Athens Journal of Social Sciences- Volume 13, Issue 3, July 2026 – Pages 181-198

Bibliometric Analysis of Research on Cryptocurrency and Volatility

By Ali Köse[*] & Mustafa Okur[±]

In the context of developments in the field of financial technology, cryptocurrencies, emerging as a new asset class, have garnered significant attention in financial markets in recent years, attracting investors, researchers, and regulators, and leading to numerous publications. Bibliometric studies evaluate these publications based on criteria such as the number of publications, their quality, the countries of publication, authors, and journals. This study aims to perform a bibliometric analysis of the academic literature available in the Web of Science (WoS) database, focusing on the volatility of cryptocurrency prices. It analyzes the magnitude and development of academic interest in this field, along with key words, the most cited works, and research trends, in an effort to determine the density of studies, their impact areas, and the academic networks that have emerged in this field. Based on the general findings, it is observed that the number of studies has been on an increasing trend over the years, and that the publications are predominantly in the field of Business Economics. Moreover, it has been found that publications are mainly in finance journals. In terms of network maps, the findings suggest a moderate level of collaboration among authors, with the United Kingdom and the People's Republic of China occupying central positions in international collaboration. In terms of citations, authors such as Lucey, and Katsiampa, Paraskevi, have emerged as prominent figures in the fields of cryptocurrencies and volatility. Regarding key words, terms like 'cryptocurrency', 'cryptocurrencies', 'volatility', and 'bitcoin' are predominantly used in these studies."

Keywords: *cryptocurrencies, bitcoin, volatility, bibliometric analysis*

Introduction

In the realm of financial technology, cryptocurrencies have emerged as a novel asset class that has attracted considerable attention from investors, researchers, and regulators in recent years. The rise of Bitcoin, Ethereum, and other digital currencies has not only underscored the volatility inherent in this market but has also intensified debates regarding the economic, financial, and social implications of cryptocurrencies.

Initially conceptualized as decentralized payment systems, cryptocurrencies have progressively evolved into globally traded financial instruments with increasing market capitalization and liquidity. This transformation has elevated cryptocurrencies from a technological innovation to an integral component of modern financial markets, thereby strengthening the need for academic research.

[*]Professor, Marmara University, Faculty of Financial Sciences, Department of Actuarial Sciences, Istanbul, Türkiye.
[±]Professor, Ph.D., Marmara University, Faculty of Financial Sciences, Department of Capital Markets, Istanbul, Türkiye.

https://doi.org/10.30958/ajss.13-3-2 doi=10.30958/ajss.13-3-2

The volatility of cryptocurrencies differs from that of traditional financial assets such as equities, bonds, and commodities. While conventional asset prices are primarily influenced by macroeconomic fundamentals, monetary policy, and firm-specific information, cryptocurrency prices are shaped by a broader and more heterogeneous set of factors. Technological developments, regulatory announcements, cybersecurity incidents, market sentiment, and global uncertainty play a particularly prominent role in driving price fluctuations in cryptocurrency markets. As a result, cryptocurrency volatility is often characterized by sudden and extreme price movements that are difficult to predict using standard financial models.

Cryptocurrencies also possess intrinsic characteristics that distinguish them fundamentally from traditional asset classes. Their decentralized architecture, reliance on blockchain technology, and predetermined or algorithmically constrained supply mechanisms introduce unique market dynamics. Although these features enhance transparency and reduce dependence on centralized authorities, they also limit the applicability of conventional valuation frameworks. The absence of cash flows, dividends, or widely accepted intrinsic valuation benchmarks contributes to increased uncertainty and amplifies price volatility. Consequently, cryptocurrencies challenge established financial theories and motivate the development of new analytical perspectives.

Given the rapid expansion and growing relevance of cryptocurrency markets, academic interest in cryptocurrency volatility has increased substantially over the past decade(Alqudah et al., 2023). Studies addressing this topic span multiple disciplines, including finance, economics, computer science, and interdisciplinary research fields. However, the accelerating volume of publications has made it increasingly difficult to obtain a comprehensive overview of how this body of research has evolved, which themes dominate the literature, and which studies or authors have exerted the greatest influence. This fragmentation highlights the need for systematic approaches capable of synthesizing large-scale academic output.

Bibliometric analysis provides a quantitative and objective methodology for examining the structure and evolution of scientific research. By analyzing publication metadata such as citation counts, keywords, authorship patterns, and collaboration networks, bibliometric methods enable researchers to identify influential works, emerging research trends, and intellectual linkages within a given field. In recent years, bibliometric techniques have been increasingly applied in finance and economics to evaluate the development of rapidly growing research areas and to map their underlying knowledge structures.

Cryptocurrencies and the underlying blockchain technology—by providing transparency, high transaction speed, and the potential to reduce intermediary costs—have emerged as a strategic innovation domain increasingly interacting with traditional financial infrastructures. Within the conventional financial system, crypto-assets exert notable effects on financial stability, regulatory frameworks, and investor behavior. Owing to their relatively high volatility compared to traditional financial instruments, crypto-assets constitute a central research focus in the finance literature, particularly in relation to risk management and market dynamics. Understanding how price fluctuations interact with macroeconomic conditions, market liquidity, investor sentiment, and market structure is therefore essential. Accordingly, this study aims to systematically review the literature on the volatility structure of crypto-assets and to

provide a structured reference for future research, especially in light of ongoing regulatory developments, growing institutional participation, and the gradual maturation of crypto-asset markets.

Within this context, the present study conducts a comprehensive bibliometric analysis of academic literature on cryptocurrency price volatility indexed in the Web of Science (WoS) database. The study aims to assess the magnitude and evolution of scholarly interest in this topic by examining publication trends, highly cited studies, frequently used keywords, and leading journals and authors. Furthermore, it seeks to identify dominant research clusters and emerging themes that characterize the cryptocurrency volatility literature.

Beyond providing a descriptive mapping of existing studies, this research contributes to the literature by offering an integrative perspective on the intellectual structure of cryptocurrency volatility research. By revealing thematic concentrations, research gaps, and evolving academic networks, the study supports future empirical and theoretical research efforts. Moreover, the findings are expected to enhance understanding of how cryptocurrencies are positioned within financial markets and how this emerging asset class interacts with traditional financial systems.

Despite the growing body of research on cryptocurrency volatility, the existing literature remains highly fragmented and methodologically diverse. Studies differ substantially in terms of data frequency, volatility measures, econometric techniques, and the specific cryptocurrencies examined. As a result, drawing generalized conclusions from individual empirical findings has become increasingly challenging. In this context, a systematic assessment of the academic literature is essential to identify dominant research streams, influential contributions, and underexplored areas.

Financial Markets and Volatility in Cryptocurrencies

Financial markets are inherently variable and volatile in nature. However volatility creates uncertainty about future prices (Borawski et al., 2015). This volatility represents both risk and opportunity for market participants. It indicates the extent to which asset prices can fluctuate over time, playing a significant role in investors' portfolio selections and diversifications. Diversification of portfolios is central to strategies aimed at reducing risk and optimizing returns. In portfolio diversification, combining different asset classes is intended to balance the total portfolio risk, leveraging the unique risk and return profiles of each asset class.

Cryptocurrencies like Bitcoin and Ethereum possess characteristics that differ from traditional financial assets. Key differences include:

- ***Decentralization***: Traditional financial assets (such as stocks, bonds, bank deposits) are usually managed by a central authority or institution (e.g., banks, stock exchanges). Cryptocurrencies, on the other hand, operate on blockchain technology without a central authority, fostering a more democratic and transparent system. However, this can also lead to regulatory and legal uncertainties (Nakamoto, 2008, Catalini & Gans 2016, Medellin, 2022).

- ***Volatility***: Cryptocurrencies are generally more volatile than traditional assets, offering high return potential while also implying high risk. Traditional markets usually have more stable asset prices with less severe price fluctuations (Baur & Dimpfl, 2021; Soylu et al., 2020).
- ***Asset Structure as Digital Assets***: Cryptocurrencies are entirely digital with no physical representation. Traditional financial assets are typically backed by physical assets (e.g., real estate) or tangible entities like governments and companies (Yermack, 2013).
- ***Utility and Functionality***: Some cryptocurrencies offer additional functionalities beyond being a store of value or speculative investment, such as smart contracts and decentralized applications (dApps). Traditional financial assets generally lack such technological integrations (Yadav et al., 2022).
- ***Regulation and Security***: Traditional financial markets have established regulations and security measures derived from years of experience and development. Crypto markets, being relatively new and evolving, are still developing their regulatory frameworks and can face security issues (Middlebrook & Hughes, 2014).
- ***Accessibility and Participation***: Cryptocurrency markets are easily accessible to almost anyone with internet access. Investing in traditional financial assets can be subject to more regulations and may require higher capital in some cases (Catalini & Gans, 2016).

Due to these characteristics, it is generally accepted that crypto assets behave differently from traditional assets, particularly in terms of volatility levels. This naturally positions cryptocurrencies as high-risk yet potentially high-return investments. (Sauer, 2015) Despite their high levels of volatility and their bubbly character cryptocurrencies have gained popularity among risk-seeking investors (Dimitriadis et al. 2024). Including crypto assets in optimal portfolio diversification introduces a new dimension to the management of total portfolio risk and return. Modern portfolio theory suggests that diversification can reduce risk. However, the high volatility and low correlation of crypto assets with traditional financial assets create new challenges and opportunities for portfolio managers and individual investors. This result makes cryptocurrencies an attractive option for portfolio diversification, but also necessitates extra caution and more delicate risk management from investors (Ali et al., 2024).

Technological innovations, regulatory developments, and market sentiment can lead to rapid and significant changes, hence volatility, in cryptocurrency prices. This complicates the role of crypto assets in portfolio diversification. For investors, the approach to crypto assets necessitates understanding how to cope with this volatility and integrate this new asset class.

Recently, comprehending the levels and characteristics of volatility in crypto assets has become a crucial part of modern investment strategies and portfolio management. Crypto assets offer unique opportunities and challenges in terms of portfolio diversification and risk management. The role of this new asset class in the future of financial markets continues to be a compelling area of research for both investors and academics. Accordingly, the following section reviews the relevant

literature on cryptocurrency volatility, providing the conceptual foundation upon which the subsequent bibliometric analysis is built.

Literature Review

Cryptocurrency markets continue to evolve as an area characterized by high volatility, rapid changes, and dynamics different from other markets. Key publications in the literature related to crypto assets are summarized in the following section.

The 2019 study by Katsiampa et al. utilized Diagonal BEKK and Asymmetric Diagonal BEKK methodologies to examine the conditional volatility dynamics and co-movements of eight cryptocurrencies. The study revealed that investors respond differently to specific cryptocurrencies such as Neo and Dash, with Bitcoin exhibiting the highest level of response to shocks. The study also aimed to assess the strong dependencies among cryptocurrencies and the asymmetric effects of news on the markets.

In their 2019 work, Bouri et al. investigated the relationship between trading volume, returns, and volatility. Utilizing a copula-quantile causality approach, the study analyzed the impact of trading volume on cryptocurrency returns and volatility. The findings indicated that trading volume has a significant effect, especially on extreme negative and positive returns.

Corbet et al.'s 2019 article researched cryptocurrencies as financial assets. The study provided a systematic review of topics such as price increases, regulatory oversight, anonymity, infrastructure issues, and cybercrimes associated with cryptocurrencies. It also aimed to present factors influencing the perception of cryptocurrencies as investment tools.

In their 2020 study, Bouri et al. examined the presence of unexpected movements in the volatilities of cryptocurrencies. Employing the frequency domain test by Bodart and Candelon (2009), the study analyzed causalities related to persistent and transitory shocks among leading cryptocurrencies. The findings suggested that short-term persistent shocks are more effective in explaining causality and that these shocks do not always originate from Bitcoin, while transitory shocks in the long term are more effective in explaining the causality of altcoins.

Another 2020 study by Bouri et al. investigated the volatility relationship between certain cryptocurrencies and stocks as a hedge. The study examined the hedging capabilities and time-varying diversification abilities of Bitcoin, Ethereum, and Litecoin against stocks. The results indicated that cryptocurrencies, especially against Asia-Pacific and Japanese stocks, provide effective protection.

Katsiampa's 2020 research explored the co-movement of volatility between Bitcoin and Ether. The paper analyzed the factors affecting the volatility between Bitcoin and Ether and their responses to news using the Diagonal BEKK model. The findings revealed a high level of volatility linkage between these two significant cryptocurrencies.

In their 2022 study, Elsayed et al. examined the volatility and return relationship between cryptocurrencies and gold. The study used new uncertainty measures, including cryptocurrency policy uncertainty and cryptocurrency price uncertainty

indices, to explore the dynamic linkages between cryptocurrencies, gold, and uncertainty measures. The results suggested that cryptocurrency policy uncertainty is one of the primary reasons for decreasing returns compared to other variables.

The 2021 study by Hasan et al. investigated the high instantaneous connectedness among three major cryptocurrencies using 5-minute data. The research identified a moderate level of realized volatility connectedness, with Bitcoin and Litecoin emerging more as spillover receivers compared to Ripple and Binance Coin. Additionally, the study concluded that there is a time-varying and increasing high instantaneous connectedness in the cryptocurrency market.

Methodology

Bibliometrics is generally described as the measurement of texts and information. Initially, bibliometric methods were applied to track citations in academic journals. However, in recent years, bibliometric analysis has also been used to predict the future in addition to understanding the past. Bibliometrics facilitates the discovery, organization, and analysis of large-scale historical data, thereby unveiling patterns in a subject area that may not have been previously noticed (Güleç, 2023). Bibliometric techniques allow for a systematic, quantitative assessment of research trends, key authors, and influential articles within a specific field (Fantini et al., 2025).

An analysis of the literature performed in this way may help to map and evaluate it, to identify potential research gaps and to highlight the boundaries of knowledge (Olczyk, 2016). Besides, bibliometric research not only allows for the analysis of publications using various methods but also enables the evaluation of scientific works. It also assists in shaping future science policies by assessing the adequacy of publications in their respective fields based on criteria such as the number of publications, the quality of publications, and the choice of indices to which the journals are affiliated (Köse et al., 2017).

Bibliometric analysis provides the ability to elucidate key features such as citations, authors, co-authors, periodicals, and keywords. The stages of bibliometric analysis are addressed in five phases, as seen in Table 1 (Tekin, 2019).

Table 1. *Stages of Bibliometric Analysis*

Determining the purpose of the analysis and selecting the scientific basis of the analysis	(a) Define the scientific and theoretical domains of the study (b) Outline the objectives of the work (c) Select the scientific basis for conducting the article research
Research process	(a) Define search terms (b) Identify engines for advanced search (c) Define search filters
Collection and structuring of data	(a) Identification of reference manager software (b) Identification of bibliometric analysis software (c) Downloading references in reference manager format, bibliometric analysis format, and electronic spreadsheet format (d) Transferring files to the reference manager and bibliometric analysis software

Contextual analysis of scientific outputs related to the sample	(a) Analysis of the temporal volume of selected publications (b) Analysis of citations of selected articles (c) Analysis of journals publishing the selected articles (d) Analysis of the countries of origin of the selected articles (e) Analysis of keywords of the selected articles
Analysis of citation networks based on the sample	(a) Analysis of citations and co-citations of the sample (b) Analysis of the most frequently cited authors (c) Analysis of the main journals"

Bibliometric Analysis Findings of Studies on Cryptocurrency and Volatility in the Web of Scıence (Wos)

Purpose of the Study and Data Set

The aim of this research is to conduct a bibliometric analysis of publications that jointly address cryptocurrencies and volatility. For this purpose, the study utilizes bibliometric analysis methods, including performance analysis and visual mapping. This method of research used a science mapping technique to perform a thorough analysis and visual depiction of a large collection of scientific materials, with a particular focus on the topic of cryptocurrency (Alqudah et al., 2023).

In the implementation of the study, data was sourced from the Web of Science (WoS), a global database. As emphasized in many other bibliometric studies, the selection of keywords is one of the most critical criteria for effective results in bibliometric analyses. Accordingly, the terms 'cryptocurrency/cryptocurrencies' and 'volatility' have been selected as the key words for this study.

Considering the first relevant study in the WoS database was published in 2015, the data set for this study was determined to include publications from the period of 2015-2023. The data set encompasses information obtained from the Web of Science (WoS) database as of the date September 23,2023. Therefore, the data for the year 2023 includes information available in WoS as of September 23,2023.

General performance findings of the data set cover information from the WoS database while network analysis results were obtained using WoS viewer software.

General Performance Findings related to the Data Set

An evaluation of the general information on studies conducted on cryptocurrencies and volatility in the WoS database reveals that, during the study period (2015-2023), there were a total of 331 studies, with publications from 835 researchers on the subject. The average citations per study were approximately 13.76. The data set encompasses information obtained from the Web of Science (WoS) database as of the date September 23, 2023. (Table 2)

Table 2. *General Information on Studies Related to Cryptocurrencies and Volatility in the Web of Science (WoS) Database*

Data Set Period	2015-2023*
Number of Publications (Articles)	331
Number of Authors	835
Average Citations per Publication	13.76

**The data set of the study includes information obtained from the Web of Science (WoS) database as of September 23,2023.*

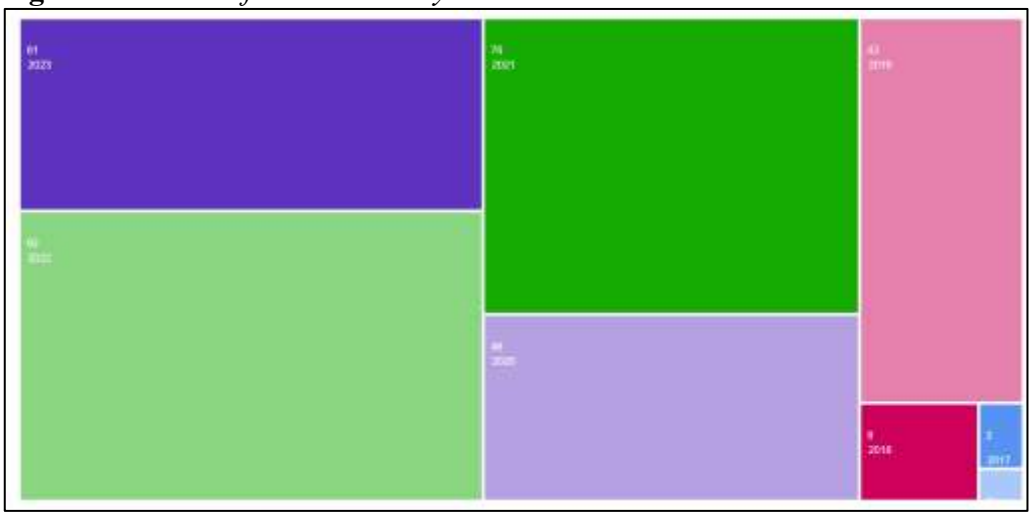
Number of Publications by Year

According to the WoS database, when examining studies on cryptocurrencies and volatility by year and country, it is observed that the first study was published in 2015. Until 2019, there were only a few publications in the database. However, a significant increase was noted in 2019 with 43 publications. The number of publications continued to rise in subsequent years, reaching 48 in 2020, 76 in 2021, and peaking at 92 publications in 2022. In 2023, up to the period covered by the data set, 61 studies were published. See Table 3, Figure 1.

Table 3. *Number of Publicaitons by Year*

Years	**Number of Publicaitons**
2015	1
2017	2
2018	8
2019	43
2020	48
2021	76
2022	92
2023	61

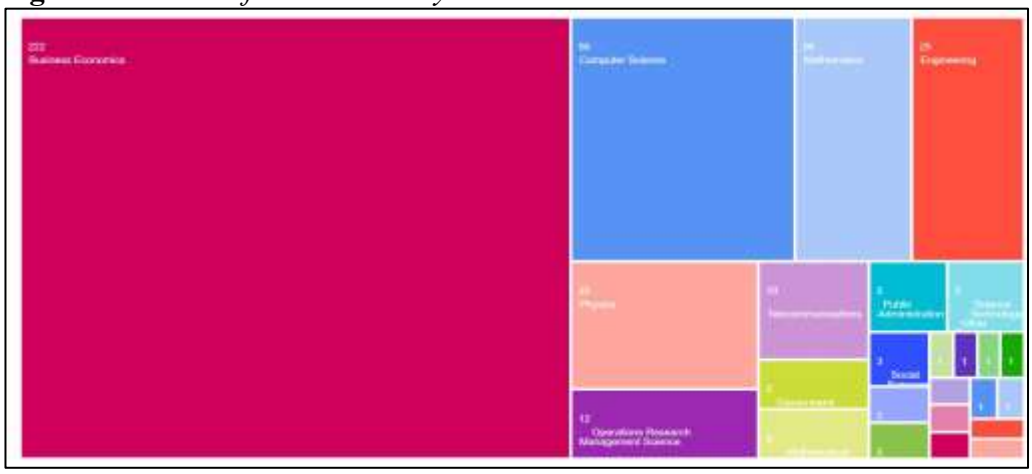
Figure 1. *Number of Publicaitons by Year*



Number of Publications by Research Area

According to the WoS database, studies on cryptocurrencies and volatility across various research areas indicate that Business Economics is at the forefront with 222 publications. It is followed by Computer Science with 50 publications, and then Mathematics and Engineering, which have 26 and 25 publications respectively. Further in the list, significant contributions are observed in Physics, Operations Research & Management Science, Telecommunications, and Government & Law. Additionally, publications in various other disciplines, though in smaller numbers, are also present. See Figure 2.

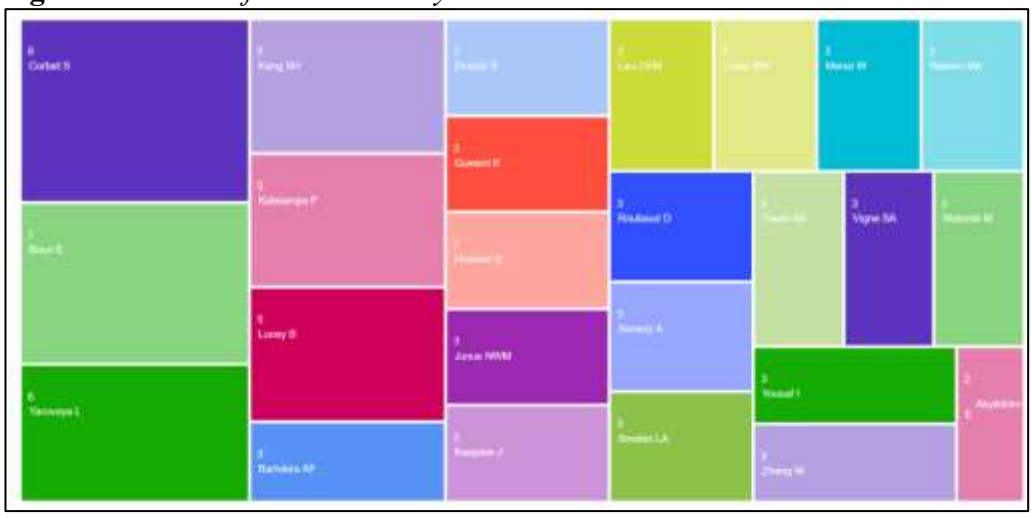
Figure 2. *Number of Publications by Research Area*



Number of Publications by Author

Data from WoS show that, an examination of studies related to cryptocurrencies and volatility from the perspective of authors reveals that Corbet S. stands out with eight publications. Following Corbet S., the authors Bouri E., Yarovaya L., Kang S.H., Katsiampa P., Lucey B. M. et al., have been identified as prominent contributors in this field. See Figure 3

Figure 3. *Number of Publications by Author*



Publication Numbers by Journal Name

In the Web of Science (WoS) database, an analysis of studies on cryptocurrencies and volatility based on journal names reveals that Finance Research Letters leads with 26 publications. This is followed by the Journal of Risk and Financial Management, which has published 15 studies. Subsequent journals include the International Review of Financial Analysis with 12 publications, Research in International Business and Finance with 10, and both IEEE Access and Physica A: Statistical Mechanics and Its Applications with 8 publications each. Other journals also contribute to this body of work. Refer to Figure 4 for further details.

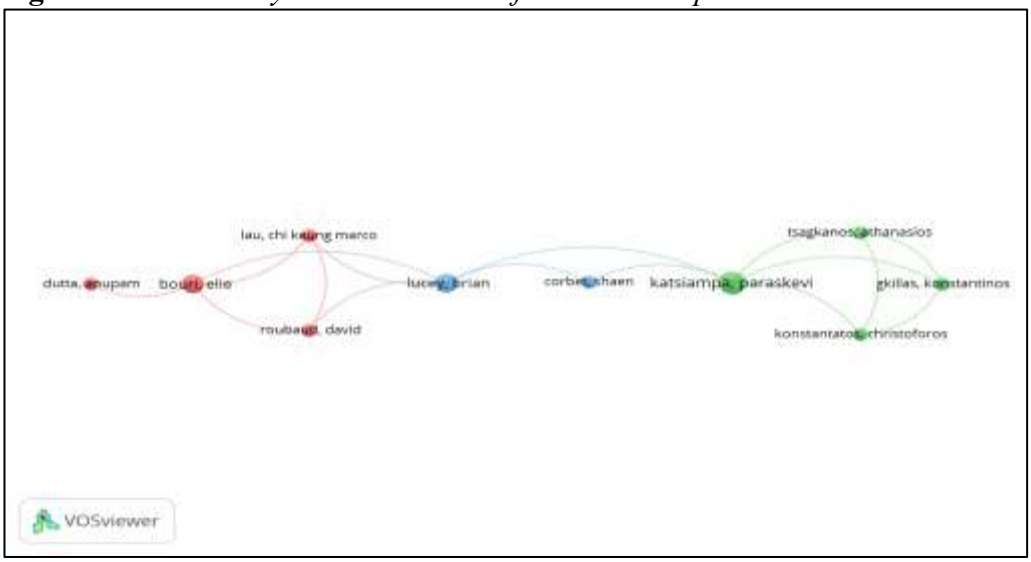
Figure 4. *Publication Numbers by Journal Name*

Findings Related to Network Maps

Author Analysis in the Context of Co-Authorship

Data from WoS show that, while creating an author network map based on co-authors of publications, the analysis included authors with a minimum of one publication and a minimum of zero citations. According to the results obtained, a moderate level of collaboration among authors was observed. Based on these results, several prominent figures emerge in the fields of cryptocurrencies and volatility. Lucey stands out with 2 publications, 241 citations, and a connection strength of 5. He is followed by Katsiampa, Paraskevi, who has 3 publications, 238 citations, and a connection strength of 5. Additionally, Bouri, Elie makes a significant contribution with 2 publications, 129 citations, and a connection strength of 4. (See Figure 5)

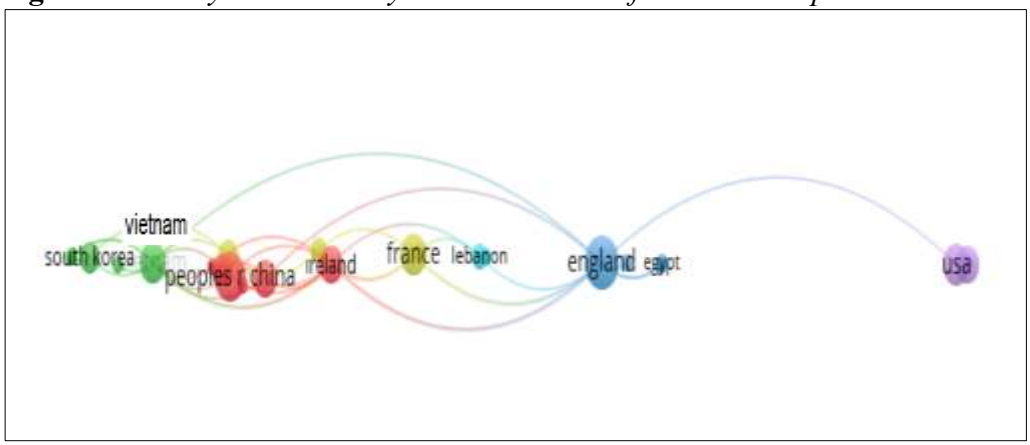
Figure 5. *Author Analysis in the Context of Co-Authorship*



Country-Related Analysis in the Context of Co-Authorship

In the Web of Science (WoS) database, while constructing a network map of countries based on co-authors of publications, the analysis included countries with a minimum of one publication and a minimum of zero citations. According to the results obtained, a strong co-authorship connection was found between the United Kingdom, the People's Republic of China, France, the United States, and Ireland. The United Kingdom and the People's Republic of China appear to hold central positions in terms of collaboration among countries. The most prolific countries in terms of publication output were identified as the United Kingdom with 8 publications, followed by the People's Republic of China with 7, France and Vietnam with 5, and Ireland and Australia with 4. In terms of citation numbers, the United Kingdom, Ireland, France, Vietnam, and Australia were distinguished as leading contributors. (See Figure 6)

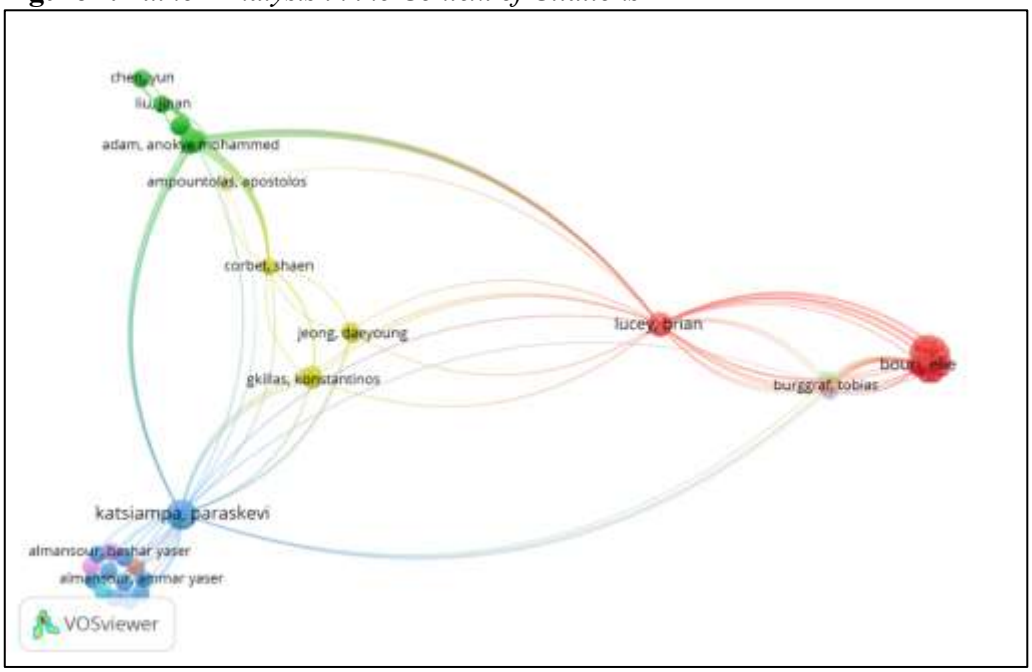
Figure 6. *Country-Related Analysis in the Context of Co-Authorship*



Author Analysis in the Context of Citations

In the Web of Science (WoS) database, while constructing an author network map based on citations, the analysis included authors with a minimum of one publication and at least one citation. According to the results, the most cited authors, thereby the most influential and highly visible in the fields of cryptocurrencies and volatility, are Lucey B. M., with 241 citations, Katsiampa, Paraskevi with 238 citations, Bouri, Elie with 129 citations, and Corbet, Shaen with 121 citations. These authors are prominently positioned in the top four ranks. Additionally, the network map reveals five distinct clusters, particularly around Adam, A. Mohammed. In terms of publication numbers, Katsiampa, Paraskevi leads with 3 publications, followed by Lucey, B. M., Bouri, E., and Yarovaya, L., each with 2 publications. (See Figure 7)

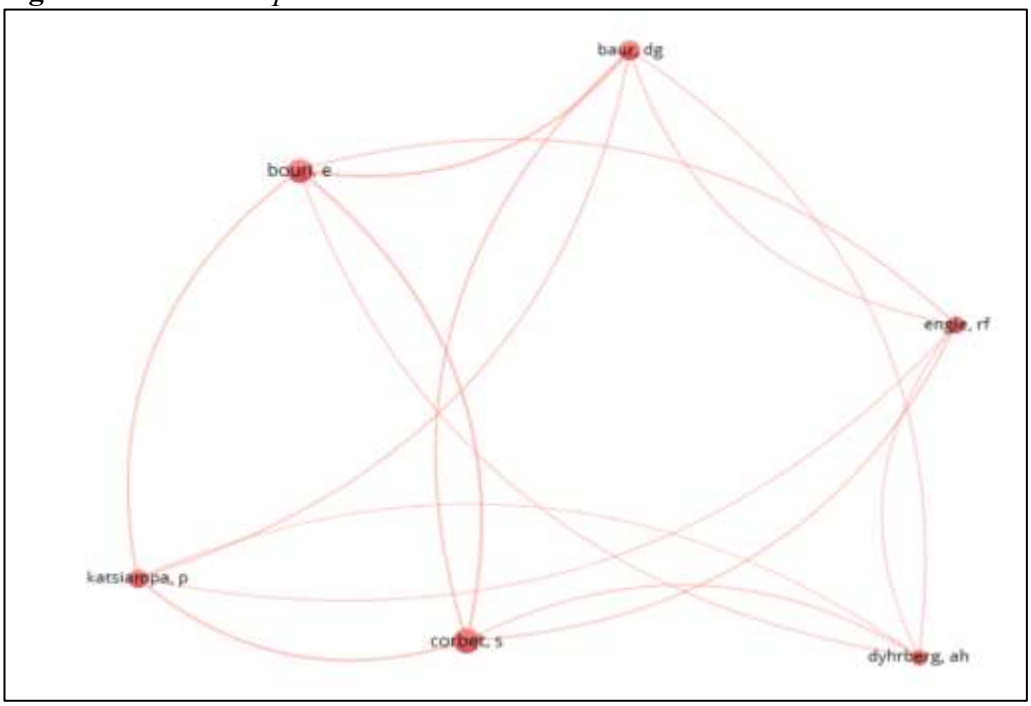
Figure 7. *Author Analysis in the Context of Citations*



Co-citation Analysis

Author-level co-citation analysis allows for the comparison of content similarities between authors by examining how frequently they are cited together in the literature. This approach provides insights into the strength and occurance of intellectual relationships among authors and helps reveal the underlying intellectual structure of the research field (Ulukök, 2022). As a result of the co-citation analysis, a total of 1,161 cited authors were identified in the dataset. To reduce visual complexity and enhance the clarity of the network map, a citation threshold of 20 was applied. This threshold selection resulted in a more simplified and interpretable visualization, with six authors meeting the specified criterion. The findings indicate that, based on co-citation frequencies, the most frequently cited authors in the literature are Corbet, Bouri, Baur, Katsiampa, Engle, and Dyhrberg. (See Figure 8)

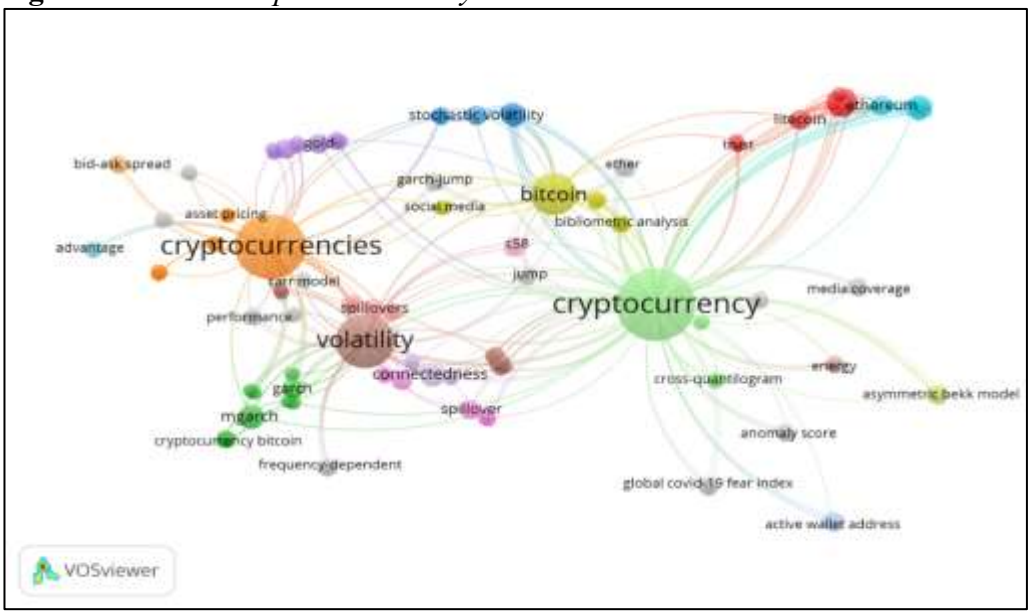
Figure 8. *Network Map Related to Co-citation*



Co-occurrence Analysis of Keywords

A total of 172 keyword were identified in the 331 articles examined in the study. In constricting a network map of co-occurence analysis of keywords for publications in the WoS database, keywords were included in the analysis based on a minimum usage count of one. The results show that studies predominantly revolve around four keywords: cryptocurrency (26 occurrences), cryptocurrencies (21 occurrences), volatility (15 occurrences), and bitcoin (9 occurrences). (See Figure 9)

Figure 9. *Network Map Related to Keywords*



Conclusıon

In line with developments in money markets, the past 10-15 years have seen rapid growth in literature on crypto assets, featuring numerous empirical publications. The issue of volatility, indicating fluctuations in cryptocurrency values, holds distinct importance in money markets. Hence, the recent increase in bibliometric research explaining the current state of crypto assets and illustrating the development of literature is significant. This study encompasses a bibliometric analysis of studies on cryptocurrencies and volatility in the Web of Science (WoS) database, attempting to highlight the dynamic nature of cryptocurrency markets and the diversity of academic work in this field.

From their inception, cryptocurrencies have garnered global interest, prompting researchers to deeply examine this new asset class's role and impact in financial markets. Studies show that crypto markets, characterized by high volatility and rapid changes, are influenced by various factors including technological innovations, regulatory developments, and market sensitivity.

A review of the publications in the WoS database over the years shows an increasing trend, with the highest number of publications, 92, occurring in 2022.

When examining publications in the fields of cryptocurrencies and volatility, it is observed that most publications are in Business Economics, followed by Computer Science, Mathematics and Engineering, Physics, Operations Research Management Science, Telecommunications, Government, etc. Authors such as Katsiampa P., Lucey B. M., Corbet S., Bouri E., Yaravoya L., Kang S.H. have been identified as influential in the areas of cryptocurrencies and volatility.

Journals such as Finance Research Letters, Journal of Risk and Financial Management, International Review of Financial Analysis, and Research in International Business and Finance are prominent in the field of cryptocurrencies and volatility. Given their role in financial markets, these results are as expected.

According to the findings related to network maps, a moderate level of collaboration among authors is observed, with high co-authorship connections found between the United Kingdom, the People's Republic of China, France, the United States, and Ireland Abdeljawad et al. (2025), in their bibliometric analysis of cryptocurrency research, conclude that a substantial proportion of Bitcoin-focused publications have been produced by authors affiliated with Chinese institutions. Consistent with these findings, the results of the present study indicate that the United Kingdom and the People’s Republic of China occupy central positions in international collaboration networks among countries.

In terms of citation counts, the most influential and visible authors in the literature on cryptocurrencies and volatility are Lucey, B. M., with 241 citations, Katsiampa, Paraskevi, with 238 citations, Bouri, Elie, with 129 citations, and Corbet, Shaen. Furthermore, the author-level co-citation analysis indicates that the most frequently co-cited authors are Corbet, Bouri, Baur, Katsiampa, Engle, and Dyhrberg, highlighting their central role in shaping the intellectual structure of the literature.

Chen et al. (2025), in their bibliometric analysis of cryptocurrency research, identify key recurring keywords such as safe haven, market efficiency, blockchain, Bitcoin price, machine learning, realized volatility, and portfolio optimization. In line

with these findings, the present study reveals that the most frequently used keywords in the analyzed publications are cryptocurrency, cryptocurrencies, volatility, and Bitcoin.

It also gives us an understanding of how cryptocurrency research emerged as a domain across various dimensions (Mohapatra et al., 2025). Understanding the position of cryptocurrencies in financial markets and their interaction with traditional financial systems is crucial both academically and practically. This work identifies academic networks and areas of impact in this field and provides a valuable resource for future research. Given the multidisciplinary nature of cryptocurrency markets, encompassing finance, economics, computer science, and law, it is deemed important to undertake new bibliometric studies with multidisciplinary approaches to understand the implications across different disciplines.

Despite its contributions, this study is subject to several limitations that should be acknowledged. First, the analysis is based exclusively on sources indexed in the Web of Science database, which, while ensuring a certain level of academic rigor, may limit the coverage of relevant studies published in other scientific databases such as Scopus and etc. Future research could extend the scope of the analysis by incorporating additional databases, thereby providing a more comprehensive perspective on the evolving literature. Second, this study focuses on a specific time period (up to 2023), which may constrain its ability to fully capture recent developments in the rapidly changing crypto-asset ecosystem. Given the dynamic nature of crypto-asset markets—characterized by high volatility, ongoing regulatory adjustments, increasing institutional participation, and continuous technological innovation—repeating and updating this analysis over time would allow for the inclusion of emerging findings and evolving viewpoints. Such efforts would contribute to a deeper understanding of how crypto-assets may gradually transition toward more integrated and permanent roles within the traditional financial system as alternative investment instruments and components of next-generation financial products.

References

Abdeljawad I, Tina A, Hassan MK, Rashid M (2025) Cryptocurrency Market Efficiency Revisited: A Bibliometric Analysis. *International Journal of Financial Engineering*, 2550021.

Akyildirim E, Corbet S, Katsiampa P, Kellard N, Sensoy A (2020) The development of bitcoin futures: Exploring the interactions between cryptocurrency derivatives. *Finance Research Letters*, 34, 101234.

Ali S, Naveed M, Yousaf I, Khattak MS (2024) From cryptos to consciousness: Dynamics of return and volatility spillover between green cryptocurrencies and G7 markets. *Finance Research Letters*, 60, 104899.

Alqudah M, Ferruz L, Martín E, Qudah H, Hamdan F (2023) The sustainability of investing in cryptocurrencies: A bibliometric analysis of research trends. *International Journal of Financial Studies*, 11(3), 93.

Baur Dirk G, Lucey BM (2010) Is Gold a Hedge or a Safe Haven? An Analysis of Stocks, Bonds and Gold. *Financial Review* 45(2), 217-229.

Baur DG, Dimpfl T (2021) The volatility of Bitcoin and its role as a medium of exchange and a store of value. *Empirical economics*, 61(5), 2663-2683.

Borawski P, Gotkiewicz W, Dunn JW, Alter T (2015) The impact of price volatility of agricultural commodities in Poland on alternative incomes of conventional, ecological and agritourism farms. *Athens Journal of Business and Economics*, 1(4), 299-310.

Bouri E, Lau CKM, Lucey BM, Roubaud D (2019) Trading volume and the predictability of return and volatility in the cryptocurrency market. *Finance Research Letters*, 29, 340-346.

Bouri E, Lucey BM, Roubaud D (2020) The volatility surprise of leading cryptocurrencies: Transitory and permanent linkages. *Finance Research Letters*, 33, 101188.

Bouri E, Gabauer D, Gupta R, Tiwari AK (2021) Volatility connectedness of major cryptocurrencies: The role of investor happiness. Journal of Behavioral and Experimental Finance, 30, 100463.

Catalini C, Gans JS (2016) *Some Simple Economics of the Blockchain*. National Bureau of Economic Research, Working Paper No. 22952, 2016.

Chen M, Wei Y, Wang S (2025) Past and Future of Cryptocurrencies: A Survey Using Bibliometric Methods. *Journal of Economic Surveys*. 1-25. Doi: https://doi.org/10.1111 /joes.12700.

Corbet S, Lucey B, Urquhart A, Yarovaya L (2019) Cryptocurrencies as a financial asset: A systematic analysis. *International Review of Financial Analysis*, 62, 182-199.

Corbet S, Katsiampa P, Lau CKM (2020) Measuring quantile dependence and testing directional predictability between Bitcoin, altcoins and traditional financial assets. *International Review of Financial Analysis*, 71, 101571.

Dimitriadis KA, Koursaros D, Savva CS (2024) Evaluating the sophisticated digital assets and cryptocurrencies capacities of substituting international currencies in inflationary eras. *International Review of Financial Analysis*, 96, 103693.

Elsayed AH, Gozgor G, Yarovaya L (2022) Volatility and return connectedness of cryptocurrency, gold, and uncertainty: Evidence from the cryptocurrency uncertainty indices. *Finance Research Letters*, 47, 102732.

Fantini G, Jia J, Oldani C (2025) Informational Efficiency in Cryptocurrency Markets: A Bibliometric and Thematic Literature Review (2015–2024). *Journal of Economic Surveys,* 1-26. Doi: https://doi.org/10.1111/joes.70015.

Güleç UT (2023) Duyusal Markalama Yaklaşımının Bibliyometrik Analiz İle İncelenmesi., *International Review of Economics and Management,* 11(1), 35-56. Doi: http://dx.doi. org/10.18825/iremjournal.1272720.

Hasan M, Naeem MA, Arif M, Yarovaya L (2021) Higher moment connectedness in cryptocurrency market. *Journal of Behavioral and Experimental Finance*, 32, 100562.

Katsiampa P, Corbet S, Lucey BM (2019) Volatility spillover effects in leading cryptocurrencies: A BEKK-MGARCH analysis. *Finance Research Letters,* 29, 68-74.

Köse A, Ergün BS, ve Tezergil AS (2017) *Türkiye'de Aktüerya Bilimleri Konusunda Yapilan Lisansüstü Tezlerin Değerlendirilmesi, VIII*. International Graduate Education Symposium Proceedings Book, 25-33.

Medellin JM (2022) Generation, Regeneration and Validation of Binary Secret Keys through Blockchain in IoT Devices. *Athens Journal of Sciences*, 9(1), 25-46.

Middlebrook ST, Hughes SJ (2014) Regulating cryptocurrencies in the United States: Current issues and future directions. *William Mitchell Law Review*, 40(2), 11. 814-845.

Mohapatra MR, Mohapatra S, Vishwakarma P (2025) *Current State and Future Directions of Cryptocurrency Research: A Bibliometric Review*. Accounting, Economics, and Law: A Convivium. Doi: https://doi.org/10.1515/ael-2023-0008.

Olczyk M (2016) International competitiveness in the economics literature: A bibliometric study. *Athenas Journal of Business ad economics*, 2(4), 375-388.

Sauer B (2015) Central bank behaviour concerning the level of bitcoin regulation as a policy variable. *Athens Journal of Business and Economics*, 1(4), 273-286.

Tekin B (2019) *Davranışsal Kurumsal Finans Alanında Yapılan Çalışmaların Bibliyometrik Analizi*, 4 th International Symposium on Innovative Approaches in Social, Human and Administrative Sciences, November 22-24, 2019, 31-35, Samsun, Turkey. https://doi.org/10.36287/setsci.4.8.005.

Ulukök, E. (2022). Algılanan Fazla Niteliklilik Araştırmalarının Entelektüel Yapısının Haritalanması: Bir Ortak Anahtar Kelime ve Ortak Atıf Analizi. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, (74), 54-74.

Yadav SP, Agrawal KK, Bhati BS, Al-Turjman F, Mostarda L (2022) Blockchain-based cryptocurrency regulation: An overview. *Computational Economics,* 59(4), 1659-1675.

Yermack D (2013) *"Is Bitcoin a Real Currency? An Economic Appraisal."* National Bureau of Economic Research, Working Paper No. 19747.