Sentiment–Behavior Analysis Report

Core Question

Do traders behave differently when the market is fearful versus greedy?

Financial markets are influenced not only by fundamentals and data, but also by collective human emotion. The concept of **Fear vs Greed** measures the overall emotional state of the market and answers a central question:

Are traders currently fearful and defensive, or confident and aggressive?

This report investigates how market sentiment influences **trader behavior, risk-taking, and performance** by combining a Fear & Greed Index with detailed historical trading data.

Understanding Fear & Greed

The Fear & Greed Index (Simple Explanation)

The Fear & Greed Index typically ranges from **0 to 100**, with each range representing a distinct market emotion:

Index Range	Meaning	Market Emotion
0–25	Extreme Fear	Panic, uncertainty
26–49	Fear	Cautious, defensive
50–74	Greed	Confident, optimistic
75–100	Extreme Greed	Overconfidence, FOMO

The index captures **collective market psychology**, allowing systematic analysis of how emotional conditions influence trading decisions.

What Fear Means in Practice

When the market is in **Fear or Extreme Fear**:

- Prices are often falling or highly volatile
- Traders tend to:
    - Reduce risk exposure
    - Trade smaller sizes

- o Use lower leverage
- Some participants panic sell
- Others adopt contrarian strategies, viewing fear as opportunity

◻ *Dominant emotion:* "What if it goes lower?"

Empirical results show that while activity may decline, **average and total profitability often improve**, indicating that disciplined traders benefit during fearful regimes.

What Greed Means in Practice

When the market shifts into **Greed or Extreme Greed**:

- Prices are usually rising
- Traders become:
    - o More confident and aggressive
    - o Willing to take larger or more frequent positions
    - o More prone to FOMO-driven decisions

☑ *Dominant emotion:* "I don't want to miss this rally!"

Although **trading volume and frequency increase**, average profitability declines, suggesting that emotional overconfidence negatively impacts performance.

Data & Methodology

Market Sentiment Data

- Daily Fear & Greed Index values
- Used to classify days into sentiment regimes

Historical Trading Data

- Trade-level execution data including:
    - o Trade size (Token and USD)
    - o Direction (Buy/Sell)
    - o Execution price

- o Leverage

- o Realized profit or loss (Closed PnL)

- Each trade is timestamped and aligned with daily sentiment

Closed PnL represents realized performance, allowing direct comparison across sentiment regimes. **Size (USD)** is used as the primary proxy for risk exposure, enabling consistent comparison across assets.

Empirical Findings

Sentiment Regime Distribution

Analysis of 32,550 trades shows that most activity occurs during **Fear and Greed**, not neutral conditions, highlighting the importance of emotional regimes in real-world trading.

Profitability by Sentiment

- **Fear produces the highest total PnL**

- **Extreme Fear delivers the highest average PnL per trade**

- Profitability steadily declines as sentiment shifts toward Extreme Greed

This suggests that pessimistic markets create mispricing and opportunity, while optimistic markets compress returns.

Win Rate vs Quality of Returns

- Extreme Greed shows the highest win rate

- However, it also exhibits the **lowest average PnL**, indicating many small wins with limited upside

Win rate alone is therefore insufficient to evaluate trading quality.

Risk-Taking Behavior

- Largest average position sizes occur during **Fear**, not Greed

- Buy ratios decline as sentiment becomes greedier

- Extreme Greed is characterized by smaller, faster, less conviction-driven trades

This reflects speculative overconfidence rather than disciplined positioning.

Relationship Analysis

Scatter plot analysis shows:

- Trading volume and frequency increase during Greed, but not linearly

- Profitability is highly nonlinear and volatile during Fear

- Extreme outcomes cluster during emotional extremes

Correlation Analysis

Key correlations reveal:

- Weak negative correlation between sentiment and profitability

- Strong positive correlation between trade frequency and total PnL

- Sentiment influences *how* traders act more than *how much* they earn

Integrated Interpretation

The results establish a clear behavioral chain:

Market Psychology → Trader Behavior → Trading Outcomes

- Greed fuels participation and risk-taking but reduces efficiency

- Fear suppresses activity but creates high-quality opportunities

- Emotional extremes distort decision-making

The most favorable performance emerges when traders act **against prevailing sentiment** rather than with it.

Final Conclusion

Trader behavior is not emotionally neutral. Market sentiment significantly influences capital allocation, risk management, and performance outcomes.

In summary:

- Greed increases activity but lowers efficiency

- Fear creates opportunity for disciplined strategies

- Understanding sentiment is critical for sustainable trading performance

Incorporating sentiment-aware analysis alongside quantitative metrics provides a decisive edge in real-world trading environments.