Trader Behavior Insights – EDA Report

Introduction

- The purpose of this analysis is to explore the relationship between trader performance and market sentiment.

Data Overview

Final Combined Dataset Columns:
['account', 'coin', 'execution price', 'size usd', 'side', 'trade_date',
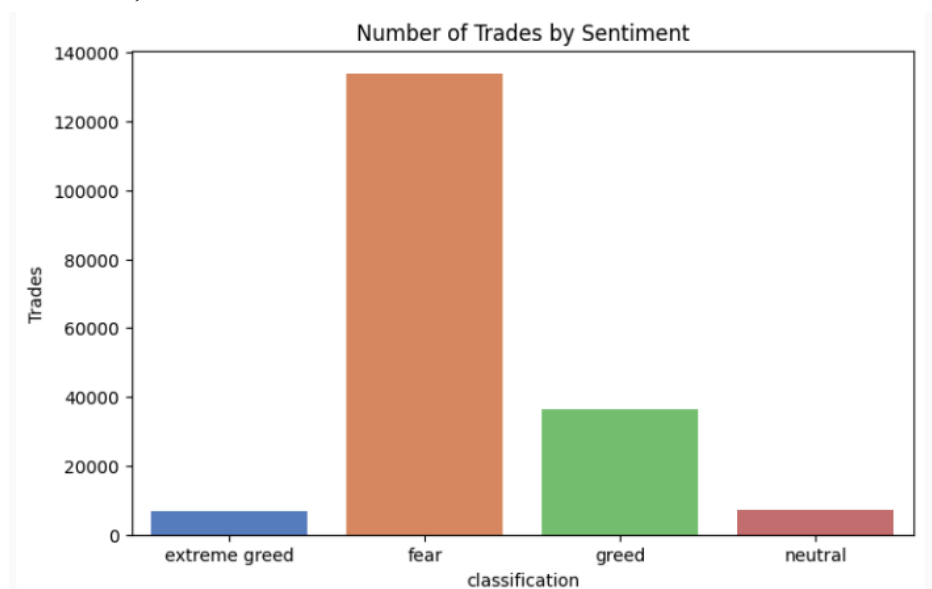   'closed pnl', 'classification', 'value']
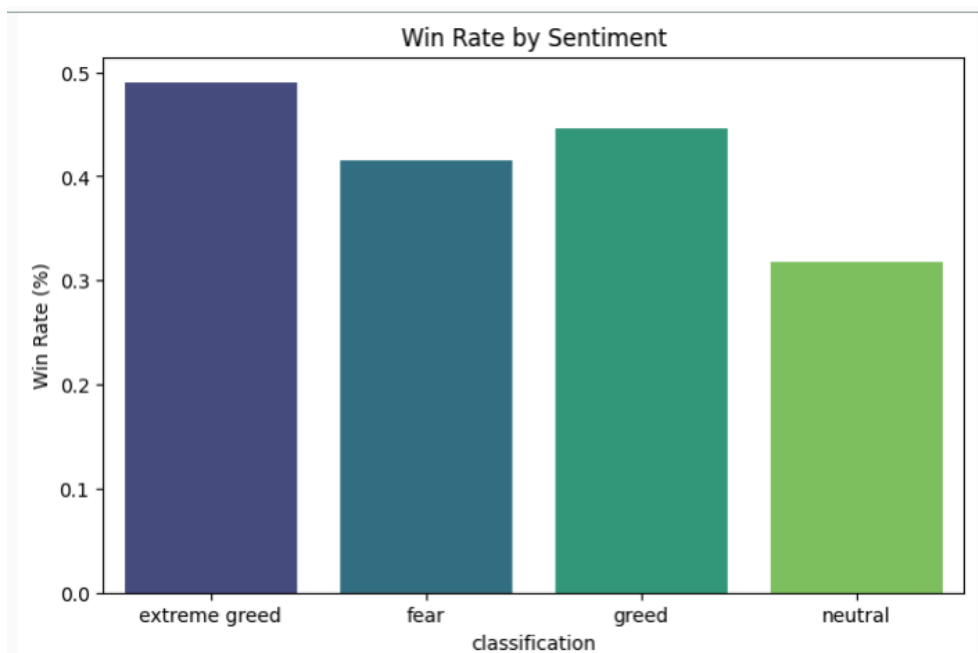
Exploratory Data Analysis (EDA)

Key Stats

- Unique Accounts: 32
- Unique Coins: 239
- Unique Sentiment Classifications: 4
- unique Side :2

Classification Distribution

- Extreme Greed: 6,962 trades
- Fear: 133,871 trades
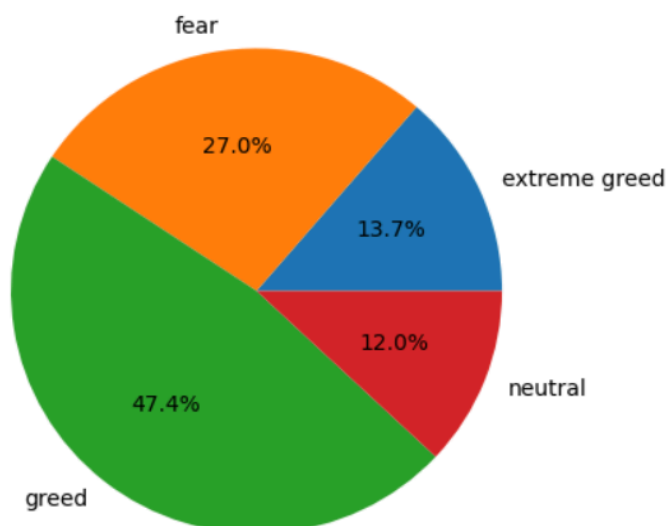- Greed: 36,289 trades
- Neutral: 7,141 trades

- Fear dominates trader activity with 133,871 trades (~70% of all trades).

- Greed comes next with 36,289 trades (~19%), showing traders also take big positions in optimistic phases.
- Extreme Greed (6,962, ~3.6%) and Neutral (7,141, ~3.7%) have very few trades compared to Fear/Greed.

Win Rate by Sentiment

- Win rate is highest during Extreme Greed, but Greed itself produces the highest profits per trade.

- Fear-driven trading is risky (lower win rate), but occasionally very rewarding.

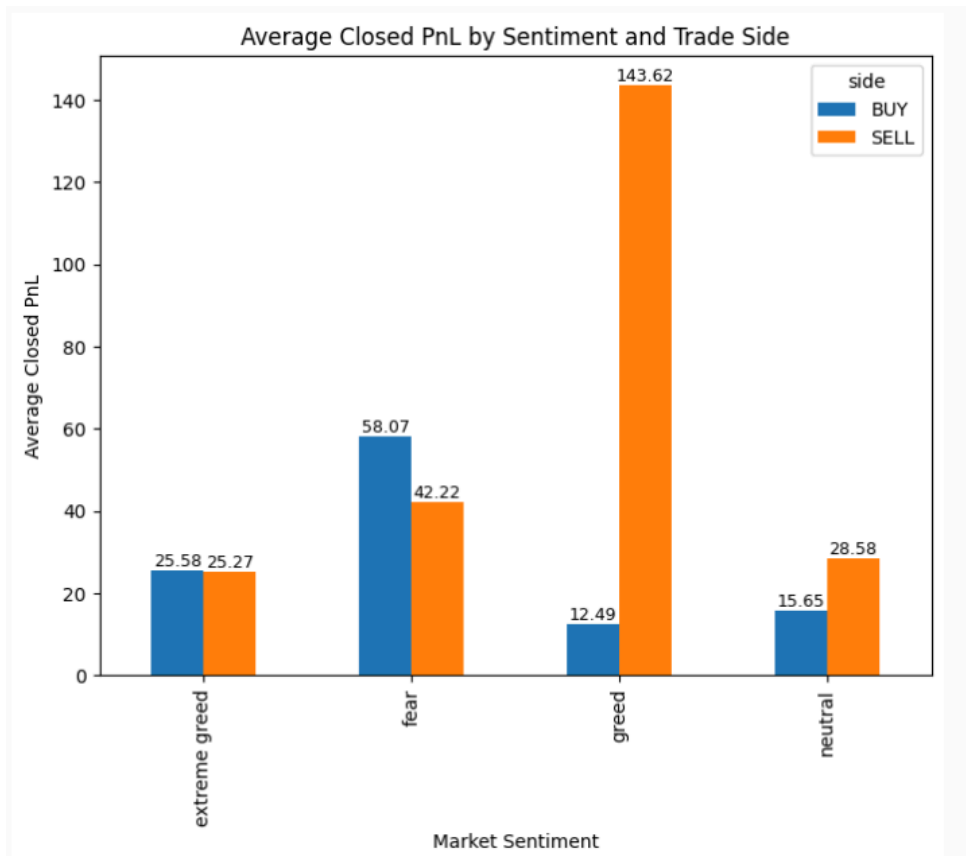- Neutral sentiment = worst performance, showing indecision hurts traders.

Key Questions & Insights

Q1: Do traders perform better in Fear or Greed?

Insight: Moderate Greed is best for traders, but extreme Greed and Neutral sentiment lower performance.

Q2: Do Buy trades perform better in Greed, while Sell trades work better in Fear?

Average Closed PnL by Sentiment and Trade Side

- In Fear, Buy trades outperform Sell trades (58 vs 42).
- In Greed, Sell trades massively outperform Buy trades (144 vs 12).
- In Extreme Greed & Neutral, performance is modest and balanced between Buy and Sell.

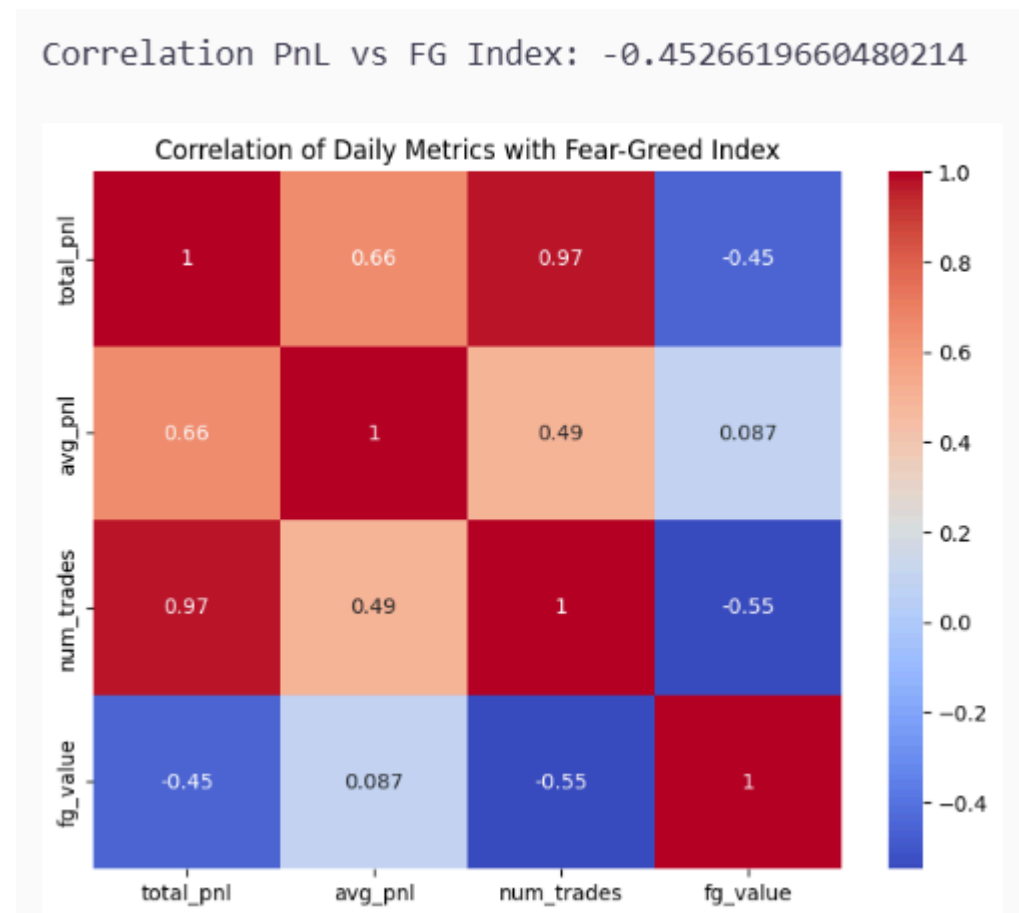Q4: Which sentiment phase is most consistent?

- **Extreme Greed** shows the **highest win rate (49%)**, though PnL is moderate.

- Indicates traders achieve **smaller but more reliable gains** during extreme confidence phases.

Q5: Is there an optimal strategy per sentiment?

- **Greed**: Favor **long positions (Buy)** for maximum profitability.
- **Fear**: Favor **short positions (Sell)** to capture market downturns.
- **Neutral**: Avoid aggressive positions, as win rate and PnL are both lowest.
- **Extreme Greed**: Best suited for **scalping strategies** with high consistency.

Correlation Analysis

Correlation between Closed PnL and Fear–Greed Index: -0.45


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Correlation PnL vs FG Index: -0.4526619660480214
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Correlation of Daily Metrics with Fear-Greed Index

	total_pnl	avg_pnl	num_trades	fg_value
total_pnl	1	0.66	0.97	-0.45
avg_pnl	0.66	1	0.49	0.087
num_trades	0.97	0.49	1	-0.55
fg_value	-0.45	0.087	-0.55	1

Suggests a moderate negative correlation: as market moves towards Greed, average trader profitability decreases.

Key Takeaways

- Greed sentiment produces the highest profitability but not the highest win rate.
- Extreme Greed phase shows better consistency (win rate), but lower PnL.
- Traders are most active in Fear phases, though profits are lower.
- Market sentiment is a useful predictor for strategy optimization.