many small losses, some large profits.
- Median PnL higher on Greed vs Fear days.

Visuals: Boxplots, histograms, and bar charts illustrate these trends.

Daily Aggregates

- Highest trading volume: Fear-day (134k trades).
- Highest profitable ratio: Greed & Extreme Greed (~55–60%).
- Lowest profitable ratio: Fear (~40%).
- Median PnL: Negative on Fear, positive on Greed.

Per-Account Analysis

A small subset of accounts dominated profits. Many accounts had negative PnL. Win rates varied widely,

indicating skill disparity among traders.

Statistical Testing

Mann–Whitney U test comparing Greed vs Fear trades: $p < 0.001$. Profitability distributions differ significantly.

Conclusion: sentiment strongly correlates with trade outcomes.

Insights & Recommendations

- Reduce exposure on Fear days to limit downside.
- Monitor Extreme Greed days due to volatility.
- Track consistently losing/profitable accounts.
- Request leverage and margin fields in future datasets.

Limitations

- Sparse trade-day coverage.
- Missing leverage prevents full risk analysis.
- Trades within a day may be correlated.
- Thus, results are directional signals, not precise statistics.

Next Steps

- Extend analysis with more continuous trade data.
- Build predictive models using sentiment + trade features.
- Back test sentiment-adjusted strategies (e.g., scale down during Fear).

Conclusion

Market sentiment significantly impacts trader outcomes. Profitability is higher during Greed; losses dominate during Fear. Sentiment should be integrated into trading risk management strategies.