

Cryptocurrencies: A bibliometric analysis

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ABSTRACT

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The purpose of the current paper is to identify influential aspects of published literature and future research questions to set forth future research agenda based on comprehensive literature review using bibliometric and content analysis. The study analyzed 1225 documents from the international Scopus database using bibliometric analysis and content analysis. VOSviewer software is used for bibliometric analysis. The analysis revealed that most of the information was derived from the Finance Research Letters. Moreover, the United Kingdom is the most cited country, while Tianjin University in China has the highest publications affiliations. Furthermore, the analysis shows that the keyword analysis of cryptocurrency literature had four classes of research streams in cryptocurrency, namely, cryptocurrency, Blockchain, Fintech, and currency, representing the most upcoming trends. The present study makes a significant contribution to the literature by providing a framework for future research. The framework provides opportunities to future researchers to explore the web of relations among some identified research streams as future research agenda.

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1. Introduction

Cryptocurrency suggests a change from established financial system infrastructure design (Refk & Jamal, 2015a, 2015b). Information systems and technological advancements enable decentralized organization, operational security, and straightforwardness, including peer-to-peer connectivity and cryptographic algorithms, which differ from the structures of traditional economic systems, which are regionally integrated and less straightforward (Samuelson, 1968). The cryptocurrency that appeals the most to excellent attention inside this situation is Bitcoin, suggested by Nakamoto (2008). Bitcoin is a decentralized electronic financial technique that develops properties similar to a mature monetary system with its money creation and transaction mode of rule. In contrast to the discretionary decision-making of central banks, money generation in the Bitcoin world is publicly grasped through a shared and exposed mechanism, easing the dependability of the projected money supply.

Equally, near-real-time trade can be supervised through the open peer-to-peer network as the infrastructure permits it. The whole transaction account is kept in a 'chain' (Nakamoto, 2008) of transactions, mostly called Blockchain. The Blockchain signifies all actual and valid transactions amid the network consumers. Dissimilar to prior digitized currencies that can also be viewed as communal currencies accessible by unrestricted consumers partaking in online games, Bitcoin broadly emphasizes and is sovereign from a central institution accountable for currency generation. The story of Bitcoin is, yet, likewise distinctive due to its controversy.

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Cryptocurrencies are defined as a digital form of token or coins that exist on a decentralized ledger called a blockchain. Cryptocurrencies are a digital currency system and a worldwide growing phenomenon that is often and highly discussed by financial, venture capitalists, and governmental institutions alike (Glaser et al., 2014). Cryptocurrencies can validate and settle transactions without a central authority. Contrarily, these currencies only apply cryptography, and an internal incentive system, to regulate transactions, manage the distribution, and avoid fraud (Gandal et al., 2018). Cryptocurrencies, including Bitcoin, Litecoin, and Ethereum, lead to intense debates (Li & Wang, 2017). As the use of cryptocurrencies rises in the ideal business world, companies may make payments through such cryptocurrency (Dai & Vasarhelyi, 2017). Cryptocurrencies may also be less expensive than traditional debit and credit card platforms (Angel & McCabe, 2015).

Moreover, cryptocurrencies have become widespread since the first cryptocurrency was launched over a decade ago. Cryptocurrencies and related markets exemplify a nascent but developing power inside the financial sector. In 2009, Bitcoin happened to be the first widespread decentralized cryptocurrency (Gandal et al., 2018). Moreover, Cryptocurrencies' prices, popularity, and mainstream adoption have increased speedily. Above 1800 cryptocurrencies are with market capitalization surpassing 300 billion dollars according to a report in July 2018; simultaneously, Cryptocurrencies are part of the biggest open markets globally (Foley et al., 2019). As of August 2021, there were almost 6668 cryptocurrencies, and the global crypto market capital is \$2.17 trillion. According to Coin Market Cap (<https://coinmarketcap.com/>).

The speedy expansion in cryptocurrencies and the anonymity offered to the consumers have formed significant regulatory problems. In September 2017, the Chinese government disqualified citizens from conducting cryptocurrencies and declared prohibited initial coin offerings (ICOs). Central bank leaders, including the Bank of England's Mark Carney, openly showed anxieties related to cryptocurrencies (Foley et al., 2019).

Our appraisal makes numerous distinctive contributions. To begin with, we pinpoint authors whose work could be used as a benchmark for successive researchers, the geographic inclusion of Cryptocurrency matters, and the utmost appropriate journals. Secondly, we aid researchers and policymakers by recognizing research streams and condensing the highly cited articles' outcomes. Lastly, we state research gaps that successive direct research on cryptocurrency. The remaining paper proceeds as follows. Section 2 comprises a literature review, Section 3 focuses on the research questions, and Section 4 presents the method applied for the study. Section 5 reports result from the bibliometric and content analyses of the selected papers on cryptocurrency. Lastly, section 6 closes the study by stating parts for upcoming research on cryptocurrency.

2. Literature review

Lately, Cryptocurrency markets have encountered increased expansion, resulting in some proposing that they could be viewed as different kinds of investment assets. Based on this, Corbet et al. (2018) studied the strong associations amid cryptocurrencies and different financial assets on more excellent cryptocurrency assets, those having a market value above one billion dollars, according to a report close to July 2017. Through the application of the generalized variance decomposition methodology was proposed by Diebold and Yilmaz (2012). The study finds proof of the relative separation between these assets and the financial and economic assets. According to the findings, cryptocurrencies may extend diversification profits towards investors with short investment horizons. Ji et al. (2019) investigated the association through return and volatility spillovers through six prominent cryptocurrencies, including Bitcoin, Ethereum, Ripple, Litecoin, Stellar, and Dash, beginning August 7th, 2015 to February 22nd, 2018 applying some measures established by Diebold and Yilmaz (2012). According to the finding, Litecoin lies in the center of a linked network of returns, then the most significant cryptocurrency, Bitcoin. The results infer that return surprises caused by these two cryptocurrencies have the most significant influence on the rest of cryptocurrencies. Besides, exploration displays that association through undesirable returns is more solid than through positive ones. The leading beneficiaries of undesirable return surprises are Ripple and Ethereum, whereas Ethereum and Dash demonstrate the least kink through positive returns. Litecoin follows Bitcoin in terms of persuasion; according to Dash, there is a little link, suggesting its utility for hedging and divergence changes in the cryptocurrency market (Al-Omouh et al., 2020).

Contrarily, there exist several studies which focus mainly on Bitcoin. Bitcoin became the leading widespread decentralized cryptocurrency due to its utmost prosperity of digital currencies. Among these studies, a portion investigates the technological and economic factors of cryptocurrency conversation rates. For instance, Li and Wang's (2017) theory-driven empirical investigation of the Bitcoin exchange rate (contrary to USD) decision, considering technical and economic aspects by applying the autoregressive distributed lag (ARDL) model, which has a restriction test approach in the approximation. According to the finding, the Bitcoin exchange rate responds to variations in financial essentials and market situations during the short range. On the other hand, the long-range Bitcoin exchange rate primarily focuses on economic fundamentals, while the minor focus on technological aspects after the closure of Mt. Gox. Besides, other investigation's purpose of participating in the Bitcoin literature is by reviewing the market efficiency of Bitcoin. An example is Urquhart's (2016) that examined Bitcoin's market efficiency. Via a series of robust tests by using data consisting of daily Bitcoin's closing prices in USD beginning 1-8-2010 to 31-7-2016. Throughout the study period, the analysis demonstrates that the Bitcoin market is not inefficient.

Bouoiyour and Selmi (2015) pursued successful responses to the question, "How does Bitcoin look?" To answer the question, the study utilized an ARDL Bounds Testing technique to track the Bitcoin price on unlike variables (prospective Bitcoin essentials documented in the literary works) for daily data recorded between December 2010 and June 2014. The investigation

highlights speculative Bitcoin conduct. Also, virtual currency may be used to deal with economic issues. Nevertheless, the sign of being a harmless haven does not exist (Althunibat et al. 2021; Yaseen & Zayed, 2010).

Studies on cryptocurrencies, especially Bitcoin, have aroused the interest of Klein et al. (2018) and they claimed that Bitcoin is not the New Gold. According to the investigation, the two assets may hardly be more dissimilar by likening with volatility, correlation, and portfolio performance for time series for the season between July 1st, 2011, and December 31st, 2017. Firstly, they examined and related conditional alteration attributes of Bitcoin and Gold together with other assets and discovered variations in their structure. Next, the instrument a BEKK-GARCH model to approximate time-fluctuating conditional relationships. According to the assessment, Bitcoin and Gold have separate and distinct qualities as assets and equity market links. The study of Dyhrberg released in 2016 explored bitcoin's hedging proficiencies for everyday observations between 07-19-2010 and 05-22-2015. By utilizing the asymmetric GARCH approach as applied during gold exploration. According to the outcome, bitcoin can be utilized as a hedge counter to stocks in the Financial Times Stock Exchange Index. Hence, Bitcoin has similar hedging capacities as gold and can be involved in several tactics existing to market analysts to hedge definite market threats.

The study presented by Baur et al. (2018) examined whether Bitcoin could be used as a medium of exchange or an asset and, mainly, its present application and what application is likely to succeed in the future about its characteristics. The study analyzes Bitcoin's statistical attributes using everyday data between July 2010 and June 2015 and adopts the method of Ranaldo and Söderlind (2010). According to the research, Bitcoins are mostly utilized as a speculative investment instead of a substitute currency and medium of exchange. On the other hand, the paper presented by Demir et al. (2018) studied the higher estimate accuracy of the economic policy uncertainty (EPU) index on the everyday Bitcoin returns between July 18th, 2010, and November 15th, 2017. With the application of the Bayesian Graphical Structural Vector Autoregressive model together with the Ordinary Least Squares and the Quantile-on-Quantile Regression approximations, the study discovers EPU to have a projecting influence on Bitcoin returns. Essentially, Bitcoin returns are adversely related to the EPU. The article concludes that Bitcoin can be applied as a hedging instrument in contradiction of uncertainty.

Some studies have been interested in explaining if Bitcoin can hedge global uncertainty. For instance, Bouri et al. (2017) applied the vigorous restrictive relationship model to investigate Bitcoin's ability to be used in the same capacity as a hedge and safe-haven for important world stock indices, bonds, oil, gold, the overall commodity index, and the US dollar index, every day and weekly data span between July 2011 and December 2015. Generally, the experiential finds Bitcoin to be a poor hedge and is appropriate for development resolutions alone. Yet, Bitcoin cannot be applied in any other capacity except as a solid safe-haven in contrast to weekly great down movements in Asian stocks. Katsiampa (2017) determined the appropriate conditional heteroskedasticity model necessary for explaining the Bitcoin price volatility superior above the entire season that is every day closing prices for the Bitcoin CoinDesk Index between 18-7-2010 (as the earliest accessible date) and 1-10-2016 that matches the 2267 finding by applying GARCH models. The investigations find the AR-CGARCH model to be the top model because of highpoint the implication of comprising a short-range and a long-range constituent of the restrictive variance.

Bitcoin's decreasing variations from the beginning of 2015 have rejuvenated Bouoiyour and Selmi's (2015) thoughtfulness to determine if there is an expected Bitcoin market phase. By applying the optimal GARCH model on everyday data, the examination finds out that Bitcoin price volatility declines, particularly when comparing the seasons between December 2010 and June 2015 and January 2015 and June 2015. The degree of asymmetry remains solid; hence the study cannot claim that the Bitcoin market is mature. Mainly, Bitcoin might be driven by negatives instead of encouraging surprises. Moreover, Urquhart (2017) investigates psychological hindrances in the prices of energy markets. According to the outcome, there is a significant indication of clustering at round numbers, with above ten percent of prices wind up with 00 decimals likened to other disparities. However, there lacks a unique arrangement of returns beyond the round number. Besides, we back the negotiation proposition of Harris (1991) by proofing the significant positive association between the price and volume and price clustering at whole numbers (Althunibat et al., 2021; Yaseen & Qirem, 2018).

Table 1
The summary of the selected studies

Document	Purpose	Method	Finding
Demir et al. (2018)	Examines the extrapolation capacity of the economic policy uncertainty (EPU) index on everyday Bitcoin returns	Bayesian Graphical Structural Vector Autoregressive model	The EPU has the predictive potential over Bitcoin returns, according to the research. Bitcoin returns are fundamentally negatively linked to the EPU. The research indicates that Bitcoin can be utilized as a hedging strategy in the event of market volatility.
Ji et al. (2018)	Investigates the association through return and volatility spillovers across six prominent cryptocurrencies	Diebold and Yilmaz (2012) Measures	The findings reveal that Litecoin lies in the center of the interconnected network of returns. Again, research reveals that connectivity via negative returns is far more potent than closeness via positive returns. Bitcoin is the most prominent in terms of volatility spillovers, followed by Litecoin; Dash has pretty weak connectivity.
Klein et al. (2018)	Argued Bitcoin may not be the New Gold.	The contrast of volatility, correlation, and BEKK-GARCH model	The analysis indicates that Bitcoin and Gold have essentially varied qualities as assets and linkages to equity markets.

Table 1
The summary of the selected studies (Continued)

Document	Purpose	Method	Finding
Baur et al. (2017)	The problem of if Bitcoin is a means of trade or an asset is investigated.	Method of Rinaldo and Söderlind (2010)	According to the study, Bitcoins are mainly employed as a speculative investment rather than as a substitute currency or medium of exchange.
Bouri et al. (2017)	Explaining whether Bitcoin can hedge global uncertainty	Standard OLS regressions	The researchers discovered that unpredictability harms Bitcoin's raw return and longer-term fluctuations. The Quantile regressions show that Bitcoin does operate as a hedge against unpredictability.
Bouri et al. (2017)	Investigate the relationship amid Bitcoin and commodities	Pairwise dynamic conditional correlations (DCCs)	According to the outcome, Bitcoin is a good hedge and safe haven besides fluctuations of both commodity indexes.
Corbet et al. (2017)	Investigate the interplay involving cryptocurrencies as well as other financial assets.	Generalized variance decomposition methodology	Discovered evidence of such assets' relative independence to financial and economic assets. The findings suggest that to investors having short investment horizons period, cryptocurrencies may provide diversification profits.
Katsiampa (2017)	The goal of this study is to see which conditional heteroskedasticity model may effectively explain Bitcoin price fluctuations.	GARCH models	The AR-CGARCH model was shown to be the best, emphasizing the need to integrate both a short-run and a long-run element of the conditional difference.
Li and wang (2017)	Examine the technological and economic factors that influence cryptocurrency trade.	(ARDL) a model with a bounds test approach	The findings suggest that the Bitcoin exchange rate adapts to changes in economic principles and market trends in the short run. After the closure of Mt. Gox, the long-term Bitcoin exchange rate is more susceptible to economic principles and less reactive to technological variables.
Urquhart (2017)	Studying price clustering	Methodology of Dowling et al. (2016)	Price clustering at whole numbers demonstrates that price and volume have an important positive association.
Bouri et al. (2016)	To see if Bitcoin can be utilized as a hedge and a safe haven for some of the global most crucial stock indices.	The dynamic conditional correlation model	The findings show that Bitcoin is a weak hedge and can only be profitable when used for diversification.
Dyhrberg (2016)	Examine bitcoin's hedging potential	Asymmetric GARCH methodology	As a result, Bitcoin has some of the same hedging capabilities as gold, and market analysts may utilize it to hedge market risk using a variety of instruments.
Urquhart's (2016)	Bitcoin's Market efficiency	A battery of robust tests	Across the entire sample period, the study demonstrates that the Bitcoin market is weakly inefficient.
Bouoiyour and Selmi (2015)	To determine whether a new Bitcoin market phase is on the horizon.	GARCH model	Because the degree of asymmetry stays strong, the research cannot claim that the Bitcoin market is mature.
Bouoiyour and Selmi (2015)	Attempts to find answers to the following: What does Bitcoin look like?	(ARDL) Bounds test	The findings of the study underline Bitcoin's speculative nature. This virtual currency can also be utilized for economic purposes.

3. Research questions

The primary goal of this study is to give a complete overview of Cryptocurrency literature peer-reviewed journals indexed by the Scopus database to researchers and practitioners. We deal the following questions to achieve this goal:

Q1. What are the most critical and influential features of Cryptocurrency literature?

Q2. What are the Cryptocurrency literature's potential research directions?

4. Methodological approach

4.1. Data collections

We used a systematic procedure to gather the publications for this investigation from the Scopus database. Scopus was preferred since it is a well-known index covering a wide range of peer-reviewed journals and gives accurate bibliographic information. From 2016 to 2021, numerous search questions with applicable keywords were utilized to look for relevant terms in the title, abstract, and keywords of the publications in the database. Since most research began this year and then later, 2016 was used as the start date. We limited the outcomes only to include English-language articles, yielding 1225 documents, which were then evaluated for titles and abstracts. Theoretical and empirical approaches were chosen.

4.2 Data analysis

The overall literature patterns are offered to respond to the research questions presented by this investigation. The second research question was answered by performing a co-citation analysis to find the core publications of the research area that are the most co-cited publications by the reviewed studies. A co-word analysis was also performed because it aids in determining the research area's conceptual framework and research topics and answering the 3rd and 4th study questions. The bibliometric research was performed using VOSviewer software (version 1.6.17).

5. Analysis and interpretation

5.1 General information and performance analysis

Table 2 presents the central insight and general information of the data obtained. The table is a starting point for understanding the rest of this article's analysis. There are 1225 research articles connected to 478 different articles. Likewise, from 2774 publishers, only 211 published single-authored papers, which demonstrates the growing tendency of collaboration in cryptocurrency scholarly study. Moreover, the table shows that authors utilize 2407 keywords in 1225 publications.

Table 2

General information

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2016-2021
Sources (Journals, Books, etc)	478
Documents	1225
Average years from publication	1.35
Average citations per documents	8.915
Average citations per year per doc	2.943
References	44551
DOCUMENT TYPES	
article	936
conference paper	241
review	48
DOCUMENT CONTENTS	
Keywords Plus (ID)	2407
Author's Keywords (DE)	2756
AUTHORS	
Authors	2774
Author Appearances	3488
Authors of single-authored documents	211
Authors of multi-authored documents	2563
AUTHORS COLLABORATION	
Single-authored documents	236
Documents per Author	0.442
Authors per Document	2.26
Co-Authors per Documents	2.85
Collaboration Index	2.59

Table 3 explores that *Finance Research Letters* are highly applicable journals with 99 published compatible articles on cryptocurrency literature. Then IEEE International Conference on Blockchain and Cryptocurrency ICBC 2020, which published 78 articles. Furthermore, *Economic Letters* and *Research in International Business and Finance* had both published 30 articles. The rest of the sources are shown in Table 3.

Table 2

Most relevant sources

Sources	Articles
FINANCE RESEARCH LETTERS	99
IEEE INTERNATIONAL CONFERENCE ON BLOCKCHAIN AND CRYPTOCURRENCY ICBC 2020	78
ECONOMICS LETTERS	30
RESEARCH IN INTERNATIONAL BUSINESS AND FINANCE	30
APPLIED ECONOMICS LETTERS	22
INTERNATIONAL REVIEW OF FINANCIAL ANALYSIS	22
APPLIED ECONOMICS	15
LECTURE NOTES IN BUSINESS INFORMATION PROCESSING	15
JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS AND MONEY	14
QUARTERLY REVIEW OF ECONOMICS AND FINANCE	13
NORTH AMERICAN JOURNAL OF ECONOMICS AND FINANCE	12
SUSTAINABILITY (SWITZERLAND)	12
JOURNAL OF ALTERNATIVE INVESTMENTS	11
TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	11
IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT	10
JOURNAL OF LEGAL ETHICAL AND REGULATORY ISSUES	10
JOURNAL OF MONEY LAUNDERING CONTROL	10
INTERNATIONAL JOURNAL OF FINANCE AND ECONOMICS	9
INTERNATIONAL REVIEW OF ECONOMICS AND FINANCE	9
INTERNATIONAL JOURNAL OF RECENT TECHNOLOGY AND ENGINEERING	8

Bradford's law is also used in this research to categorize the sources into three core zones: fundamental zones 1, 2, and 3. The law separates sources into three zones based on the frequency with which they are published. Core zone 1 contains the sources with the most outstanding frequency publications, core zone 2 contains the sources with the second-highest frequency publications, and core zone 3 contains the journals with the 3rd most outstanding occurrence publications.

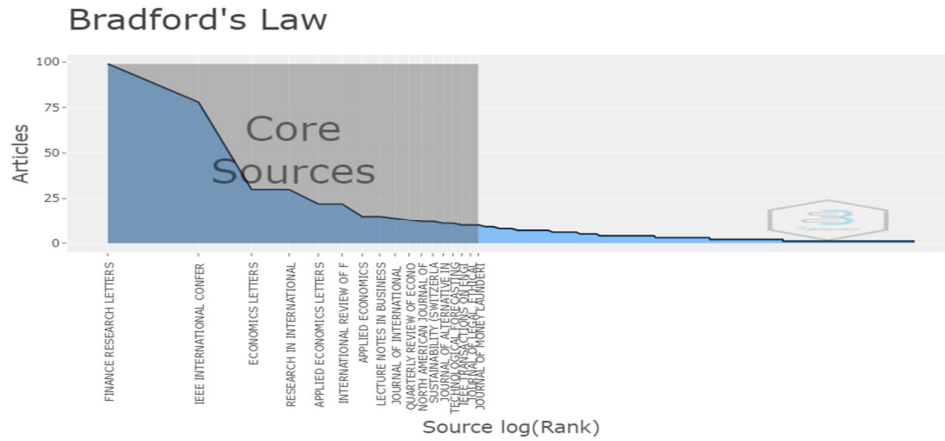


Fig. 1. Influential sources depended on Bradford's law

With regards to the most cited countries in the world according to publications. The United Kingdom and the USA are at the top of the list, with 1016 and 912 publications. China and Lebanon have 868 and 662 publications, respectively. The rest of the countries can be shown in Fig. 2.

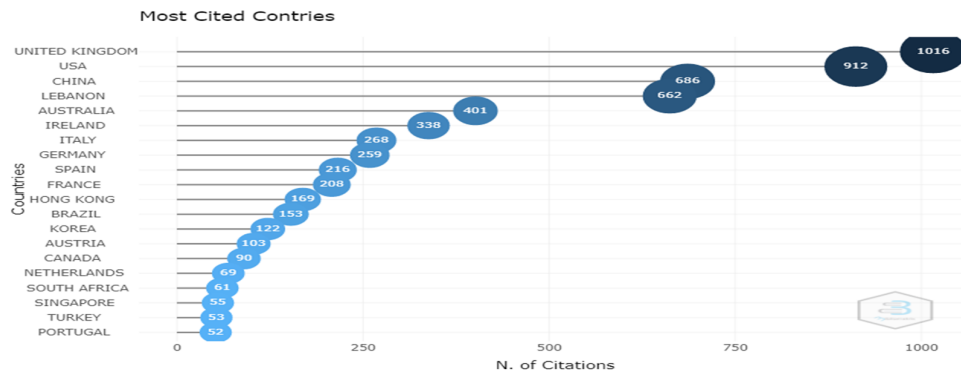


Fig. 2. Most cited countries

Moreover, Fig. 3 shows the highest affiliations in terms of publications. Tianjin University with 26 publications, followed by Dublin City University with 25 publications. Interestingly, none of the top ten universities are from the United Kingdom nor the USA, which is the highest most cited country globally.

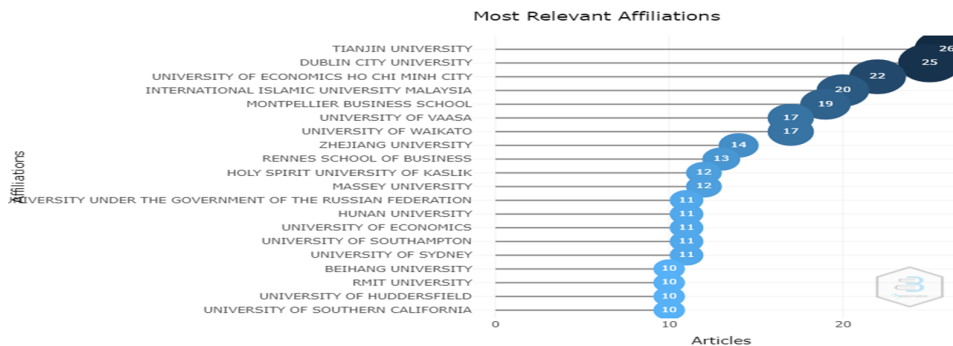


Fig. 3. Most relevant affiliations

Furthermore, this study explores the most relevant authors who published on cryptocurrency. Fig. 4 finds that Corbet S has 26 publications, which is the highest one who has published in this field, followed by Bouri E with 17 publications and Lucey B and Roubaud D with 13 publications for each one.

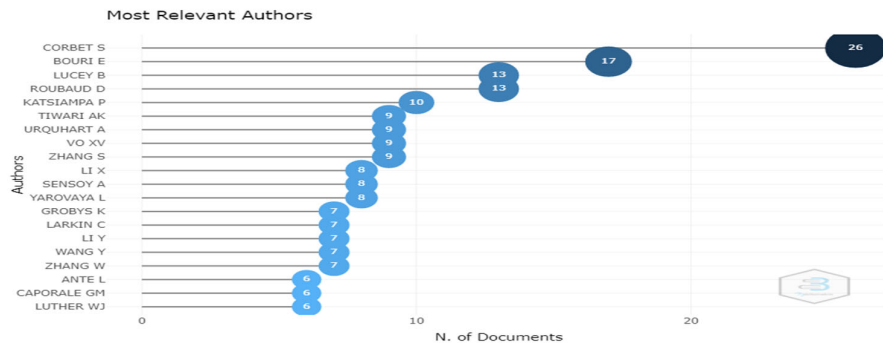


Fig. 4. Most relevant authors

5.2 Citation analysis

It is a type of literary communication device that examines bibliographic references. It is also the situation of two papers getting linked together. The citation analysis was used to examine and rate research performance, despite complaints about its fitness for this objective (Garfield, 1979). However, there is agreement about its viability to gauge influences on several areas, as shown below.

5.2.1 *Most cited documents.* Table 3 investigates the utmost cited articles in the cryptocurrency field within the data in this paper. Urquhart A (2016) examines the inefficiency of Bitcoin has 421 global citations.

5.2.2 *The majority of local publications are cited (from the reference list).* Table 4 illustrates the most frequently mentioned sources in our data from the reference list. According to the article, the Economic Letter is the leading journal and the most cited and essential source, making it the perfect option for publishing high-quality research in the cryptocurrency sector.

Table 3
Most Global Cited Documents

	Authors/year	Title	Source title	Local Citations	Global Citations
1	URQUHART A, 2016	The inefficiency of Bitcoin	Economics Letters	187	421
2	BOURI E, 2017	Volatility estimation for Bitcoin: A comparison of GARCH models	Economics Letters	131	312
3	KATSIAMPA P, 2017	On the hedge and safe haven properties of Bitcoin: Is it really more than a diversifier?	Finance Research Letters	122	334
4	GANDAL N, 2018	Price manipulation in the Bitcoin ecosystem	Journal of Monetary Economics	74	181
5	KLEIN T, 2018	Bitcoin is not the New Gold – A comparison of volatility, correlation, and portfolio performance	International Review of Financial Analysis	71	160
6	FRY J, 2016	Negative bubbles and shocks in cryptocurrency markets	International Review of Financial Analysis	66	147
7	DAI J, 2017	Toward Blockchain-Based Accounting and Assurance	Journal of Information Systems	62	111
8	LI X, 2017	The technology and economic determinants of cryptocurrency exchange rates: The case of Bitcoin	Decision Support Systems	62	127
9	FOLEY S, 2019	Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed through Cryptocurrencies?	Review of Financial Studies	48	116
10	URQUHART A, 2017	Price clustering in Bitcoin	Economics Letters	48	152

5.3 Network analysis

5.3.1 *Co-citation analysis:* Analysis for co-citations about document, authorship, institution, and national network, co-citation is a gauge of citation relations that illustrates the semantic grouping amid the cited and citing research papers (Small, 1999). The test is carried out in the paper using a VOS viewer. The relevance of a node is explained by its concentration and size, as

interlinking lines demonstrate the depth of the association across all nodes (Paltrinieri et al., 2019; Khan et al., 2020). The co-citation within countries is depicted in Figure 5. The United States and the United Kingdom are the epicenters of cryptocurrency literature, with a significant association amid the United States with Australia and a significant relationship between the UK, Austria, and India. Fig. 6 explores the network of sources. The results confirm the analysis above and reveal that the *Finance Research Letters* (blue) and *Economic Letters* (green) are the most published papers of cryptocurrency literature.

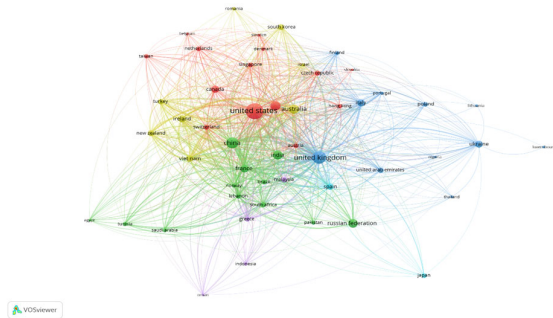


Fig. 5. Co-citation between countries

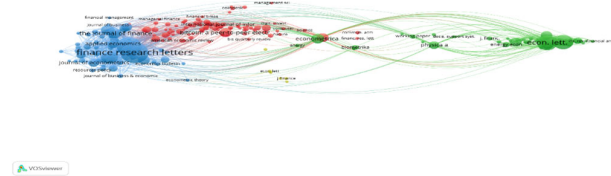


Fig. 6. Co-citations of sources

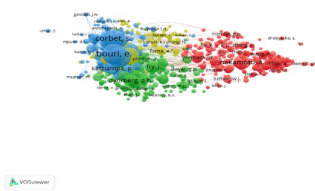


Fig. 7. Co-citation of authors

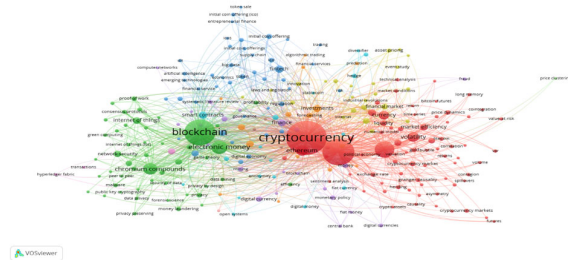


Fig. 8. Keyword occurrence and connectivity

5.3.3 Analysis of keywords and cartography

Fig. 8 shows the thematic map and the keyword analysis of cryptocurrency literature and shows the evolution and dynamics of cryptocurrency literature. The literature has discussed cryptocurrency (orange node) and its relationship with Blockchain (green node), Fintech (blue zone), and currency (purple zone).

6. Conclusion and future directions

The paper has figured out that Cryptocurrencies have been rapidly increasingly used in the last decade since technology innovation moved to cover financial services. In addition, global trends in economics and finance have influenced financial services, and thus the number of articles increased globally. Furthermore, according to the Scopus database, this study summarizes the most influential Cryptocurrencies papers, authors, institutions, and journals. RStudio, VOSviewer, and advanced Excel software packages were used to prepare the analysis. This paper has examined one of the first pieces of research in this field that established the publication structure. In general, 1225 papers have been published in this domain by 2774 authors as of September 2021. Corbet was the most published researcher with 26 papers. On the other hand, according to most institution publishers, Tianjin University is considered the best publisher with 26 publications. Moreover, in the area of Cryptocurrencies, the United Kingdom was the leading country with 1016 papers. Finance research Letters with 99 papers published in the most sources in this area in terms of journal sources. Currently, this paper found that Bouri, E, and Corbet, S is the most often co-cited article.

Furthermore, Urquhart A (2016) and Katsiampa (2017) received the highest cited papers with 421 and 334, respectively. Furthermore, the co-citation study revealed that the United Kingdom has the most cryptocurrency literature, with strong ties to Austria and India. The finding of this paper has shown that by analyzing the keyword analysis of cryptocurrency literature, there are four classes of research streams in cryptocurrency, namely cryptocurrency, Blockchain, Fintech, and currency, which represent the most future upcoming trends.

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