Trader behaviour vs Market Sentiment Analysis Report

Summary

Analyzing Bitcoin's price movements alongside the Fear & Greed Index reveals a similar behavioral pattern i.e, extreme shifts in market emotion often imply ideal trading opportunities. Contrarian strategies that capitalized on these emotional fluctuations performed noticeably better than trend-following strategies.

Dataset Overview

Source: BTC 4-hour interval data with Fear & Greed Index.
Key columns: timestamp, open, close, high, low, Fear & Greed Index (0–100 scale), Fear & Greed Classification (Extreme Fear , Fear, Neutral, Greed, Extreme Greed)

- Extreme Fear value : 1-24.
- Fear value :25-45.
- Neutral value: 46-54.
- Greed value : 55-74.
- Extreme Greed value : 75-100.

Key Findings

1. **Returns vs Market Sentiment graph**

Observation: As we progress from acute fear to excessive greed, returns typically rise.
Insights:

- Extreme greed and greed have higher median returns.
- More variation is seen with extreme fear, which may indicate panic selling or increased uncertainty.

Implication:While greedy markets often accompany higher upward momentum, fearful markets offer instability, which offers opportunities for swing traders.

2. Volatility vs Market Sentiment graph

Observation: Volatility is high when there is extreme fear and reduces as index score increases.
Insights:

- Unpredictable price fluctuations are caused when there is fear phase.
- Greedy phase move more steadily and calmly.

Implication: There is a great deal of danger and uncertainty when people are afraid. Great for volatility-based techniques, but risk management is required.

3. Sentiment Index vs Raw Returns graph

Observation:A minor positive tendency is present, but there isn't a clear linear relationship.
Insights:
- Higher returns are found around emotion index 60–80 (greed).
- There is greater dispersion (some large positive or negative returns) in fear regions (index < 45).

Implication: Although greedy period frequently coincides with market rallies, it does not always ensure gains.

4. Sentiment Index vs Risk-Adjusted Returns graph.

Observation: Across all sentiment levels, risk-adjusted returns exhibit strong density and remain centered around zero.
Insights:
- No clear mood zone with better risk-adjusted performance.
- It implies that risk is not always rewarded more when acting out of greed than fear.

Implication:Blindly following sentiments is not insisted especially for risk adjusted strategies.

5. Hidden Trends / Signals:

Signal	What It Means	Strategy Suggestion
High Volatility in Fear	Panic moves -- high risk/reward	Think about volatility-based or short-term contrarian techniques.
Better Raw Returns in Greed	Bullish bias in sentiment	Take advantage of market trends and momentum.
Fear Spreading	Higher unpredictability	Hedged risk, avoid leverage when you're afraid

Conclusion:

a) Sentiment affects market action, though not always in a predictable way.

b) Fear: Very volatile and unpredictable; best suited for experienced traders.

c) Greed: less volatile but safer for trend-followers, with better average returns.

d) Smarter trades are made when sentiment is combined with technical or fundamental indicators; no sentiment zone guarantees better risk-adjusted performance.