A comparative study of Bitcoin's Price fluctuations by Twitter sentiments

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Abstract

Cryptocurrencies are digital currencies that utilize blockchain technology, a radical, decentralized, and cryptographic technology that allows for the digitalization of trust. In the case of cryptocurrencies, blockchain technology theoretically eliminates the function of governments as currency providers and the role of intermediary (third-party) parties in transaction verification. During the last few years, the scrutiny of bitcoin and other cryptocurrencies as legally regulated components of financial systems has been increasing insignificantly. Bitcoin is one of the biggest cryptocurrency in terms of capital market share and trading volumes. This study is going to determine whether the sentiments in Twitter about Bitcoin have an influence on overall market and pricing of the Bitcoin. The volatility of Bitcoin's price can be related to the Twitter sentiments and that's what this study is going to reveal and how it's correlated with each other. The tweets of Bitcoins have been taken by using Twitter's API from June 2021 till September 2021. For this study there are different predictive and descriptive models have been applied that are important for data analysis. The sentiments are being categorized into three parts, positive, negative and neutral. These are done by using data scrapper using python scripts. VADER sentiment analysis will be used to analyze the tweets and it provides several benefits including the fact that it doesn't only classifies text as positive, negative or neutral but also measures the polarity and intensity of the words used. Another benefit of using VADER sentiment analysis is that it doesn't require the data to be simplified and remove punctuations or emojis'. It will process the data and check intensity and emotions of the text with punctuations. As a result, this study gives an understanding of Bitcoin's price fluctuation related to twitter sentiments but it has limitations as this data has been processed manually and there will be a chance that it does has a deeper correlation other than only trading price. By utilizing this study it gives an idea that users can make better informed purchase and selling decisions based on twitters current sentiments. The results will significantly prove that twitter sentiments do impact bitcoin's price and trading volumes.

Keywords: *Blockchain, Bitcoin, Twitter, VADER, Sentiment Analysis, Social Media, Cryptocurrencies.*