

Deciphering Crypto Trends: Google Trends Analysis and Predictive Modeling Report

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Introduction

The Deciphering Crypto Trends project is dedicated to finding correlations between characteristics of various cryptocurrencies to make better investment decisions in the upcoming bull market. Furthermore, with the execution of exploratory data analysis, statistical analysis, machine learning modeling, and predictive analytics, there are inferences that individuals can make to have better decision making on the following researched tokens.

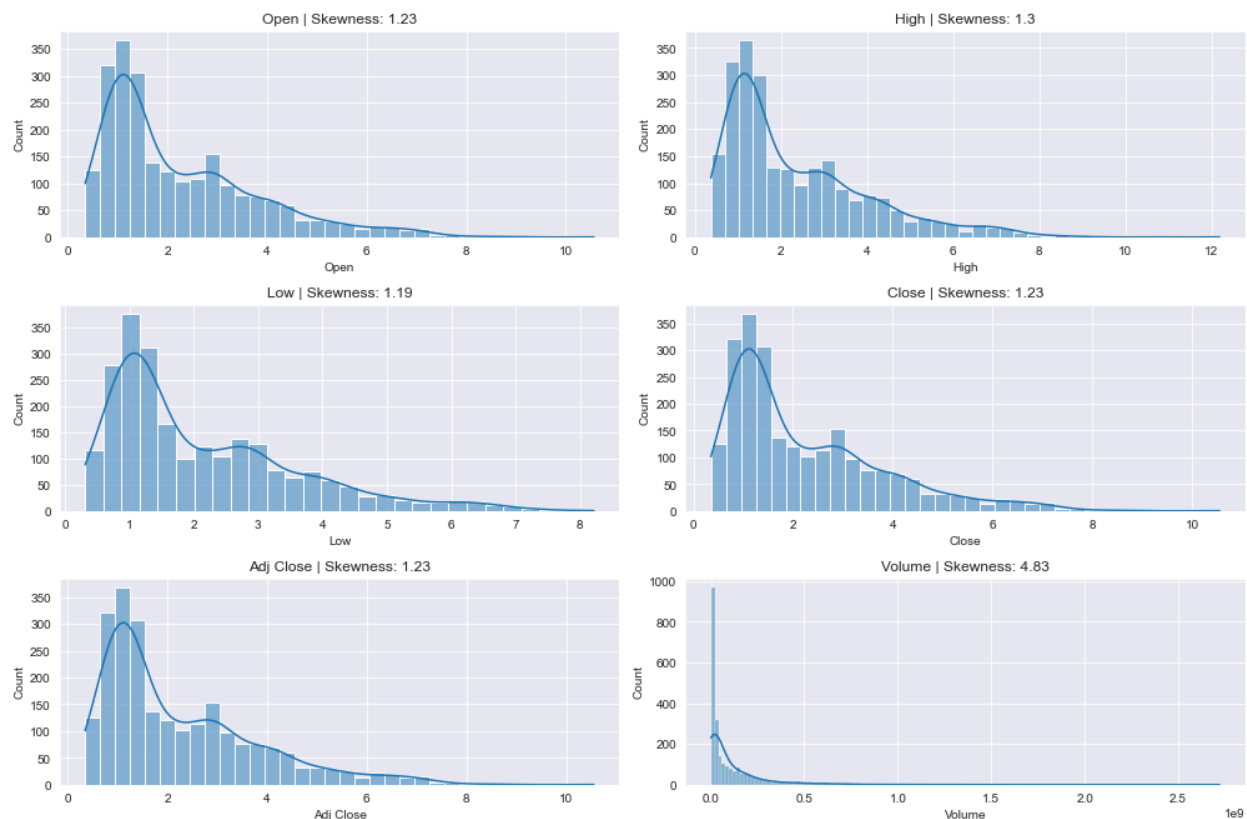
The 20 cryptocurrencies analyzed in this report are following: Cardano(ADA), SingularityNET(AGIX), Binance token (BNB), Bitcoin(BTC), Pancake(CAKE), Dogecoin(DOGE), Polkadot(DOT), Ethereum(ETH), Fetch AI (FET), Filecoin(FIL), Kucoin token(KCS), Chainlink(LINK), Litecoin(LTC), Ocean Protocol(OCEAN), Oasis Network(ROSE)', Solana(SOL), Uniswap(UNI), Monero(XMR), Ripple(XRP), Tezos(XTZ). All of these tokens fall under one or more of the following categories: memecoins, legacy tokens (i.e. Bitcoin), exchange tokens, oracle tokens, privacy coins, AI coins, Layer-2's (scaling solutions),

Key Findings

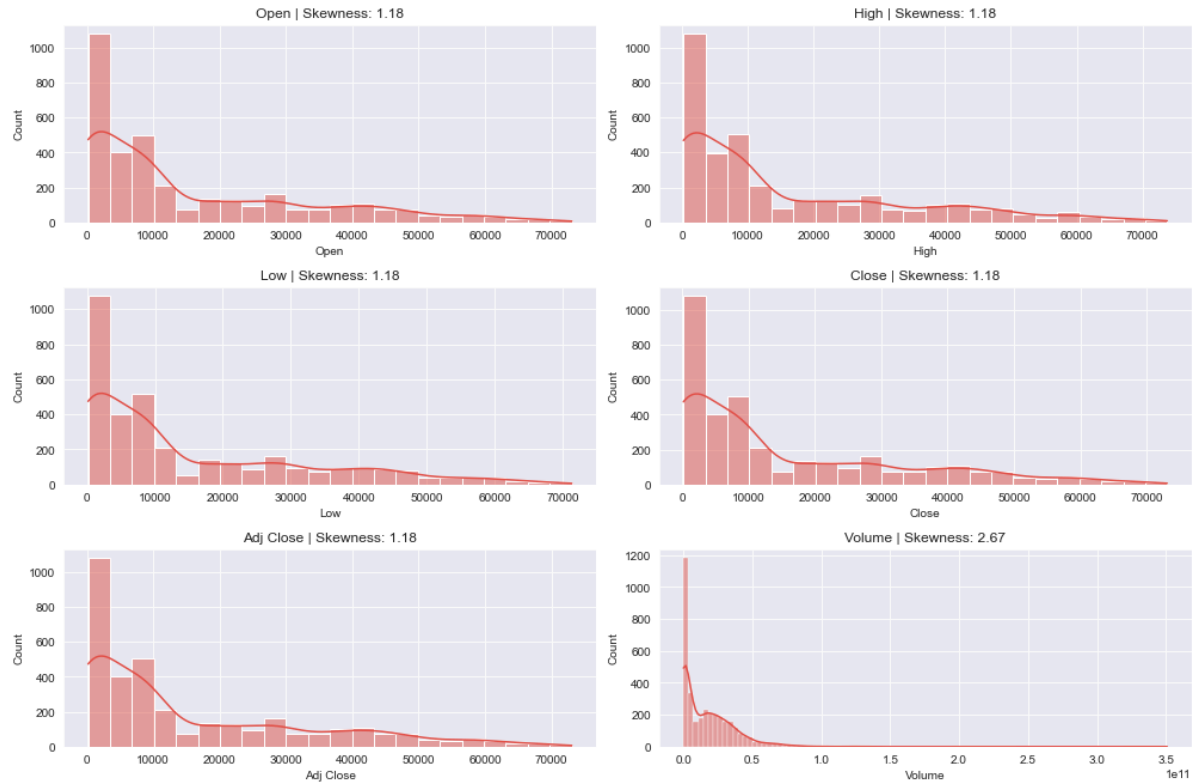
- Bull runs bring more influx of trading volume across all tokens
- Legacy tokens tend to have more consistent buying regardless of price fluctuations
- Buyers like to buy low and sell high in crypto; the swarm plots displayed the active traders buying low to mitigate losses.
- Buyers are more likely to dump new alt-coins than legacy coins or tokens with an appropriate supply.
- Higher circulating supply means lower token price in fiat given the market cap/volume of transactions.
- Bitcoin and Ethereum are safe purchases compared to memecoins such as Doge.
- Exchange tokens such as KuCoin and Uniswap have high transaction volumes at the start of inception.

Data Visualizations

The following is an EDA of temporary DataFrame comprised of all combined 20 datasets. Upon review there's a normal distribution for every column {Open, High, Low, Close, Adj Close, Volume} skewed to the right. This means that this is a positively skewed distribution. From this we can conclude that $\text{mean} > \text{median} > \text{mode}$. After I conduct an EDA on each token we'll be able to see if any tokens have a normal distribution so that I can possibly apply Gaussian distribution methods.



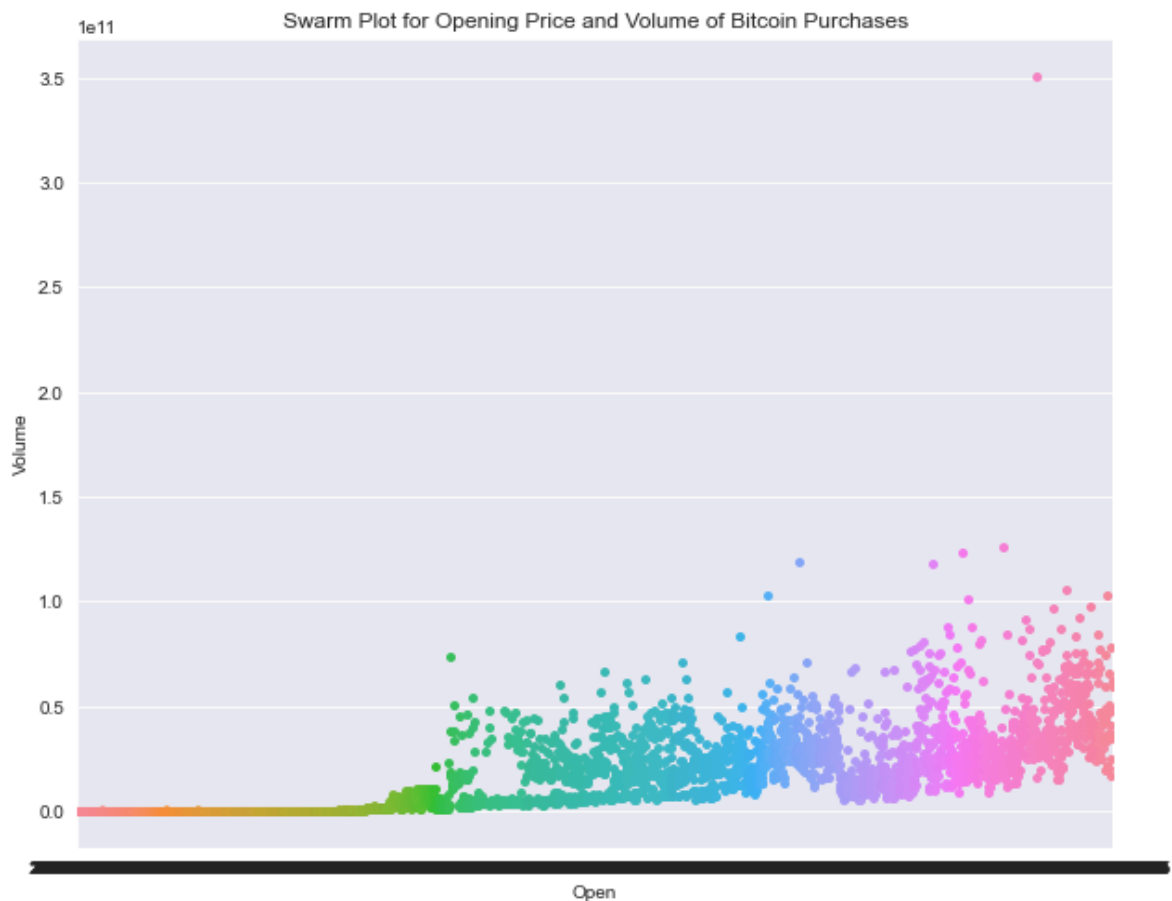
Below is the EDA of Bitcoin. The pervasive positive skewness observed across these distributions, serves as a conspicuous indicator of outliers within Bitcoin. This is definitely present in the volume histogram. These outliers potentially signify days characterized by atypical market behaviors. Moreover, the uniformity evident in the Open, High, Low, Adj Close and Close implies a persistence of market conditions from the opening to close, devoid of pronounced price influxes.



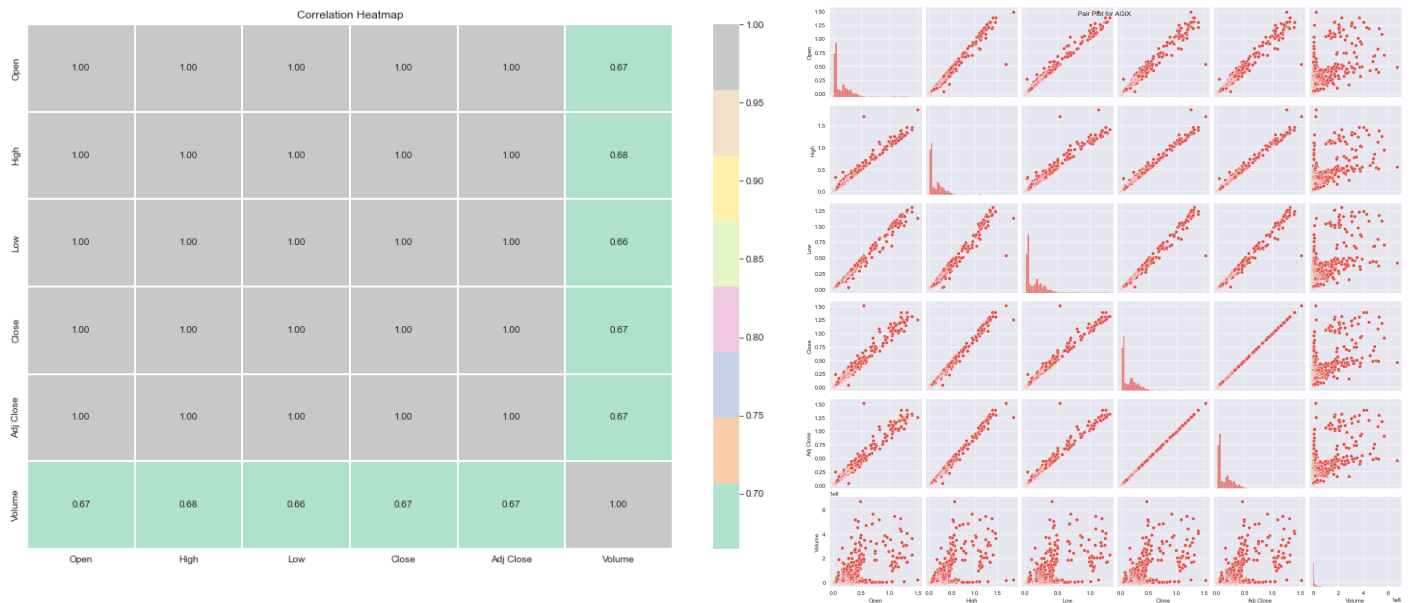
The following swarm plot shows an influx of purchases in Cardano at the open of the market. According to the chart later in the market open the distribution of Cardano purchases increases. The outliers in between the bounds of 1.25×10^{10} and 2×10^{10} show a lucrative amount of purchases approaching market “close”. Because of the nature of the cryptocurrency market, there is no true market “open” or “close” because it is a 24/7 free market unlike the stock market so this shows.



A very interesting pattern discovered in the swarm plot analysis of each token is that legacy tokens, meaning tokens that have been in existence for a longtime tend to have more consistent distributions. These legacy tokens include Bitcoin, Litecoin, Monero. In tokens used for exchanges or even native alt-coins, there's a big jump. As the opening price increases, the number of transactions decreases. So, fewer traders are willing to trade at higher prices because the common method from traders and crypto users is simple, "buy low sell high." Also, there's a culture of buying alt-coins to dump them later for more consistent investments such as BTC and ETH. Which is why the graphs reflect more a consistent holding relationship with legacy tokens and exchange tokens than other alt-coins.



Please see other data vizzes in **Jupyter notebook**.



In-depth Analysis

According to the Swarm Plot for alt-coins, the volume of transactions increases significantly closer to the end of the opening market. Most of the swarm plots for the other tokens reflect the same pattern, however legacy tokens such as Bitcoin and Litecoin reflected a much more consistent purchase behavior. The “buy low sell high method” is universal across all 20 tokens studied in this research. Bitcoin often shows significant correlations with other major cryptocurrencies like Ethereum and Monero. This can indicate that movements in Bitcoin's price could potentially lead or influence trends in the broader cryptocurrency market

Conclusion

It's best to buy tokens at periods of dips, closing price is better than opening. All tokens experienced all time highs after 8-16 months of the most recent Bitcoin Halvening. Since the last Halvening was this month (April), from now until February 2025, will be the best time to stock up on tokens, especially AI tokens such as AGIX, OCEAN, and more since AI is a hot topic in the market. Monero will also be a great token purchase as privacy and security concerns arise in the crypto space leading up to the next Bitcoin bull run. Reiterating all points made in key findings, it is best to study buyers in previous bull-runs to mirror best purchase times for this 2024 Halvening market.