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Past, Present, and Future of Cryptocurrency: A Bibliometric Review

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Abstract

Cryptocurrencies have risen to prominence as a vital financial software system. They rely on a secure distributed ledger data structure, with mining as a key component. Mining adds records of previous transactions to the Blockchain, a distributed ledger that allows users to reach a safe, reliable consensus for each transaction. Mining also creates wealth in the form of new currency units. As a result, this research aims to conduct a bibliometric analysis of the published scientific literature on cryptocurrency's present trend and development. All relevant literature on cryptocurrency was compiled using Scopus. We also utilize Publish or Perish to integrate the data and perform fundamental analysis before visualizing it with VOSviewer and Microsoft Excel. The number of citations, publications, and research productivity were all measured using the bibliometric method. Based on the keyword search results, 2,249 documents were identified. Only publications published in peer-reviewed journals were chosen, and most articles were written in English. Limiting the Scopus database to journal papers yielded all of these articles. The bibliometric analysis summarises the current state of the scientific literature on cryptocurrencies and highlights topics worth investigating.

Keywords: Cryptocurrency, Digital Currency, Bibliometric Analysis, VOSviewer, Scopus Database

Introduction

Cryptocurrencies have rapidly transitioned from a niche technological innovation to a cornerstone of the global financial system. As of 2024, the global market value of cryptocurrencies is estimated at $2.2 trillion, marking a significant increase from previous years (García-Corral et al., 2022). This growth is driven by widespread adoption, with approximately 562 million people worldwide, or 6.8% of the global population, owning some form of cryptocurrency (García-Corral et al., 2022). The approval of Bitcoin and Ethereum ETFs

by the U.S. Securities and Exchange Commission has further legitimized and boosted the market (García-Corral et al., 2022). These developments underscore cryptocurrencies' growing importance and integration into mainstream financial systems, highlighting their potential to revolutionize traditional financial practices (García-Corral et al., 2022).

In Malaysia, the cryptocurrency market is experiencing notable growth. The projected revenue for the cryptocurrency market in Malaysia is expected to reach $306 million in 2024 (Statista, 2024). The number of cryptocurrency users in Malaysia is anticipated to grow to 4.65 million by 2025, with a user penetration rate of 13.35% (Statista, 2024). This growth is supported by increasing government support and a burgeoning number of local blockchain startups (Statista, 2024). The rapid adoption of cryptocurrencies in Malaysia highlights the country's potential as a significant player in the global cryptocurrency landscape, reflecting broader regional trends in Southeast Asia (Janteng et al., 2024).

Numerous studies have explored various aspects of the cryptocurrency market. For instance, Almeida and Gonçalves (2023), conducted a systematic literature review on the cryptocurrency market microstructure, revealing complex network associations and providing a detailed research trending analysis (Almeida & Gonçalves, 2023). Another study by Urquhart (2016) characterized cryptocurrencies as having a volatile future, while Katsiampa (2017) and Chu et al. (2017) highlighted their secure yet non-perishable nature (Urquhart, 2016; Katsiampa, 2017; Chu et al., 2017). These studies collectively underscore the dynamic and multifaceted nature of the cryptocurrency market, offering insights into its efficiency, interconnectedness, and potential for future research.

The primary aim of this study is to conduct a comprehensive bibliometric analysis of the scientific literature on cryptocurrencies. By compiling and analyzing relevant literature from the Scopus database, this research seeks to identify current trends, measure research productivity, and highlight areas for future investigation. Utilizing tools such as Publish or Perish, VOSviewer, and Microsoft Excel, this study will provide a detailed overview of cryptocurrency research, offering valuable insights for academics, investors, and policymakers. This analysis aims to summarize the current state of the scientific literature on cryptocurrencies and highlight topics worth further investigating.

Numerous studies have previously underlined the significance of the cryptocurrency topic and its popularity among scholars, as indicated by the increasing number of publications each year (Alsmadi et al., 2022). As a result of this analysis, we decided to conduct this bibliometric analysis based on the comprehensive advancement of cryptocurrency in various fields. We must analyze cryptocurrency studies published online over the previous ten years and determine how this bibliometric analysis can influence present and future research. This bibliometric review provides answers to the following research questions:

i. What is the current cryptocurrency trend?
ii. Which are the most influential cryptocurrency articles?
iii. What are the most popular cryptocurrency themes among academics?
iv. Who are the most influential cryptocurrency authors?
v. What is the present condition of cryptocurrency collaboration?
vi. What is the intellectual structure of modern cryptocurrency research?

This study is organized into five major sections: Introduction, Review of Literature, Data and Methods, Results and Discussion, and Conclusion and Limitation. A detailed descriptive study of the types of documents and sources, the year of publication, the languages used in publications, the sources of publication, the geographical and institutional distribution, the subject area, and the trend in the fundamental intellectual structure of the publication aids the Results and Discussion section. Finally, we demonstrate the findings, limits, and topics future researchers should study.

Literature Review

The inception of cryptocurrencies can be traced back to Satoshi Nakamoto's introduction of Bitcoin in 2008 (Nakamoto, 2008). Bitcoin's decentralized nature and the underlying blockchain technology have since inspired the creation of numerous other cryptocurrencies, collectively known as altcoins. Over the years, the cryptocurrency market has grown exponentially, with thousands of cryptocurrencies now available, each offering unique features and applications. This evolution has been driven by technological advancements, increasing acceptance by merchants and consumers, and growing interest from institutional investors. These factors collectively underscore the dynamic growth and potential of the cryptocurrency market.

Cryptocurrencies are known for their high volatility, which is a subject of extensive research. Studies have shown that market sentiment, regulatory news, and macroeconomic indicators significantly influence cryptocurrency prices. For instance, Kristoufek (2013), found that the number of Google searches for Bitcoin positively impacted its price (Kristoufek, 2013). Similarly, Bouoiyour and Selmi (2015), identified that the long-term price increase in Bitcoin was influenced by growing demand for trading and exchange transactions (Bouoiyour & Selmi, 2015). These findings highlight the complex interplay of various factors driving cryptocurrency market dynamics.

The technological underpinnings of cryptocurrencies, particularly blockchain technology, have been a focal point of research. Blockchain's decentralized ledger system ensures transparency and security, making it a revolutionary technology with applications beyond cryptocurrencies. Studies by Li and Wang (2017), and Ferguson (2018), have emphasized the importance of blockchain in enhancing transaction trust and transparency (Li & Wang, 2017; Ferguson, 2018). Furthermore, innovations such as smart contracts and decentralized finance (DeFi) platforms have expanded the utility of blockchain technology, fostering new areas of research and development. These advancements highlight the transformative potential of blockchain technology across various sectors.

The regulatory environment for cryptocurrencies varies significantly across different jurisdictions, impacting their adoption and market behaviour. Research by Corbet et al. (2019) and Yermack (2015) has explored the implications of regulatory actions on cryptocurrency markets. While some countries have embraced cryptocurrencies and blockchain technology, others have imposed strict regulations or outright bans. This regulatory diversity poses challenges for global cryptocurrency adoption and necessitates ongoing research to understand its implications fully.

Various factors, including technological literacy, economic conditions, and regulatory frameworks, have influenced the adoption of cryptocurrencies. Studies have shown that countries with higher technological adoption rates and favourable regulatory environments have higher cryptocurrency usage. For example, a study by Kim, Bock, and Lee (2021) highlighted the role of low transaction costs and peer-to-peer systems in driving cryptocurrency adoption (Kim et al., 2021). Additionally, the increasing use of cryptocurrencies for remittances and as a hedge against inflation in developing countries underscores their growing importance in the global financial system. These factors collectively illustrate the multifaceted drivers behind the increasing adoption of cryptocurrencies worldwide.

Cryptocurrencies have emerged as a popular investment asset, attracting attention from both individual and institutional investors. Research has examined the role of cryptocurrencies in portfolio diversification, with findings suggesting that they can offer significant benefits due to their low correlation with traditional financial assets. Studies by Sovbetov (2018) and Leshno and Strack (2020), have demonstrated the potential of cryptocurrencies to enhance portfolio performance and reduce risk (Sovbetov, 2018; Leshno & Strack, 2020). However, cryptocurrencies' high volatility and speculative nature also pose risks that investors must consider. These factors collectively highlight the dual nature of cryptocurrencies as both an opportunity and a challenge for investors.

Despite the extensive research on cryptocurrencies, several areas remain underexplored. Future studies could focus on the long-term sustainability of cryptocurrencies, the environmental impact of mining activities, and the potential for central bank digital currencies (CBDCs) to coexist with decentralized cryptocurrencies. Additionally, integrating artificial intelligence and machine learning in cryptocurrency trading and risk management presents promising avenues for research. Addressing these gaps will provide a more comprehensive understanding of the cryptocurrency ecosystem and its future trajectory.

Research Methodology

Bibliometrics is the study of reported physical units, bibliographic units, or surrogates (Broadus, 1987). It is a different approach than a standard literature review. Furthermore, a methodical approach to bibliometric analysis might uncover more detailed publication-related data, such as authors, keyword frequency, and citations (Rusly et al., 2019). Bibliometric analysis is gaining popularity as one of the methods used to reveal the study trend (Ahmi & Mohammad, 2019). It has been commonly used in recent years in management (Ferreira et al., 2014) to gain a deeper understanding of the trends in literature, historical analysis, forecasts, and contributions (Nain et al., 2022). The bibliometric study could reveal descriptive publishing patterns based on a domain, region, country, and period. Various metrics such as publishing outlets, publication genres, authorship, affiliations, country, h-index, and g-index were among bibliographic research's most often researched features (Ahmi & Mohammad, 2019).

Scopus is the largest archive of scholarly publications and the most comprehensive searchable citation and abstract searchable literature source (Burnham, 2006; Chadegani, 2013). This database served as the foundation for obtaining prior web accessibility work. The database contains information about the publication, such as the type of access, year, author name,

topic area, type of text, source's title, keyword, affiliation, nation, type of source, and language. To better characterize important academic publications in the study subject under consideration. We restricted the search for web accessibility studies based on titles. Due to the enormous amount of research on cryptocurrency, this evaluation focused only on cryptocurrency documents based on the titles of publications (Kamalluarifin, 2016). As a result, the following study was conducted using this keyword: TITLE-ABS-KEY (cryptocurrency) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "j")).

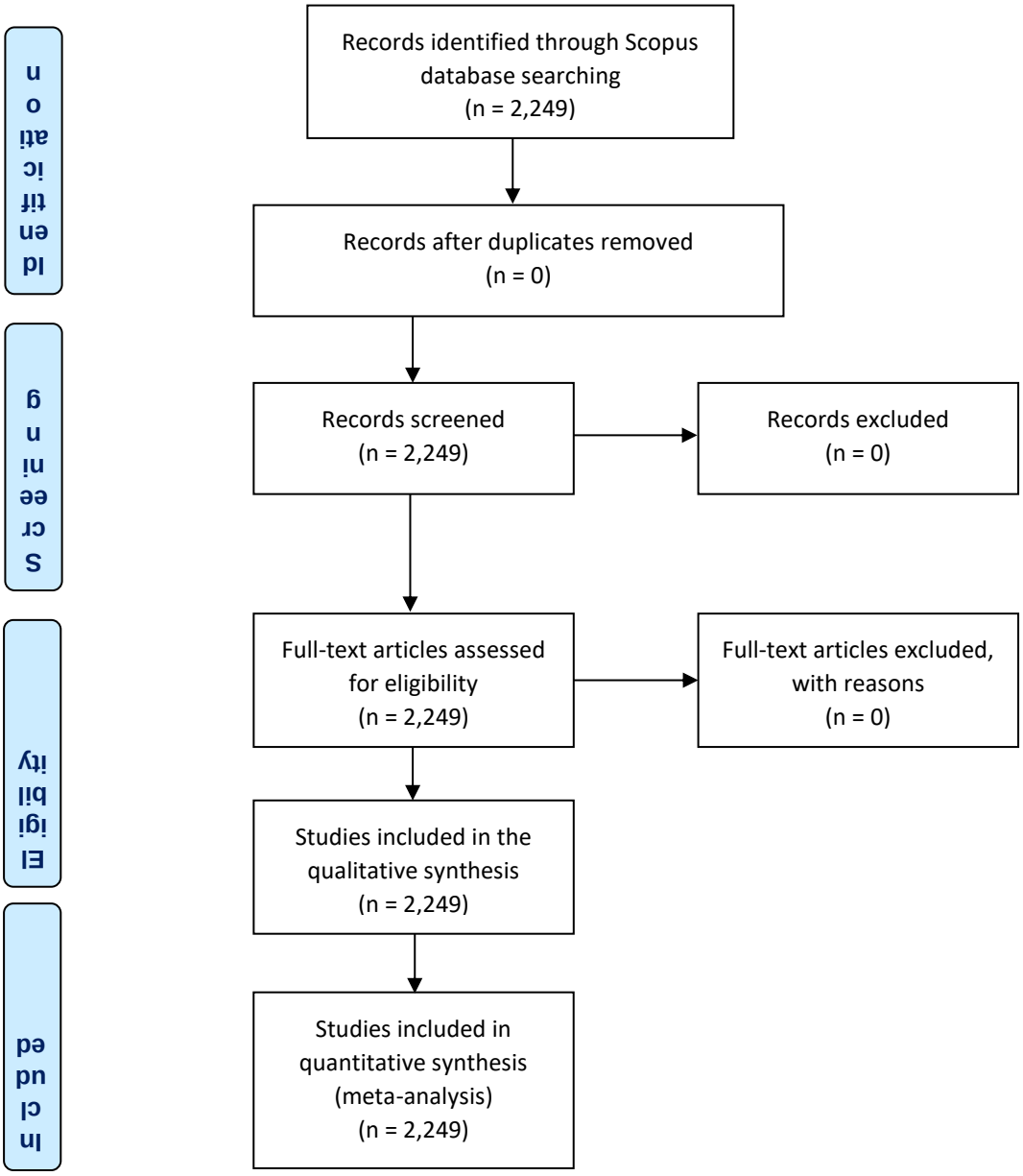

Figure 1. PRISMA Flow Diagram
Source: Moher, Liberati, Tetzlaff, Altman, The PRISMA Group (2009)

Results

Extracting scholarly works for analysis covers document types and sources, annual growth, the language used in a piece, its subject, and keywords. It also includes an analysis of authorship and citations and how each piece was written. The bulk of the results are interpreted in terms of frequency and percentage. Meanwhile, as some retrieved documents per year, we present the annual growth data, including their frequency, percentage, and cumulative percentage, until April 26, 2022. As citation metrics, we write about citation analysis and show 10 years of the most cited papers in web accessibility.

Evolution of Publication

According to Figure 1, the number of relevant publications climbed gradually after that, particularly in 2017. We anticipate that the number of articles will steadily increase as more and more studies on cryptocurrency issues are conducted. With 196 total articles in 2018, the number of publications reached the triple digits. The total number of articles reached 300 in 2019, having quadrupled from 394 total publications in 2018. This topic is gaining traction, with 568 and 708 publications published in 2020 and 2021, respectively. Even though the year is still in progress, more than 292 papers have been published until April 26, 2022. Some publications are already planned and indexed in the Scopus database. In 2013, Pass, Rosen, and Tseng (2013) published the first paper on cryptocurrency concerns, titled "Public-Coin Parallel Zero-Knowledge for NP."

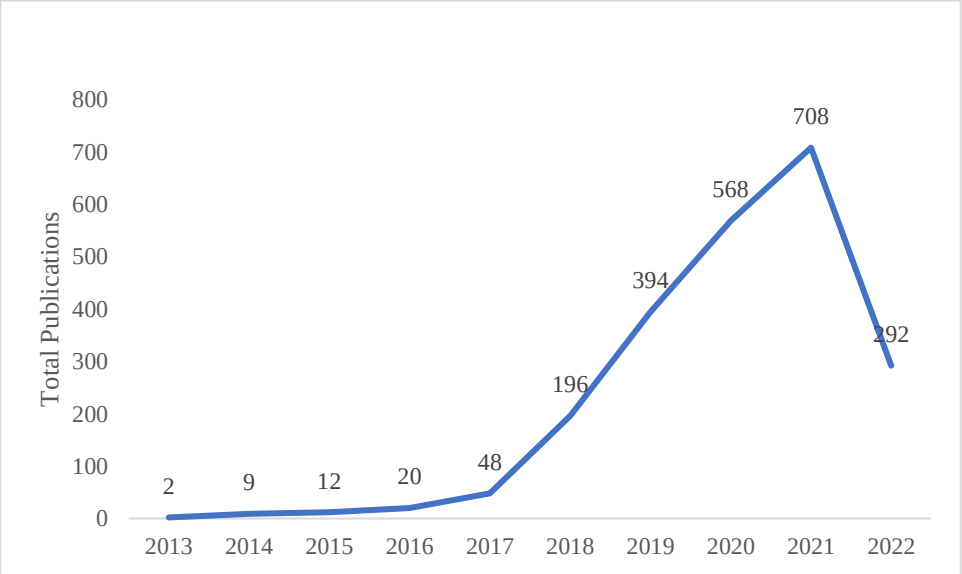

Figure 2: Cryptocurrency Publications, 2013-2022 (n=2,249)

Document and Source Types

This research only looks at cryptocurrency articles and source types. As exhibited in Table 1, the majority of access types came from all open access (43%), followed by green access (22.9%), gold access (20.1), bronze (8.3%), and last but not least, hybrid gold (5.7%).

Table 1
Document, Source, and Access Types

Document Type	NP	%	Source Type	NP	%	Access Type	NP	%
Article	2249	100.00	Journal	2249	100.0	All Open Access	1040	43.0
						Gold	486	20.1
						Hybrid Gold	138	5.7
						Bronze	201	8.3
						Green	554	22.9

Note: NP = No. of Publications

Languages of Documents

Almost all papers are written in English since English is a widely recognized literary language. Table 2 shows that most of the materials acquired were published in English, with 2,172 total articles accounting for 96.6 percent. Russian and Chinese publications accounted for 2.09 percent of total publications, followed by Spanish (0.53 percent), Italian (0.81 percent), and Portuguese (0.13 percent). Other languages, including Czech, German, Korean, Ukrainian, Japanese, Slovenian, and Turkish, contributed to only 0.48 percent of total language use in academic papers.

Table 2
Languages

Language	NP	%
English	2172	96.6
Russian	29	1.29
Chinese	18	0.80
Spanish	12	0.53
Italian	4	0.18
Portuguese	3	0.13
Czech	2	0.09
German	2	0.09
Korean	2	0.09
Ukrainian	2	0.09
Japanese	1	0.04
Slovenian	1	0.04
Turkish	1	0.04

Note: NP = No. of Publications

Subject Area

Over the previous decade, cryptocurrency research has expanded from Economics, Econometrics, and Finance to Material Science. As a result, the written articles based on the subject areas were also addressed in this study. Economics, Econometrics, and Finance account for the majority of cryptocurrency research, accounting for 24.3 percent of all reports, followed by Computer Science (21.2 percent), Business, Management, and Accounting (13.8 percent), Engineering (12.1 percent), Social Sciences (11.1 percent), Mathematics (7.8 percent), Decision Sciences (3.7 percent), Physics and Astronomy (3.2 percent), and Material Science (2.9 percent). Table 3 displays the number of publications and percentages based on the subject areas of cryptocurrency study.

Table 3
Subject Area

	Subject Area	NP	%
1	Economics, Econometrics and Finance	879	24.3
2	Computer Science	765	21.2
3	Business, Management and Accounting	499	13.8
4	Engineering	438	12.1
5	Social Sciences	401	11.1
6	Mathematics	281	7.8
7	Decision Sciences	132	3.7
8	Physics and Astronomy	115	3.2
9	Materials Science	105	2.9

Note: NP = No. of Publications

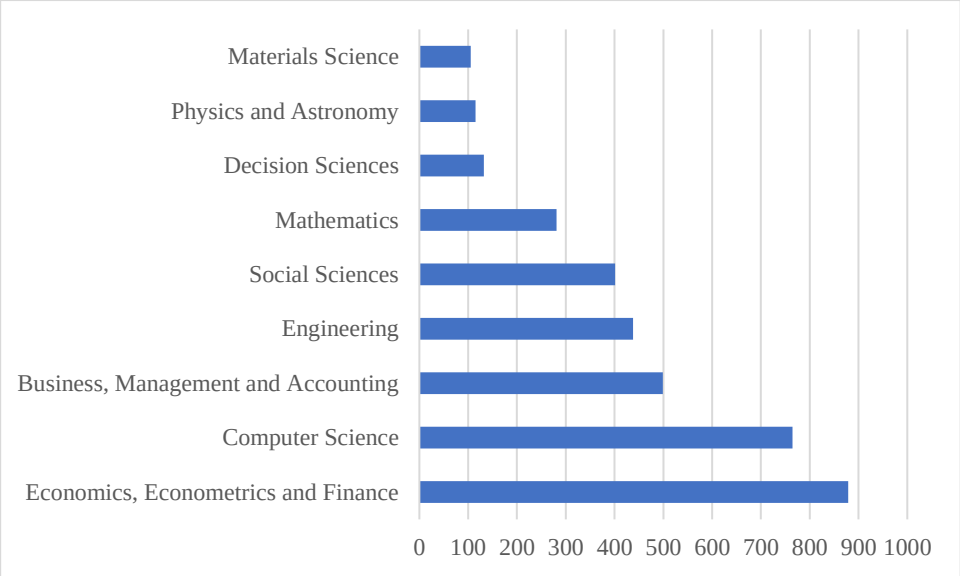

Figure 3: Top 9 Subject Area

Geographic Distribution of Publication and Affiliation

Researchers from 159 separate countries contributed to the release of the extracted documents. Table 4 lists the top 8 countries that subscribe to cryptocurrency publications. A total of 2,249 documents with 382 publications were released in the United States of America (US), followed by China (300), the United Kingdom (UK) 225, India 154, Russia 124, Australia 120, Italy 102, and South Korea 101. Overall, the United States was placed first in total citations by region, with 6,854 citations, followed by China (5,818) and the United Kingdom (5,729). Meanwhile, among the Top 8 countries with the most citations, Italy (1,618), India (1,244), and Russia (739) were the bottom three with the fewest citations.

The United States, China, and the United Kingdom had the highest referenced articles, while Australia, Italy, and South Korea had the lowest cited publications. The h-index quantifies an author's scholarly productivity and impact (Hirsch, 2005). The h-index quantifies an author's cumulative scholarly productiveness. It compares publications to citations to reconcile number and quality. Egghe (2006) introduced the g-index as a replacement for the h-index, as the g-index gives a higher weight to highly cited articles. The g-index reflects an author's

top articles' performance. Additionally, the g-index aids in highlighting the distinction between writers' relative impacts. The exaggerated values of the g-index enable credit to be given to papers that receive few or no citations while depriving highly cited studies of credit. The US has the highest h-index (43) and g-index (73), followed by the UK with an h-index (40) and g-index (71), China h-index (35) and g-index (71), Australia h-index (23) and g-index (39), and South Korea h-index (16) and g-index (41). On the other hand, Italy with h-index (16) and g-index (38), India with h-index (16) and g-index (33), and Russia Federation with h-index (13) and g-index (24) were the bottom 3 in terms of h-index and g-index.

Table 4
Top 8 Countries Contributed to the Publications

	Country	TP	NCP	TC	CP	C/CP	h-Index	g-Index
1	United States	382	295	6854	17.9	23.2	43	73
2	China	300	217	5818	19.4	26.8	35	71
3	United Kingdom	225	185	5729	25.5	31.0	40	71
4	India	154	94	1244	8.1	13.2	16	33
5	Russian Federation	124	80	739	6.0	9.2	13	24
6	Australia	120	94	1768	14.7	18.8	23	39
7	Italy	102	75	1618	15.9	21.6	16	38
8	South Korea	101	72	1800	17.8	25.0	16	41

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average
Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

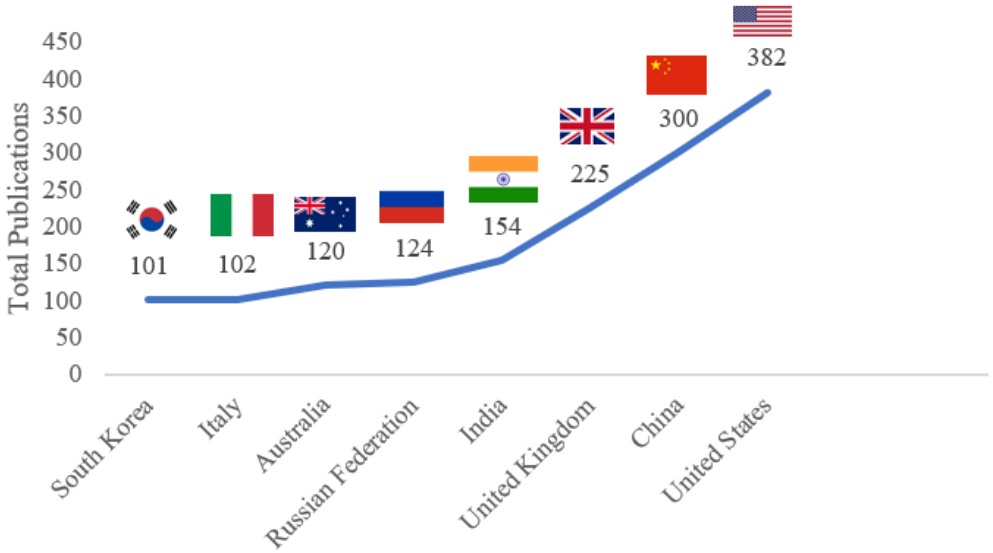

Figure 4: Top 10 Countries based on Total Publications

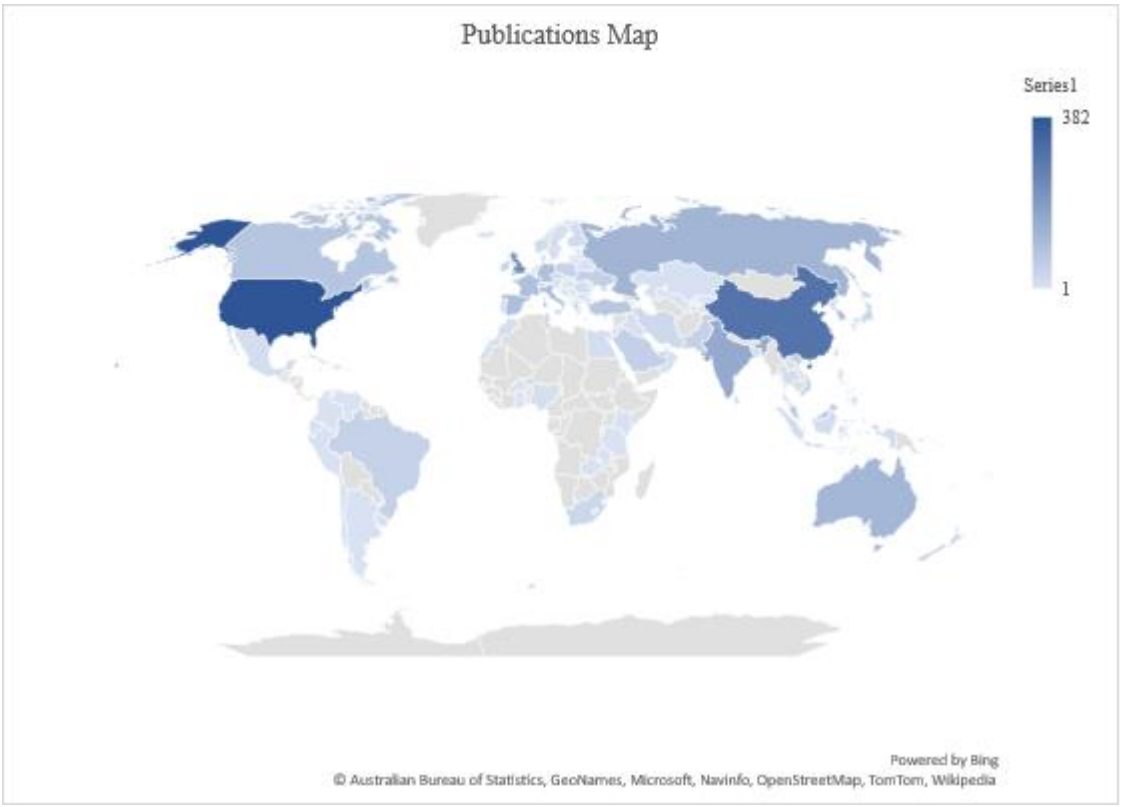

Figure 5: Publications Map

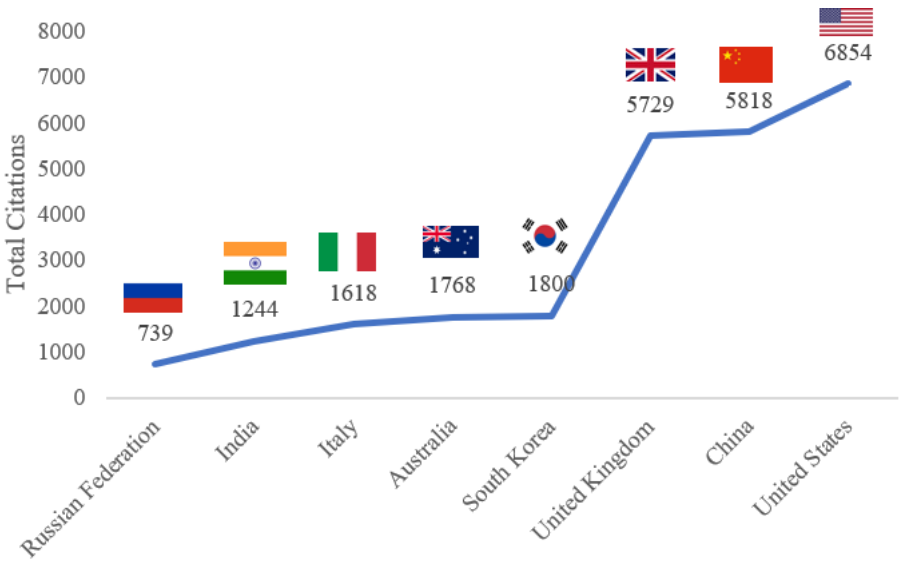

Figure 6: Top 10 Countries by Total Citations

Authorship Analysis

This report also examines the most notable authors investigating cryptocurrency publications for cryptocurrency research. Table 5 shows the writers who have at least eleven publications. Corbet, Bouri, Lucey, Yarovaya, Roubaud, Sensoy, Urquhart, Katsiampa, Naeem, and Tiwari, with at least eleven publications on cryptocurrency studies, are among the top researchers in this field of study. The cumulative citation shows the number of times other Scopus-listed journals have cited cryptocurrency reviews.

Corbet produced most of the articles; his work is the most quoted article about cryptocurrency. Corbet, Bouri, and Lucey were the top three authors by publication count. Bouri, Roubaud, and Urquhart received the most citations, while Naeem, Yarovaya, and Tiwari had the least citations. The h-index quantifies an author's scholarly productivity and impact (Hirsch, 2005). The h-index quantifies an author's cumulative scholarly productiveness. It compares publications to citations to reconcile number and quality. Egghe (2006) introduced the g-index as a replacement for the h-index, as the g-index gives a higher weight to highly cited articles. The g-index reflects an author's top articles' performance. Additionally, the g-index aids in highlighting the distinction between writers' relative impacts.

The inflated values of the g-index enable credit to be given to papers that receive few or no citations while depriving highly cited studies of credit. Corbet has the greatest h-index (17) and g-index (28). In contrast, Bouri has the highest h-index (15) and g-index (22), Roubaud has an h-index (12) and g-index (13), Lucey has an h-index of 11 and a g-index of 16, Katsiampa has an h-index of 10 and a g-index of 11, Yarovaya has an h-index of 8 and a g-index of 14, and Sensoy and Urquhart have an h-index of 8 and a g-index of 12. In comparison, Tiwari's h-index (8) and g-index (11) and Naeem's h-index (5) and g-index (7) were the lowest.

Table 5
Top 10 Productive Authors

	Author	TP	NCP	TC	CP	C/CP	h-Index	g-Index
1	Corbet, S.	28	28	864	30.9	30.9	17	28
2	Bouri, E.	22	20	1486	67.5	74.3	15	22
3	Lucey, B.	16	14	526	32.9	37.6	11	16
4	Yarovaya, L.	15	12	213	14.2	17.8	8	14
5	Roubaud, D.	13	13	1382	106.3	106.3	12	13
6	Sensoy, A.	12	11	225	18.8	20.5	8	12
7	Urquhart, A.	12	12	1007	83.9	83.9	8	12
8	Katsiampa, P.	11	10	872	79.3	87.2	10	11
9	Naeem, M.A.	11	9	53	4.8	5.9	5	7
10	Tiwari, A.K.	11	10	214	19.5	21.4	8	11

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

Citation Analysis

To obtain the citation metrics for the retrieved data, we used Harzing's Publish or Perish software. Data from the Scopus database was imported into this software to generate the citation metrics. As of April 26, 2022, Table 6 summarises the citation metrics for the retrieved documents. The summary covers the total number of citations and the number of citations by year, per paper, and author.

Table 6
Citations Metrics

Metrics	Data
Publication years	2013-2022
Citation years	10 (2013-2022)
Papers	2249
Authors	159
Citations	18780
Citations/year	4695.00
Citations/paper	8.35
Citations/author	118.11
Papers/author	14.14
Authors/paper	0.07
h-index	60
g-index	89
hI, norm	33
hI, annual	8.25
hA-index	33

Keywords Analysis

VOSviewer, a software application for creating and visualizing bibliometric networks, was used to map the authors' keywords. Figure 3 depicts a network visualization of the authors' keywords, with colour, frame size, font size, and connecting line thickness employed to highlight the links between the keywords. Keywords of the same colour, for example, were frequently included together. Thus, after excluding the main search query keyword cryptocurrency, the colours of volatility, currency, and electronic commerce (green), Blockchain, smart contract/s, and consensus (red), electronic money, financial markets, and forecasting (blue) are similar in this analysis, indicating that these keywords are closely linked and frequently co-occurred.

Visualization Map

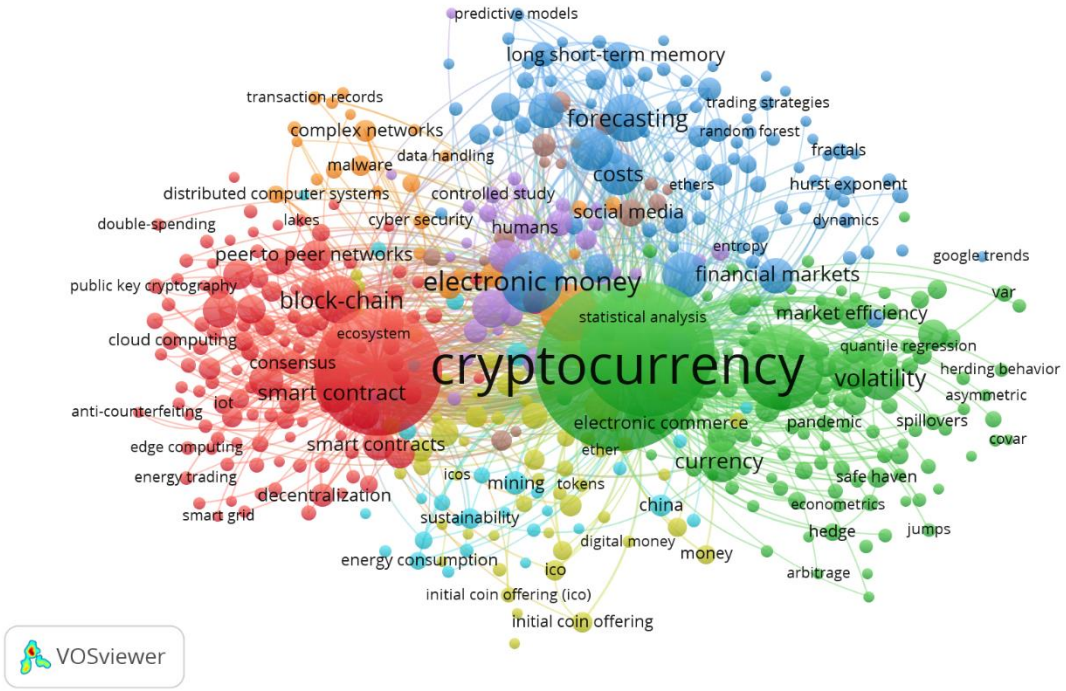

Figure 3: Network visualization map of the author keywords

Meanwhile, after excluding core keywords listed in the search query: TITLE-ABS-KEY (cryptocurrency) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "j")) among six keywords with the highest occurrences are Bitcoin, Blockchain, Cryptocurrencies, Electronic Money, Ethereum, Blockchain. Meanwhile, Smart Contracts, Financial Markets, and the Internet of Things are among the bottom three keywords on search queries for cryptocurrency. Table 7 displays the top 13 keywords used in cryptocurrency studies.

Table 7
Top 17 Keywords

	Keyword	Total Publications (TP)	%
1	Cryptocurrency	1187	27.7
2	Bitcoin	781	18.2
3	Blockchain	686	16.0
4	Cryptocurrencies	288	6.7
5	Electronic Money	201	4.7
6	Ethereum	132	3.1
7	Blockchain	92	2.1
8	Forecasting	92	2.1
9	Investments	78	1.8
10	Volatility	78	1.8
11	Costs	74	1.7
12	Machine Learning	73	1.7
13	Currency	72	1.7
14	COVID-19	68	1.6
15	Smart Contract	66	1.5
16	Article	59	1.4
17	Security	55	1.3
18	Deep Learning	52	1.2
19	Smart Contracts	52	1.2
20	Financial Markets	51	1.2
21	Internet Of Things	51	1.2

Discussion

This study examined key patterns in global cryptocurrency studies from 2013 to 2022, from the first article on the subject to the most recent full year. A bibliometric review of 2,249 Scopus articles was created. Thus, the papers on this research issue identified the evolution of publication, document and source formats, document languages, subject areas, the most productive countries, the most productive authors, citation metrics analysis, and thematic areas. As a result, a bibliometric review of cryptocurrencies was conducted to investigate what has been known thus far and what avenues further scholars may pursue in the future on this topic.

Our research found that English (96.6 percent) remained the most widely utilized language in all published papers since it is universally recognized as a literary language. Only 3.4 percent is written in a language other than English. According to scholars at the University of Hawaii's Globalization Research Center, international scientific publishing is critical to linguistic globalization, in which some languages become dominant over others (Steger, 2003). As a result of this trend, English has far surpassed other languages as the lingua franca of academic publishing. However, there are notable disparities amongst disciplines within this global trend of anglicization of academic publishing. There is a strong trend toward English-language publication, but it is more common in the hard sciences than in the humanities or social sciences (HSS). Compared to major languages such as French, German, and Spanish, Ammon (2006) stated that English is "by far the favoured language in the social sciences and the

humanities." We anticipate that the tendency will continue because English is recognized as a scholarly academic language.

382 publications were released in the United States of America (US), followed by China (300), the United Kingdom (UK) 225, India 154, Russia 124, Australia 120, Italy 102, and South Korea 101. Countries such as Italy, Great Britain, and Germany ranked first in research and associated publications throughout the nineteenth and early twentieth centuries. In the early twentieth century, the United States established dominance for over ninety years. China began to consolidate its position in the mid-1990s. China published nearly 426,000 papers in 2016, accounting for 18.6 percent of all studies indexed in Elsevier's Scopus database. On the other hand, approximately 409,000 studies were published in the United States. Overall, the United States was placed first in total citations by region, with 6,854 citations, followed by China (5,818) and the United Kingdom (5,729). Meanwhile, among the Top 8 countries with the most citations, Italy (1,618), India (1,244), and Russia (739) were the bottom three with the fewest citations.

The number of scientific papers published yearly had increased, particularly in the recent six years (2013-2021), when 2,158 articles were published, accounting for almost 96 percent of contributions to this research topic. Furthermore, throughout the last ten years, study on cryptocurrencies has accumulated from Economics, Econometrics, and Finance, followed by Computer Science, Business, Management, and Accounting (Top 3 Cryptocurrency Topics) to Decision Sciences, Physics, Astronomy, and Materials Science in the Bottom 3. This demonstrated how relevant and crucial cryptocurrency is to academics worldwide.

Six of the top ten cryptocurrency authors are Europeans (Corbet et al.), two are Arabs (Bouri and Naeem), and one is an Indian (Tiwari). They are among the top scholars in this field, having at least eleven papers on cryptocurrency studies. The total number of citations indicates how many times other journals have cited other publications in Scopus. These researchers employ cryptocurrency-related keywords such as bitcoin, Blockchain, cryptocurrencies, electronic money, Ethereum, Blockchain, forecasting, investments, and volatility.

Finally, 2,249 papers were written throughout the last ten years (2013–2022), with 159 contributors and 18,780 citations. The average number of citations per year, publication, and author is 4695, 8.35, and 118.11, respectively. Papers per author accounted for around 14.14, with an author per paper accounting for 0.07. On April 26, 2022, the h-index was 60, and the g-index was 89. With this tendency, we estimate that citation measures will alter dramatically over the next five years.

Conclusion

The bibliometric analysis of the scientific literature on cryptocurrencies reveals a rapidly evolving field characterized by significant growth and diversification. The global adoption of cryptocurrencies, driven by technological advancements and increasing institutional interest, underscores their potential to transform traditional financial systems. The burgeoning cryptocurrency market in Malaysia reflects broader regional trends, supported by favourable regulatory environments and growing technological adoption. The analysis highlights the dynamic nature of the cryptocurrency ecosystem, with various factors influencing market behaviour and adoption rates.

Despite the extensive research conducted to date, several areas warrant further investigation. Future studies should focus on the long-term sustainability of cryptocurrencies, the environmental impact of mining activities, and the integration of artificial intelligence in cryptocurrency trading. Additionally, the potential coexistence of central bank digital currencies with decentralized cryptocurrencies presents a promising avenue for research. By addressing these gaps, researchers can provide deeper insights into the future trajectory of cryptocurrencies, aiding policymakers, investors, and academics in navigating this complex and rapidly changing landscape.

Cryptocurrency's current drawbacks could be remedied by technological developments, such as the ability to lose one's digital wealth in the event of a computer catastrophe or the hacking of a virtual vault. To overcome the underlying paradox that bedevils cryptocurrencies, more regulation and government oversight will be inclined, eroding their existence's core assumption. This will be a more difficult challenge to overcome. The number of businesses that accept cryptocurrencies has constantly climbed, but they are still a small minority in the overall population. Cryptocurrencies must first obtain significant consumer approval before they can be widely used. There is a good chance that most people won't want to use them because they're more sophisticated than regular currency.

A cryptocurrency seeking public acceptance may need to meet a variety of criteria. It must be mathematically sophisticated (to prevent fraud and hacker assaults), decentralized, with enough consumer protection, and maintain user anonymity without facilitating tax evasion, money laundering, or other illegal acts. Is it feasible for the most popular cryptocurrency to have characteristics between severely controlled fiat currencies and today's cryptocurrencies in a few years? While that prospect seems improbable, it is undeniable that Bitcoin's ability to overcome its current issues may influence the future of other cryptocurrencies.

The fundamental advantages of cryptocurrency, such as decentralization and transaction secrecy, have made it a popular currency for various criminal operations, such as money laundering, drug trafficking, smuggling, and weapon procurement. This has piqued the interest of major regulatory and other government organizations such as the Financial Crimes Enforcement Network (FinCEN), the Securities and Exchange Commission (SEC), as well as the FBI and the Department of Homeland Security (DHS). We can guess what value Bitcoin may have for investors in the future months and years, but the reality is that it is still a new and speculative investment with little history on which to base forecasts.

This bibliometric analysis is a significant effort to provide the most comprehensive retrospective of the evolution of current trends and the development of cryptocurrencies. The study will assist policymakers, regulators, and academic scholars understand cryptocurrency and identify areas of interest. A decade ago, there was a noteworthy increase in studies, and the subject is fast growing. This review traces convergent tendencies in cryptocurrencies and maps the intellectual relationships among the essential works of the last ten years.

We could track the evolution of the field's seminal work, prolific authors, affiliated nations, productive publications, keyword usage, and work interrelationships through bibliometric analysis. Cryptocurrency research is still in its early stages in developing countries, particularly

in Africa. Because cryptocurrency is still a relatively new issue, many more studies have yet to be reported. More research is needed, particularly on its public acceptance, security concerns, risks, and potential.

Theoretical and Contextual Significance

This study contributes to the theoretical understanding of cryptocurrency adoption by providing a comprehensive bibliometric analysis of the existing literature. By mapping the intellectual landscape and identifying key trends, this research enhances our knowledge of the factors driving cryptocurrency adoption and the evolution of this field. Contextually, the study highlights the dynamic nature of the cryptocurrency ecosystem, particularly in Malaysia, and underscores the importance of regulatory environments and technological advancements in shaping market behaviour. These insights are crucial for policymakers, investors, and academics in navigating the complexities of the cryptocurrency landscape and fostering informed decision-making.

Limitation and Study Forward

Our investigation has a few limitations due to the database's limits. Thus, despite Scopus being one of the largest databases, there are still unindexed articles, implying that publications in these journals may have been overlooked. Additionally, this research focused exclusively on cryptocurrency studies, with the paper title as the focal point. Other important literature on cryptocurrencies, even if it does not directly use the term in the title, was thus omitted. Additionally, it is vital to remember that no search query is 100 percent accurate; false positive and negative results occur. Future studies could broaden the scope of the search query to include additional databases, such as Web of Science and Google Scholar. Combining these three databases could result in an increased level of excitement and relevance.

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