Bitcoin Market Trader Sentiment Analysis

By Vaishnavi Malge

Objective

To explore the relationship between trader performance and market sentiment, uncover hidden patterns, and deliver insights that can drive smarter trading strategies.

Important

- The historical dataset has two columns for a date. Timestamp column is referring to logging and Timestamp IST refers to trade execution date and time.As the objective of a project is about uncovering the patterns of relationship between trader performance and market sentiment, I considered the **Timestamp IST** column for further analysis.
- Fear/Greed(Sentiment) dataset has two columns for date but after conversion it is observed that both columns indicated the same date. For convenience choose the **date** column.
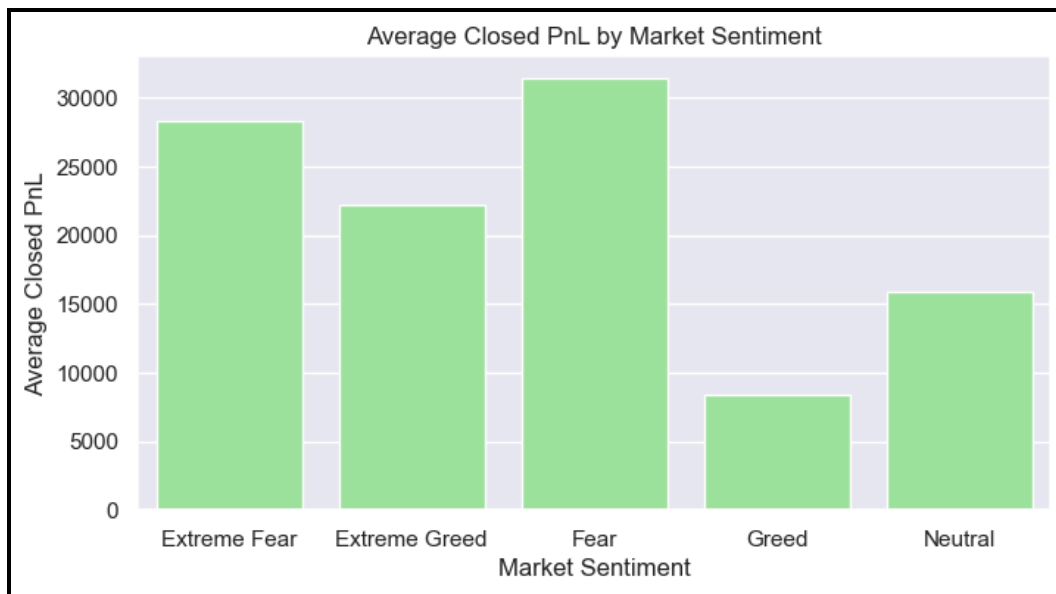
Statistical Descriptive Analysis

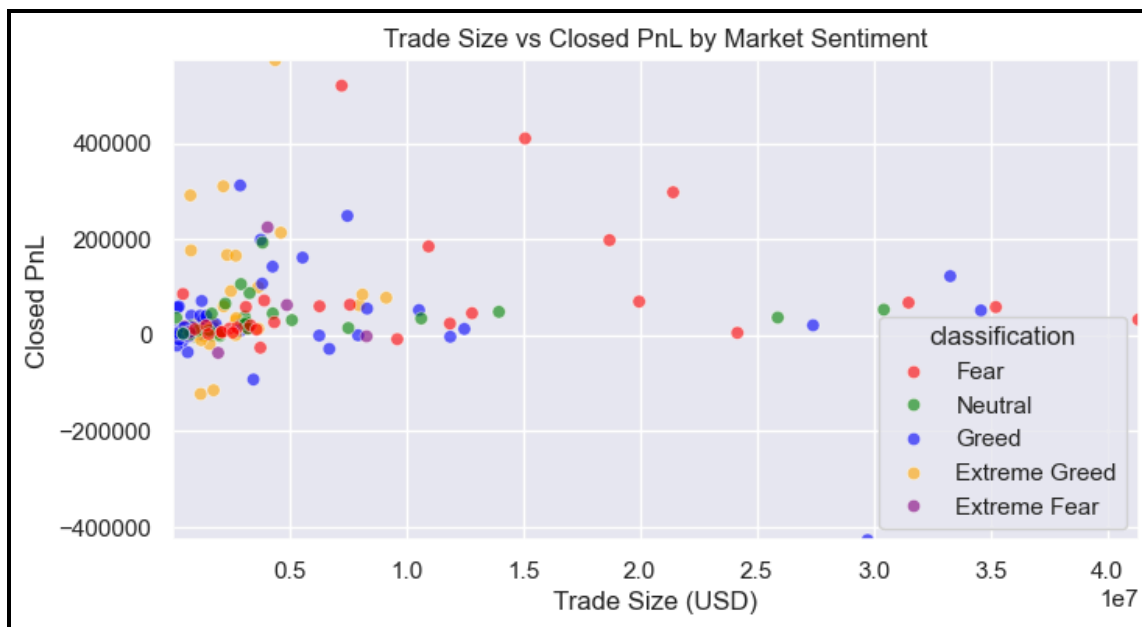|	Date	Execution Price	Size USD	Closed PnL	Buy_Count	Sell_Count	value
count	449	449.000000	4.490000e+02	449.000000	449.000000	449.000000	449.000000
mean	2024-08-12 02:24:19.242761728	11372.620635	1.953809e+06	17242.300880	165.565702	174.440980	61.162584
min	2023-01-05 00:00:00	0.000015	1.100000e-01	-427336.928648	0.000000	0.000000	10.000000
25%	2024-04-12 00:00:00	892.907623	8.691437e+04	0.000000	7.000000	6.000000	49.000000
50%	2024-08-09 00:00:00	3433.470732	2.727421e+05	964.253550	27.000000	28.000000	70.000000
75%	2024-12-10 00:00:00	13680.541180	1.115058e+06	7236.972505	145.000000	192.000000	74.000000
max	2025-05-02 00:00:00	68880.000000	4.133083e+07	573752.904775	3982.000000	1871.000000	94.000000
std	NaN	17136.536980	5.269417e+06	64465.004237	368.816436	321.173048	18.207701

Observation:

- Available data is for a 2.5 year for a duration of Jan 2023 to May 2025
- Most of the trading has performed at around a price 11000 to 13000, outlier do exist
- For most of the days traders have experienced profits with an average closing time profit of 17242
- Buy and sell counts for most of the trades are balanced.
- For most of the days the market sentiment is observed greedy

Average Closed PnL by Market Sentiment

- More profit is observed to be gained by trader on fear and extreme fear market sentiment
- When the market is greedy less profit is gained compared to other days
- When the market is extremely greedy or neutral, the trader has moderate gain.
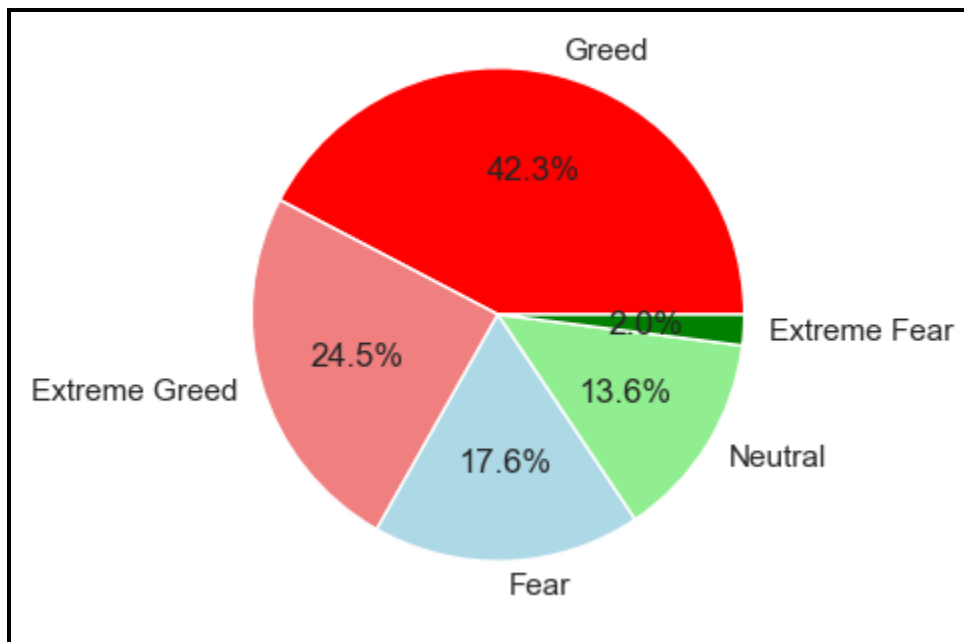- Irrespective of market sentiment traders always have gained profit(lightgreen colour).

Trade Size vs Closed PnL by Market Sentiment

- note: 1e7 = 1 * 10^7

- During fear sentiment moderate size trade gives more benefit.
- During extreme(fear or greed) sentiments risk is more, so it's better to do less or avoid trading
- Having more trade size do not ensure profit

Proportion of Market Sentiments for duration 01/2023 to 05/2025

- Most of the time the market is observed to be as greedy indicating that less traders gain.
- The frequency of occurrences of extreme fear, fear and neutral market sentiments are almost similar whereas the extreme fear experienced only a few times.
- Most of the trading has done on greedy or neutral days, while a very few trading has observed on fear sentiment

For detail eda and code refer to git repository:
https://github.com/VaishnaviMalge/Bitcoin_Market_Trader_Sentiment_Analysis