

Understanding Public Sentiment Towards Crypto Assets

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This study aims to examine the evolution of public sentiment towards crypto assets. The research approach involves sentiment analysis methodology utilizing the SentiStrength v2.3 software. The data utilized in this study is secondary and obtained from scholarly publications indexed in the Scopus database. A total of 112 scholarly publications related to the research topic were identified. The research findings indicate that positive sentiment accounts for 27%, negative sentiment for 34%, and neutral sentiment contributes 39%. Further analysis reveals that the year 2023 marked a period with the highest number of sentiments, with positive sentiment dominating with 23 sentiments. This sentiment analysis method provides an in-depth understanding of the dynamics of public perception towards crypto assets, and these findings can offer valuable insights into the trends and shifts in sentiment that occur over time. Sentiment analysis can offer deep insights into how cryptocurrencies are perceived by the public and how these perceptions evolve in line with changes in social and economic contexts.

Keywords: Crypto Asset; Sentiment Analysis; Text Analytic

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1.1.

INTRODUCTION

Cryptocurrency is defined as a digital asset designed to function as a medium of exchange, with cryptography securing transactions and controlling the creation of additional currency units (Fantazzini & Calabrese, 2021). In its development, cryptocurrency has rapidly transformed the landscape of industry and society, leading to the decentralization of interactions among consumers, companies, and policymakers (Desmond et al., 2019). Since the emergence of digital currencies in 2010, the proliferation of billions of cryptocurrencies with the implementation of blockchain technology has become a significant trend (Shin & Rice, 2022). The rapid development of distributed ledger technology paves the way for various innovations in the world of cryptocurrencies (Hayes, 2019). Leading industry companies also invest in harnessing blockchain technology to enhance their product portfolios, while crypto technology is anticipated to drastically alter the way current online applications are used (Shin & Rice, 2022).

Undeniably, since the emergence of Bitcoin in 2009, research on cryptocurrencies has become one of

the most relevant topics in the field of finance (Fantazzini & Calabrese, 2021). Some studies even indicate that cryptocurrencies are not only utilized as alternative transactional tools but are also considered investment assets with allure (Böyükaslan & Ecer, 2021). This view aligns with research by Glaser et al. (2014), which notes that many users perceive their investments in cryptocurrencies more as speculative assets than as payment tools.

Nevertheless, there are noteworthy trends to be observed. The total cryptocurrency market capitalization experienced a nearly 10% decline in the third quarter of 2023, resulting in an absolute decrease of approximately \$119 billion. Starting from its peak in April, the total cryptocurrency market capitalization underwent a significant decline, reaching 16.3%. Data also indicates that after its volume decreased at the end of March, the volume continued to gradually decline (Figure 1). These changes create intriguing and challenging market dynamics, which may influence investors' views and strategies towards cryptocurrencies.

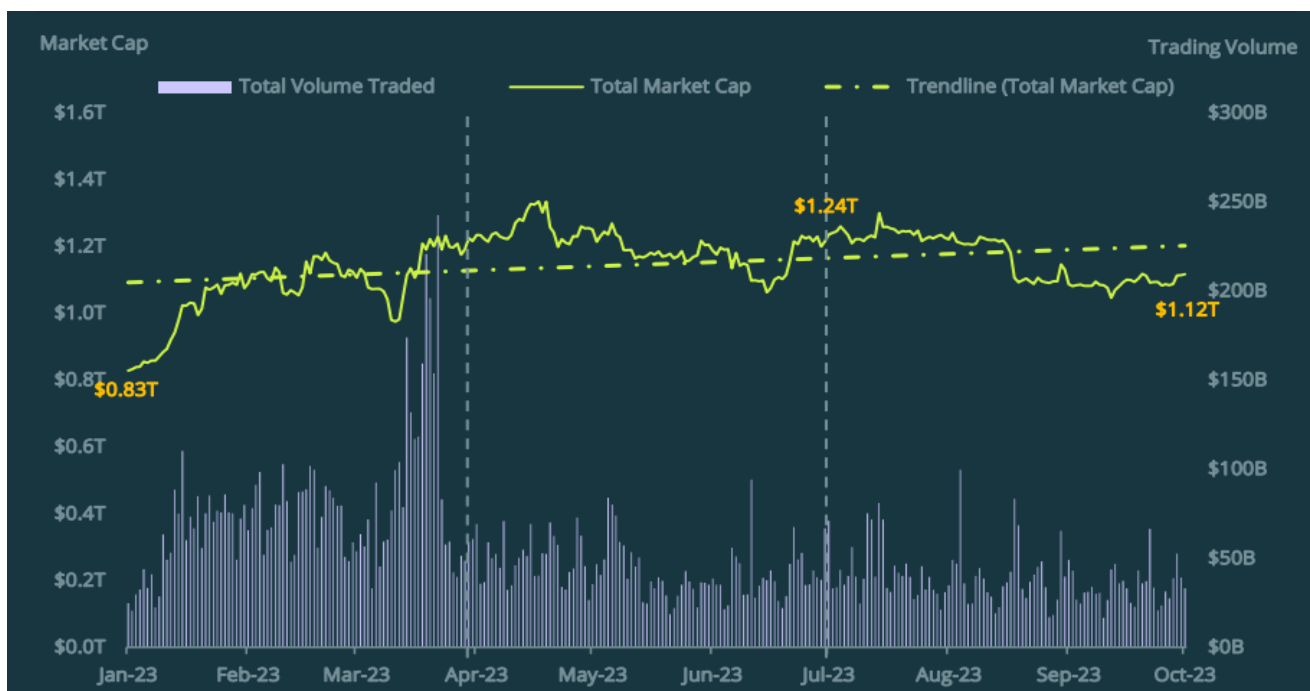


Figure 1. Total Market Capital & Spot Trading Volume (Jan-Sep 2023)

Source: (CoinGecko, 2023)

Although the level of adoption of crypto assets is difficult to measure accurately, surveys and measurements indicate that markets in both developing and developed countries may lead this adoption trend. A study shows that residents in these countries significantly increased crypto trading activities in 2021

(Drakopoulos et al., 2021). These findings are reinforced by survey results from the FINDER platform (2022), which ranks Vietnam as the country with the largest crypto asset adoption in the world, with 28.6% of its population owning cryptocurrencies. This is followed by India at 23.4%, Australia at 22.9%, and

Indonesia in fourth position with 22.4%. Bitcoin remains the most popular crypto asset, contributing the highest share of the total market capitalization at 46%. These results reflect a strong trend regarding public interest and participation in the crypto asset ecosystem, particularly in countries with high adoption rates. The significant understanding and participation in this crypto market indicate substantial growth potential in the digital currency space, especially in countries noted as leaders in this adoption.

Based on the background provided, the researcher endeavors to explore sentiment towards crypto assets using secondary data, namely scholarly literature indexed in Scopus, collected from 2021 to 2023. One of the main objectives of this research is to gain an in-depth understanding of the trends in public perception through literature related to the development of crypto assets during this time period. The use of scholarly literature as secondary data sources has the potential to provide rich and deep insights into how views on crypto assets evolve within the scope of academic literature. By analyzing indexed literature, this research aims to describe and analyze the diversity of sentiments contained within scholarly literature during the studied period. Thus, the research outcomes are expected to make an important contribution to our understanding of how the development of crypto assets is reflected and understood in scholarly literature.

RESEARCH METHODOLOGY

This research utilizes secondary data sourced from the Scopus database. The data used in this study

consists of scholarly publications with the theme of crypto assets. The information retrieval strategy employed in this research is based on a systematic review organized with meta-analysis. The Scopus digital academic database was chosen to search for articles, filter, extract, and organize this study.

This study employs purposive sampling technique, which involves sampling based on predetermined qualifications. These samples can be classified as decision (consideration) samples, selecting samples based on research notes or objectives and sample quotas, which are samples taken based on specific quotas or categories determining population dimensions (Wijaya, 2013). Sampling was conducted by typing the keyword "crypto asset" on the Scopus website. After selecting journal articles, the data was then collected in the form of metadata.

The data analysis method used in this study is Sentiment Analysis or opinion mining with a lexicon-based approach. The primary objective of sentiment analysis is to classify text polarity at the sentence, document, or aspect/feature level - whether the arguments expressed in the sentence, document, or aspect/feature indicate positive, negative, or neutral sentiment (Yousif et al., 2019; Aziza, 2023). It is a method of processing and analyzing individual attitudes, opinions, sentiments, and text subjectivity (Liu, 2012). Simply put, text analysis aims to process words, not numbers (Rusydia & Izza, 2022).

The following are the steps performed in the sentiment analysis process. Figure 2 illustrates the procedure for conducting sentiment analysis.

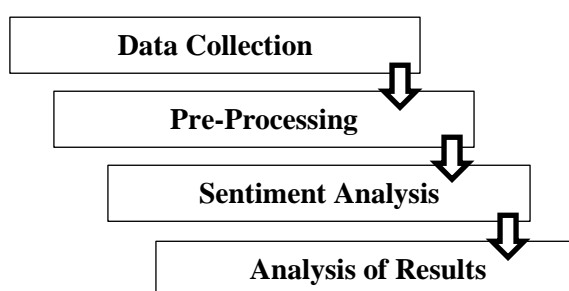


Figure 2. Research Steps

1. **Data Collection:** In this phase, the researcher selects the source from which they want to extract sentiment (Alamoodi et al., 2021). In this study, the researcher chooses Scopus as the data source. Subsequently, the researcher conducts a keyword search for "crypto asset" to obtain desired information based on their preferences. Data is collected in the

form of metadata with academic publications ordered based on the most citations.

2. **Pre-Processing:** Data cleaning or pre-processing stage. In this context, the data cleaning process aims to identify noise and irrelevant content. This includes removing repeated letters, text corrections, language detection, and other tasks. Raw

data is often incomplete, inconsistent, and may contain many errors. Therefore, a pre-processing stage is required to transform raw data into a structured and understandable format.

3. Sentiment Analysis: The third step is the lexicon approach applied to extract sentiment from each research content on crypto assets. In this stage, metadata that has undergone pre-processing is processed using Sentistrength Software, an algorithm

for opinion mining that uses the lexicon approach as a classification method. A lexicon is a collection of words commonly used to express positive, negative, or neutral sentiments, which are assigned values to each word (Najib et al., 2019).

The lexicon approach in Sentistrength Software assigns scores to each word as represented in the equation:

If the positive value > negative value, then it's a positive sentiment.
 If the positive value < negative value, then it's a negative sentiment.
 If the positive value = negative value, then it's a neutral sentiment.

Source: (Khaira et al., 2020)

4. Result Analysis: In this stage, after all the data has been processed using SentiStrength to obtain sentiment scores, the data is further analyzed using Microsoft Excel 2013 to interpret the results and utilize them for the intended purposes.

sentiment analysis is a research commonly used to gauge public sentiment towards a topic. This research was conducted on 112 literatures as the data source. The tool used in this research is SentiStrength v2.3 for data processing. The analysis found that opinions were categorized into three types of ratings: positive (good), neutral, and negative (bad). The results of sentiment analysis on crypto assets, divided into three categories, can be seen in Figure 2.

RESULT AND DISCUSSION

Result

This study attempts to measure the sentiment of crypto assets in scholarly publications. As known,

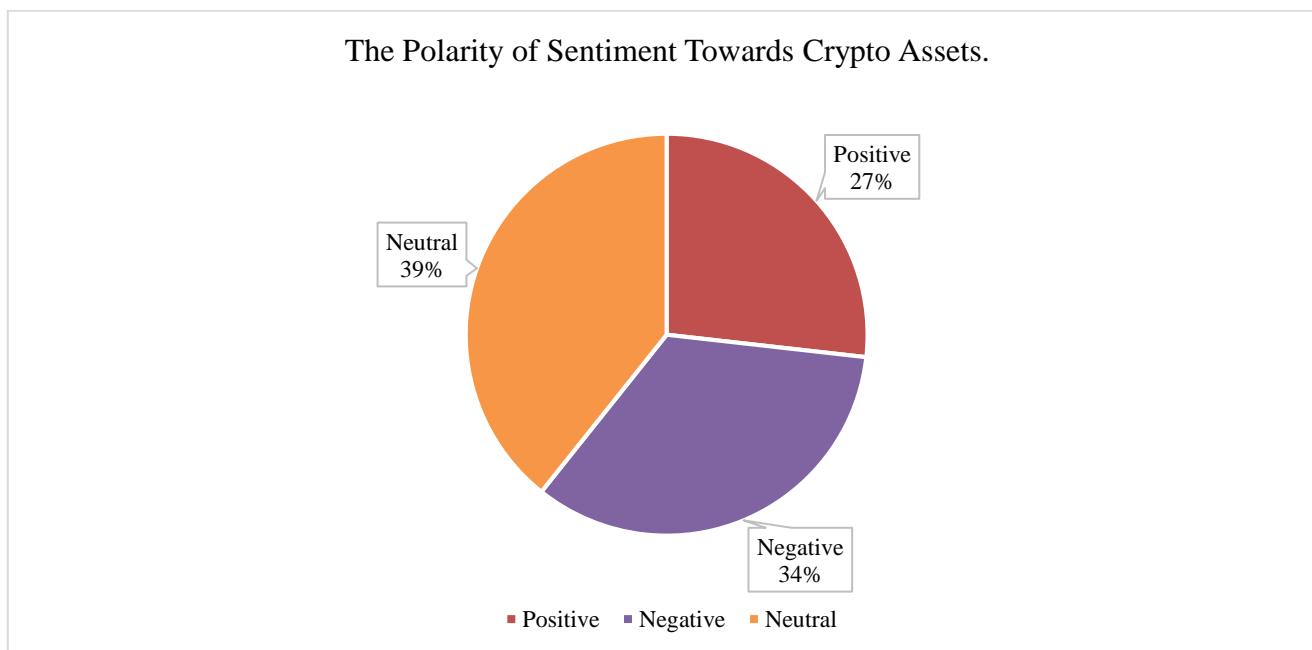


Figure 3. The Polarity of Sentiment Towards Crypto Assets

The pie chart above shows that the presence of crypto assets in scholarly publications on Islamic economics and finance, published and indexed in the Scopus database, has a positive sentiment reaching

27%, a negative sentiment of 34%, and the remaining 39% being neutral sentiment.

Positive sentiment represents a favorable perception in literature, which tends to be optimistic

about the existence of crypto assets by agreeing with opinions regarding this type of currency and supporting the development of crypto assets. On the other hand, negative sentiment represents a negative and pessimistic perception in examining the development of crypto assets; in other words, it is not approved and is contradictory to their existence as a form of digital currency or asset for various reasons.

The dominance of negative sentiment based on this research indicates that the presence of crypto assets is accompanied by more negative issues conveyed in literature. This result suggests that many people are skeptical about the innovation of digital crypto assets. Positive sentiment, although present, appears to be a minority, indicating that positive responses to crypto assets are less frequently conveyed in scholarly literature.

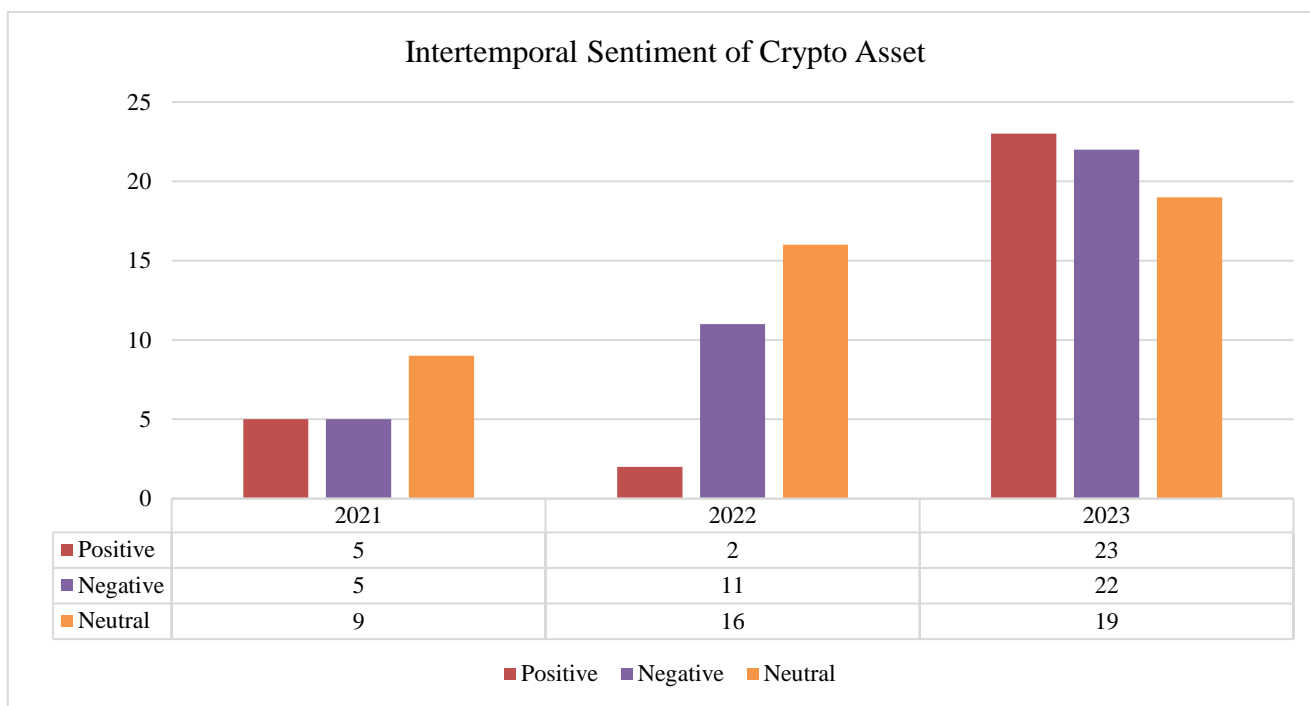


Figure 4. Intertemporal Sentiment of Crypto Asset

The trend of sentiment towards crypto assets over time shows a positive inclination from year to year. The number of sentiments continues to increase, especially in 2023, reaching its peak with a total of 64 sentiments. Out of this total, positive sentiment dominates with 23 sentiments, followed by negative sentiment with 22 sentiments, and neutral sentiment with 19 sentiments.

The significant increase in positive sentiment in 2023 can be interpreted as an indication that positive sentiment towards crypto assets in scholarly literature is growing. This increase may reflect improvements in the crypto asset system, making its existence more easily accepted by society. The increase in positive sentiment could be due to several factors, such as wider adoption, increased security, or innovations addressing some issues that may have caused negative sentiment in previous years. Therefore, these results provide an insight that there is a positive development in the perception of crypto assets, at least in documented scholarly literature.

Discussion

The research findings indicate that in the documented literature on Islamic economics and finance in the Scopus database, sentiment is predominantly characterized by a neutral stance. Neutral sentiment suggests that there is a significant portion of literature that seeks to maintain a neutral stance without leaning too heavily towards either positive or negative sentiments. This may reflect descriptive research or literature presenting facts without expressing strong judgments on the existence of crypto assets.

Although neutral sentiment predominates, there is a greater understanding and analysis that tends to highlight negative aspects (negative sentiment) of the presence of crypto assets compared to positive sentiment. For instance, the high investment risks of cryptocurrency (Brauneis & Mestel, 2019), which make investors reluctant to invest in these virtual currencies (Mazanec, 2021). Furthermore, negative sentiment

indicates that there is a significant amount of literature exploring negative, skeptical, or critical aspects of crypto assets. This includes issues such as capital flow volatility (Garcia & Tolentino, 2021), legal uncertainty and weak regulations (Huang, 2021), security concerns (Fantazzini & Calabrese, 2021; Garcia & Tolentino, 2021), and criminal usage associated with crypto assets (Garcia & Tolentino, 2021).

Furthermore, IMF (International Monetary Fund) (2023) revealed that the growth of crypto capitalization has experienced instability. Amid the decline in crypto asset valuations, the failures of various exchanges (such as FTX) and other actors in the crypto ecosystem, as well as the collapse of certain crypto assets (such as Terra USD), have heightened the need for effective policies in addressing this. According to Drakopoulos et al. (2021), many of these entities lack strong operational practices, governance, and risk management. Crypto currency exchanges, for example, faced significant disruptions during market turmoil periods. There have also been several cases of customer fund theft related to hacking. So far, these incidents have not significantly impacted financial stability. However, as crypto assets become more common, their importance in terms of potential implications for the broader economy will increase.

On the contrary, positive sentiment began to increase in 2023. Positive sentiment reflects that some literature acknowledges and supports the development of crypto assets. Literature with positive sentiment discusses the potential benefits of crypto assets, such as financial inclusivity, where many companies in America, Europe, Asia, and Australia often use digital currencies as a common means of payment (Mazanec, 2021), blockchain technology innovation (Naresh & Ananda, 2021), greater portfolio diversification (Mazanec, 2021), and the potential economic growth that can be generated by digital assets (Shin & Rice, 2022). In other words, virtual currencies are becoming a routine part of daily activities, especially during the COVID-19 pandemic and the transition to digitization.

Overall, these results indicate that understanding of crypto assets in scholarly literature is still evolving and reflects diverse perspectives. The dominance of negative sentiment underscores the importance of understanding and addressing various challenges associated with crypto assets in order to harness their potential more positively.

CONCLUSION

Crypto currencies rapidly reshape the landscape of industries and societies, leading to decentralization in interactions among consumers, companies, and policymakers. With the shift towards the digital era, numerous literature studies have emerged to understand crypto trends and their impacts. This research aims to analyze theoretical knowledge and identify the development of public sentiment towards crypto assets. The research findings indicate that positive sentiment reaches 27%, negative sentiment accounts for 34%, and the remaining 39% is neutral sentiment. The year 2023 stands out with the highest number of sentiments dominated by 23 positive sentiments. These findings reflect the dynamics of changing public perceptions towards crypto assets and provide insights into how general views evolve over time. Sentiment analysis can offer deep insights into how cryptocurrencies are perceived by the public and how these perceptions evolve in line with changes in social and economic contexts.

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