

# Bitcoin Trader Performance Analysis Report

## Project Overview:

**Objective:** Analyze how Bitcoin market sentiment affects trader performance using Hyperliquid historical trades and the Fear & Greed Index.

## Datasets Used:

- Historical Trader Data → 32,550 trades
- Bitcoin Market Sentiment Data → 2,644 days of Fear/Greed scores

## Methodology

- Data Cleaning:** Processed timestamps, handled missing classifications.
- Merging Datasets:** Combined trade data with sentiment labels by date.
- Exploratory Data Analysis (EDA):**
  - Profit & loss distribution
  - Trading volume by sentiment
  - Losses vs. profits
  - Win rates across sentiments
- Insights Extraction:** Identified patterns between sentiment phases and performance.

## Key Findings

Sentiment	Trades	Avg PnL (₹)	Win Rate	Total Volume (₹)	Risk Level
Neutral	5,854	105.9	46.3%	0.88M	✔ Low
Fear	9,761	165.9	40.2%	4.35M	✔ Medium
Extreme Greed	6,924	59.2	48.4%	254M	⚠ Medium
Greed	8,758	103.6	40.8%	27.8M	⚠ High
Extreme Fear	1,246	258.9	32.9%	1.67M	✖ Very High

## Trader Performance Insights by Sentiment

- Fear:** Highest total profit (₹1.61M) and strong avg PnL (₹165.96). Good opportunities.
- Neutral:** Balanced profits with high win rate (46.3%).
- Extreme Greed:** Moderate profits, highest win rate (48.4%), very high trade volumes.

- **Greed:** Lower avg PnL (₹103.6), highest max loss (₹117K).
- **Extreme Fear:** Highest avg PnL (₹258.9), lowest win rate (32.9%). Very risky.

### Trading Volume Insights

- Extreme Greed dominates total volume (₹254M) and largest average trade size (~₹36.6K).
- Fear, Neutral, and Extreme Fear have smaller trade sizes → traders prefer bigger bets in Extreme Greed.

### Loss Analysis

- Greed → highest max loss (₹117K).
- Extreme Fear → second-largest loss (₹29K).
- Neutral & Extreme Greed → lower losses → safer zones.

### Best Trading Opportunities (Combined Ranking)

1. Neutral → Balanced profits + win rate + low losses
2. Fear → High profits, slightly lower win rate
3. Extreme Greed → High win rate, low avg PnL
4. Greed & Extreme Fear → Riskier zones

---

## Recommendations

### For Traders

- Focus on Neutral & Fear → Best balance of profitability and stability
- Be cautious during Extreme Greed → High win rate, smaller profits, huge trade sizes
- Avoid Extreme Fear unless experienced → Volatile, low win rate, occasional large payouts
- Monitor Greed phases → Large losses are common

### For Strategy Design

- Build sentiment-aware trading models → Increase position size during Fear & Neutral
- Reduce exposure in Extreme Fear & Greed → Minimize unexpected losses
- Use Extreme Greed spikes as early warning signals for potential market corrections

### Deliverables

- Google Colab Notebook → Full code, EDA, visualizations

- Graphs → Sentiment distribution, Profit trends, Trading volume analysis
- Final Report → Summarized insights + recommendations