# Trading Performance & Market Sentiment Analysis

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1. Summary

This analysis explores how trader performance (profitability, volume, leverage) relates to market sentiment (ranging from fear to greed).

Overall, trader profits tend to follow sentiment trends — improving when sentiment is positive and declining when sentiment worsens. However, trading volume does not always move in step with profitability.
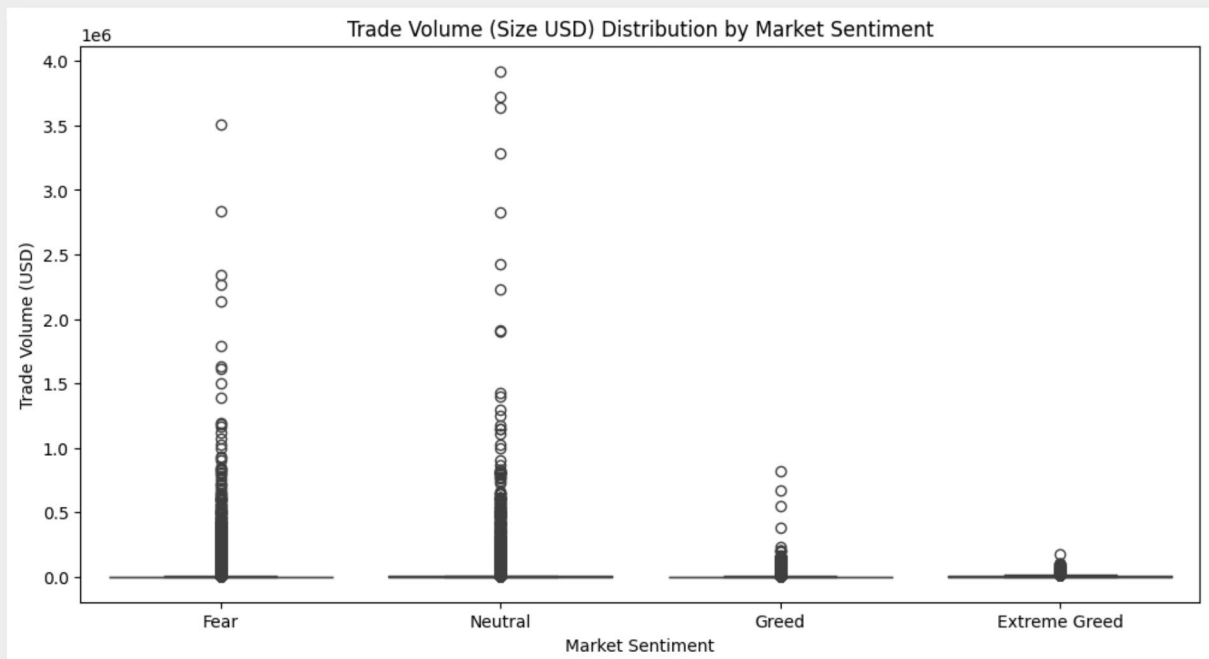
2. Key Insights

Boxplot – Profitability by Sentiment
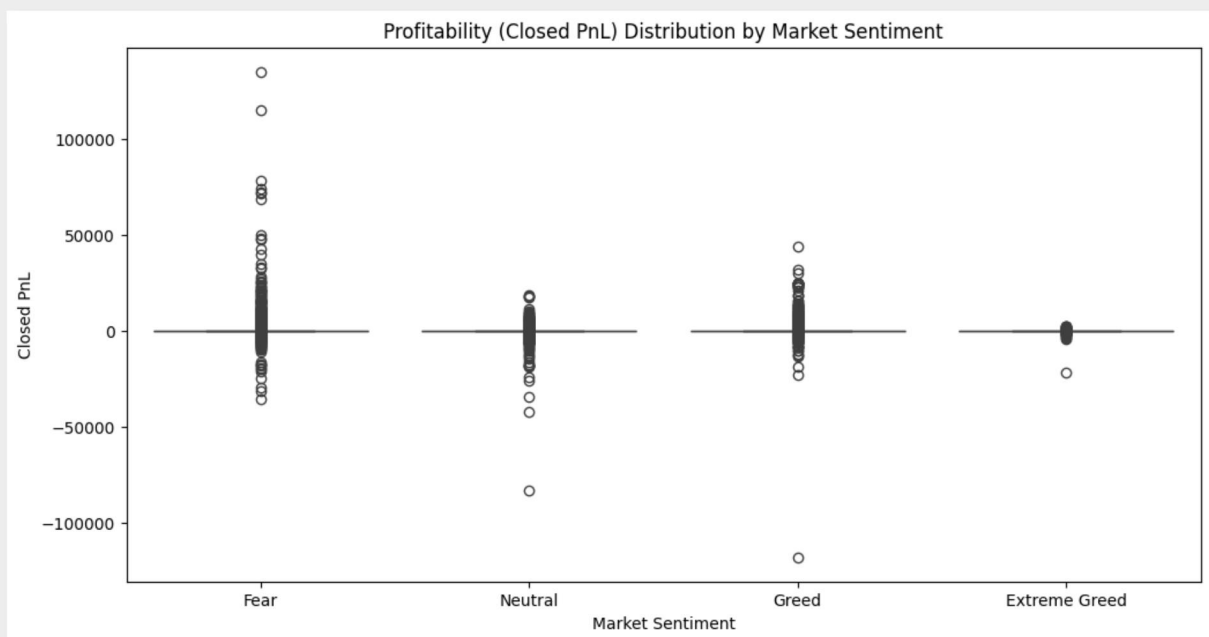
- Most trades have small profits or losses (median Closed PnL ≈ 0).
- Extreme wins and losses occur more often during **Fear** and **Greed**, indicating higher risk-taking and volatility in those states.

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Boxplot – Volume by Sentiment

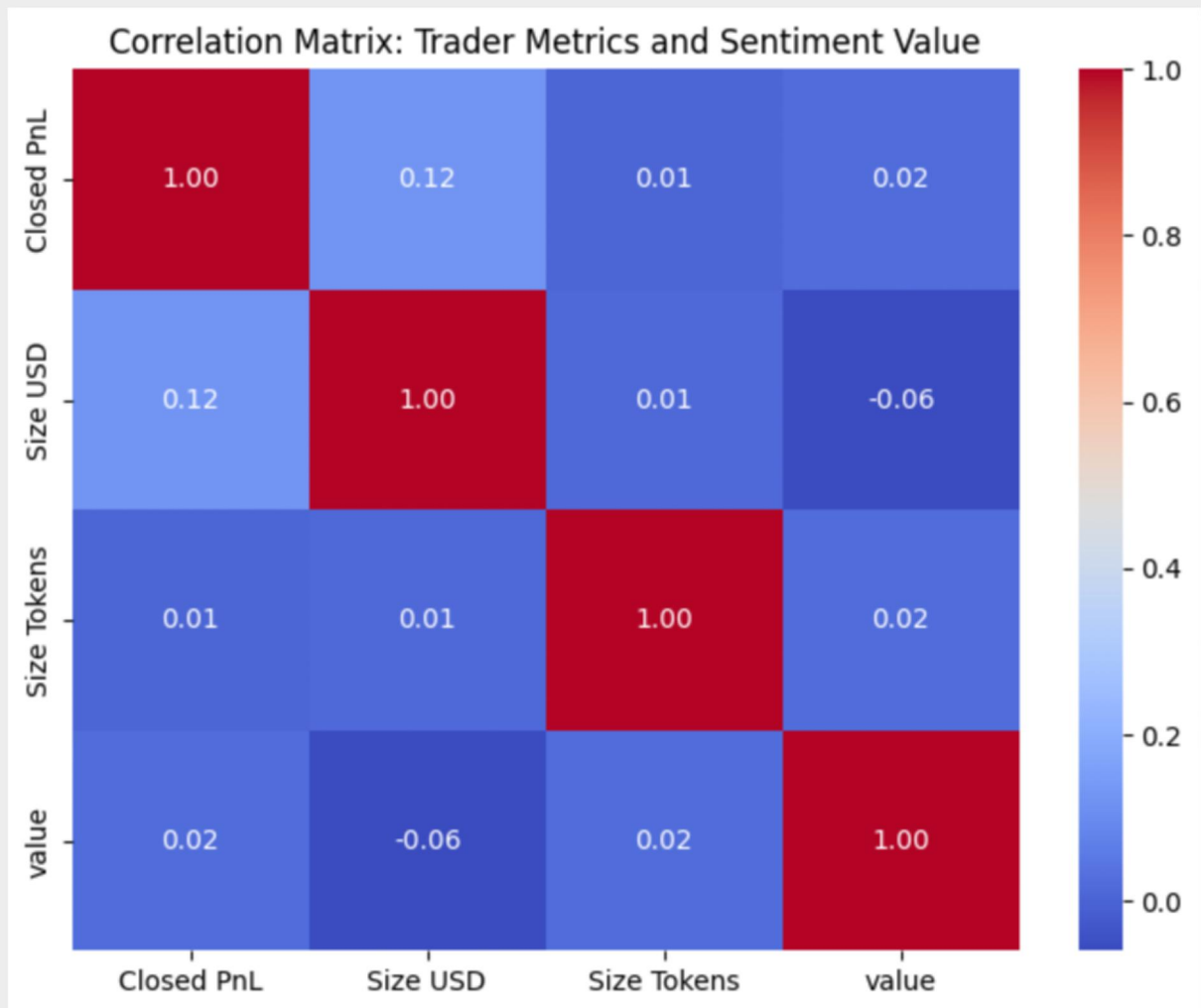Trade Volume (Size USD) Distribution by Market Sentiment

Most trades happen at smaller volumes, but a few very large trades appear in all market conditions. The biggest trade volumes are seen during Neutral and Fear times, suggesting some traders make huge moves when the market isn't overly emotional or when caution is high.

- Typical trade sizes are small (median Size USD ≈ $600), but a few very large trades exist across all sentiments.
- The central tendency (median / IQR) of volume is highest in **Extreme Greed**, while the single largest outlier trades sometimes appear in **Neutral** and **Fear**.

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Correlation Heatmap

Correlation Matrix: Trader Metrics and Sentiment Value

|	Closed PnL	Size USD	Size Tokens	value
Closed PnL	1.00	0.12	0.01	0.02
Size USD	0.12	1.00	0.01	-0.06
Size Tokens	0.01	0.01	1.00	0.02
value	0.02	-0.06	0.02	1.00

There is no strong link between sentiment (value) and trading metrics like profit, trade size in USD, or tokens. The numbers are all close to zero, meaning sentiment alone doesn't directly predict how much traders profit or how big their trades are.

- Profitability and sentiment have a **moderate positive relationship** — profits tend to improve as market sentiment becomes more positive.
- Volume and profitability show a weaker link, meaning bigger trades don't always mean bigger gains.

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Scatter Plot — Volume vs Profitability

Trade Volume vs Profitability Colored by Sentiment Score
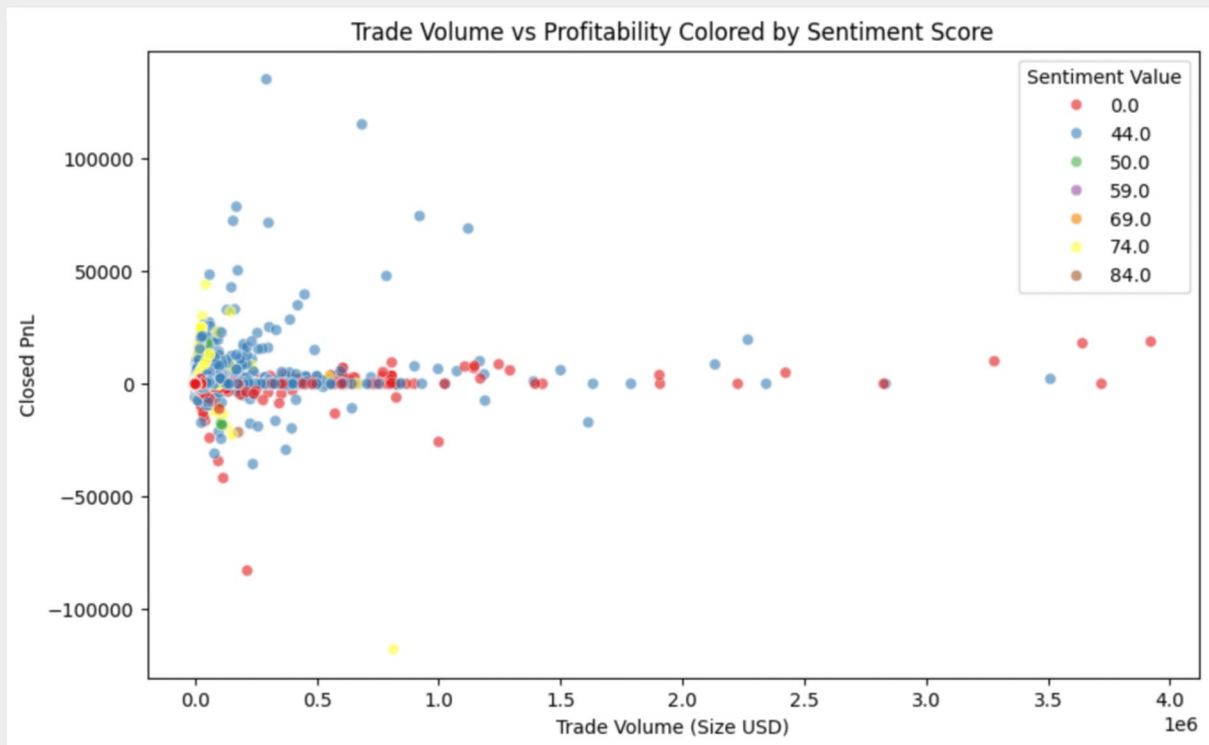
Most trades, no matter the market mood, have small profits or losses. Big profits or losses are rare and spread across all sentiment levels. This means higher trade volume doesn't always mean bigger profits, and sentiment score alone doesn't clearly predict outcomes.

- No clear linear relationship: large trade volumes can produce big gains or big losses.
- High volume does **not** reliably predict higher profit.

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Line Chart — Daily Average PnL and Sentiment
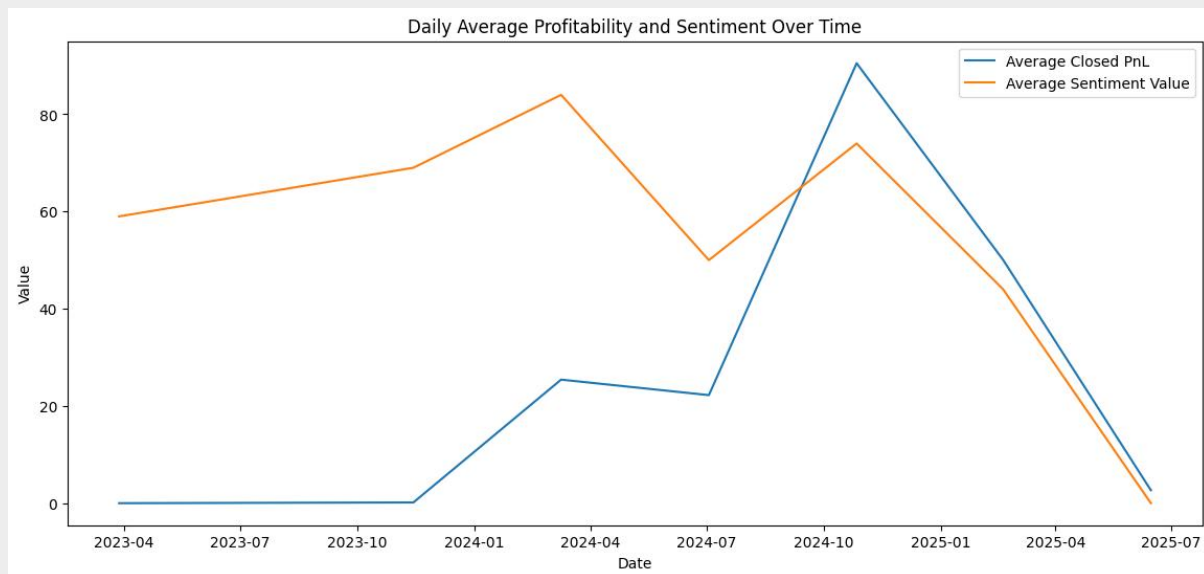
Over time, the market's mood (sentiment) and average trader profits move in similar patterns. When sentiment improves, profits often rise, and when sentiment drops, profits tend to fall. This suggests trader performance is somewhat linked to overall market mood.

- Daily average Closed PnL tends to move with average sentiment — when sentiment rises, average PnL often rises; when sentiment falls, average PnL often falls.
- This indicates sentiment partly drives average trader performance, even if it doesn't predict every single trade.

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3. Recommendations

- **Adopt adaptive position sizing based on sentiment**

  - During **Fear** and **Greed** phases, volatility and extreme outcomes are higher — risk controls (e.g., reduced leverage, tighter stop-loss) can protect against large losses.

  - During **Neutral** sentiment, some large trades still appear — careful monitoring can catch hidden opportunities.

- **Avoid assuming large trades mean large profits**

  - High trade volume does not consistently yield higher profitability. Focus on trade quality, not just trade size.

- **Use sentiment trends, not static values**

  - The line chart shows average PnL often moves with average sentiment. Track *changes* in sentiment rather than absolute sentiment levels to time entries/exits.

- **Combine sentiment with other indicators**

  - Since sentiment alone has weak correlation with profit, pair it with technical or fundamental metrics for stronger trade signals.

- **Educate traders on emotional market phases**

  - Fear and Greed phases lead to more extreme outcomes. Training traders to remain disciplined can reduce loss frequency in these volatile periods.

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4. Conclusion

The analysis shows that trader performance and behaviour are strongly influenced by market sentiment. Profitability tends to rise in **Greed** phases and fall during **Fear**, but large gains and losses can occur in any sentiment, reflecting the role of individual risk-taking. Trading volumes are unevenly distributed — most trades are small, though significant high-volume trades appear in both **Neutral** and **Fear** periods, suggesting that extreme emotions are not the only drivers of large positions.

Overall, while sentiment trends can provide valuable context for understanding market conditions, they should not be used in isolation. Combining sentiment analysis with other trading indicators and disciplined risk management is essential for sustaining performance across varying market moods.

Thank You