The Impact of Social Media Sentiment on Cryptocurrency Markets

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Abstract

Cryptocurrencies have emerged as a disruptive force in the global financial landscape, characterized by high volatility and sensitivity to public sentiment. As these digital assets gain mainstream adoption, understanding the factors that influence their price dynamics becomes crucial for investors, regulators, and market participants. Traditional financial models often fall short in capturing the unique characteristics of cryptocurrency markets, demanding innovative approaches to price forecasting.

Recent literature has increasingly recognized the potential of social media sentiment analysis and deep learning techniques in predicting cryptocurrency price movements. Studies have explored various social platforms, including Twitter and Reddit, demonstrating correlations between public sentiment and market behavior. Simultaneously, advancements in natural language processing and neural network architectures have opened new avenues for more accurate and nuanced analysis of market sentiment and its impact on asset prices.

Key findings reveal that sentiment indicators derived from Telegram, including positive, neutral, and negative sentiment scores and message volume, serve as significant factors in cryptocurrency price formation and volatility. We introduce an efficient weighted average method that incorporates these sentiment factors, yielding superior forecasting accuracy compared to traditional time series models based solely on price action.

Our research contributes to the literature on market efficiency and behavioral finance in digital asset markets, underscoring the role of social media sentiment in price discovery processes for cryptocurrencies. The results suggest that incorporating sentiment analysis from platforms like Telegram can mitigate information asymmetry and enhance the predictive power of cryptocurrency valuation models, offering valuable insights for various stakeholders in the rapidly evolving digital asset ecosystem.