

1. Objective

The goal of this analysis was to understand how market sentiment (Fear vs Greed) influences trading performance.

Two datasets were used:

- **Trader dataset** – contains individual trade details (PnL, volume, timestamp, direction).
- **Fear & Greed Index dataset** – provides daily market sentiment and score.

By combining both datasets, we analyzed whether traders performed better in **Fear**, **Neutral**, or **Greed** market conditions.

2. Methodology

Step 1: Cleaning the dataset

- Removed leading/trailing spaces from column names.
- Converted Timestamp IST into a proper datetime format.
- Extracted only the **date** part for daily grouping.
- Converted Fear & Greed dataset's date into datetime.

Step 2: Aggregating trader data

For each date, we calculated:

- **Total trading volume (USD)**
- **Total trades**
- **Average closed PnL**
- **Win rate** = number of profitable trades / total trades

Step 3: Merging with market sentiment

The aggregated trader data was merged with the Fear & Greed index using the **date** column. This allowed us to compare trading performance under different sentiment conditions.

3. Key Findings

A. Trading Activity

- Trading volume and number of trades varied significantly across dates.
- Higher volume was often observed during **Greed** phases compared to Fear phases.

B. Profitability (PnL)

- Average closed PnL fluctuated across days.
- Some days had **negative average PnL**, suggesting traders struggled regardless of sentiment.
- On days with **high Fear**, PnL tended to be slightly lower.

C. Win Rate

- Win rate was generally low, below **50%** on most days.
- The highest win-rate days corresponded slightly more with **Greed** periods.
- This suggests traders perform comparatively better when market sentiment is positive.

D. Market Sentiment Influence

- **Greed Days**: Higher volume, more trades, slightly better win rate.
- **Fear Days**: Reduced volume and lower profitability.
- **Neutral Days**: Mixed performance.

Overall, there was a **mild positive correlation** between Greed sentiment and better trading outcomes.

4. Visual Insights

- **Line charts** indicated how PnL, win rate, and volume move with changing sentiment.
 - Greed sentiment clusters show upward movement in:
 - total trading volume
 - number of trades
 - win rate
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5. Conclusion

The analysis shows:

- Market sentiment **does influence** trader behavior and performance.
- **Greed phases** see more activity and slightly better results.
- **Fear phases** correlate with lower trading performance and lower profitability.
- Traders appear to take more risk during Greed periods, and it sometimes pays off.

This suggests traders should consider market sentiment as a supporting indicator while planning trades.