

Research on Domestic "Blockchain + Credit Investigation" Based on CNKI Database Hot Spot and Trend Analysis

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Abstract: "Blockchain + Credit investigation" has good prospects. In order to explore the research hotspots of "Blockchain + credit investigation" in China, and analyze its research trends, and grasp its research trends, this paper selects CNKI database as the data source, based on the CiteSpace visual analysis software and bibliometric method, through the number of documents, institutions and authors analysis, draw the knowledge map of "blockchain + credit investigation", identify research hotspots and research frontier, and provide support for relevant researchers to better grasp the research focus and research direction in this field, and put forward suggestions based on the research results. Corresponding suggestions in order to promote the development of "Blockchain + credit investigation" in China.

Keywords: Blockchain, Credit Investigation, Bibliometrics.

1. Introduction

Since 2009, the virtual currency represented by Bitcoin has gradually been recognized by the international market, and the blockchain technology as the underlying technology of Bitcoin has also been known to the public, and A huge wave has been set off in various industries. Blockchain technology plays an important role in promoting data sharing, reducing operating costs, and building a trusted system, which will have an important impact on the future social credit landscape. "Blockchain + credit investigation" refers to the credit investigation method based on blockchain. Traditional credit investigation has problems such as information segmentation, privacy security, and data right confirmation. Blockchain, with its features of decentralization, traceability, and unforgeability, can solve the problems in the development of the credit. The research on "blockchain + credit investigation" start in 2016. At present, scholars mainly focus on theoretical innovation, technology research and application research.

2. Data Sources and Methods

2.1. Data sources

This article uses CNKI as the main database, the subject are set as "blockchain" and "credit investigation", and the journal sources are "Peking University Core" and "CSSCI", there are a total of 91 articles. After data cleaning and sorting, and literatures that are not related to the research subject and duplicate literatures are eliminated, and 40 valid samples are finally obtained (as of October 1, 2022).

2.2. Research methods

Bibliometrics is to quantify documents to describe the

development contours of related topics. With CiteSpace as the main analysis tool, and the retrieved data as the research object, the aims are to analyze distribution of the number of documents, research institutions, core authors. CiteSpace is used to count keywords. On this basis, a knowledge map is further drawn, which is used as an analysis basis for the research hotspots and development trends of blockchain in the field of credit investigation.

3. Visual Analysis of Knowledge Graph of "Blockchain + Credit Investigation"

3.1. Analysis of literature quantity

The number of documents and their changes can reflect the development trend of this research field and the attention of experts and scholars to a certain extent (Wang et al., 2018). The article draws a line graph by analyzing the sample literature, as shown in Figure 1. The line chart shows that relevant literature began to appear in 2016, and increased in 2018. In 2020, the year of rapid growth, declines in 2021 and 2022. In 2016, the Ministry of Industry and Information Technology released a report on the development of blockchain, and since then the blockchain has been widely used in China. China began to attach importance to the integration of blockchain and various industries, so Blockchain has gradually applied in the field of credit. Related literature began to appear gradually in 2018, and then rose rapidly, indicating that blockchain has attracted a lot of attention in the field of credit investigation, but in general, the number of documents is relatively small.

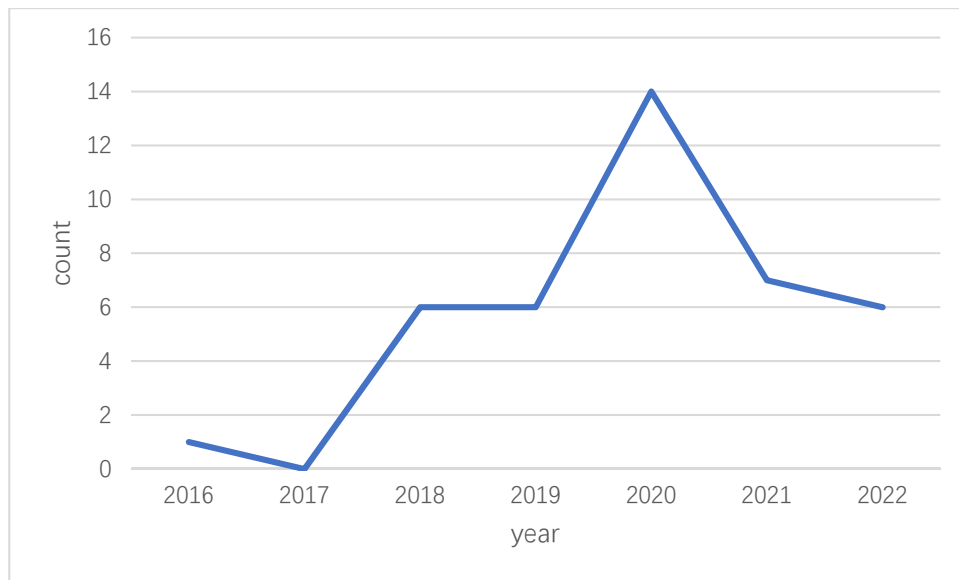


Figure 1. Distribution of the number of "blockchain + credit investigation" journals in China

3.2. Analysis of Research Institutions

If there are many research institutions in a field, it means that this field is a very popular research field, so the analysis of research institutions is necessary and meaningful(Liu et al., 2020). There are a total of 63 institutions, due to the large number of institutions involved, only some institutions are

listed in this paper, as shown in Table 2. It can be seen that there are many research institutions, but The number of papers published by various research institutions is relatively small, and the distribution is relatively scattered, indicating that the application of blockchain in the field of credit investigation is researched. It has attracted the attention of many scholars.

Table 1. Distribution of research institutions in China

Institution	count	percentage
Shanghai Business	2	3%
People's Bank of China Shenyang Branch	2	3%
Tehua Postdoctoral Research Workstation	2	3%
Southeast University	1	2%

3.3. Analysis of core authors

Author analysis can identifies key authors in a discipline or field. A total of 87 authors were extracted, and some published authors were listed, as shown in Table 2. It can be seen that the authors with the most papers are Zhang Jing and Jin

Bingbing, who have published 2 papers in total, followed by Ding Ling, Ren Jie, Ni Nan, Fu Xiaokang, Feng Xiaofan, Liu Shengfa, Liu Kanglei, etc. The research authors of blockchain in the field of credit investigation are relatively scattered. There is no A stable cooperative research group is formed, and scholars lack communication and cooperation with each other.

Table 2. Distribution of authors in the field of "blockchain + credit investigation" in China

authors	count	percentage
Zhang Jing	2	2%
Jin Bingbing	2	2%
Ding Ling	1	1%
Ren Jie	1	1%
Ni Nan	1	1%
Fu Xiaokang	1	1%
Liu Shengfa	1	1%
Liu Kanglei	1	1%

3.4. Analysis of research hotspots

keywords are a high-level summary of a paper, and high-frequency keywords refer to relevant keywords that appear frequently in relevant literature. The analysis of keywords with high frequency and high centrality can reflect the research hotspots in this field(Liu et al., 2020). the co-occurrence frequency can express the correlation between keywords. The analysis of co-occurrence networks is very important for understanding the research topic(Wei, 2009).

101 keywords were obtained. This paper selects the keywords whose frequency is greater than 1 or whose centrality is greater than 0. As shown in Table 3. A keyword map, as shown in Figure 2. Combining Table 3 with Figure 2, it can be seen that the credit investigation system, online finance, personal credit investigation, social credit system, smart contracts, information sharing, privacy protection, big data credit investigation, which the frequency and centrality are relatively high.

Figure 3. High-frequency keywords in the field of "blockchain + credit investigation" in China

Keywords	Count	Centrality	Year	Keywords	Count	Centrality	Year
Blockchain	23	0.74	2016	Information sharing	3	0.12	2020
Blockchain technology	11	0.61	2018	Privacy protection	3	0.05	2019
Credit investigation	7	0.38	2018	Credit report	2	0.05	2021
Credit investigation system	5	0.21	2018	Internet credit	2	0.01	2020
Internet finance	4	0.21	2018	personal credit scoring system	1	0.01	2018
Personal credit	4	0.3	2020	Credit Information Trading System	1	0.07	2021
Social credit system	4	0.07	2019	Credit Hebei	1	0.04	2020
Smart contract	4	0.17	2019	Credit management	1	0.04	2019
Big data credit investigation	3	0.1	2018				
Decentralization	3	0.08	2018				



Figure 2. Graph of high-frequency keywords in the field of "blockchain + credit investigation " in China



Figure 3. Time zone map of high-frequency keywords for research in the field of "blockchain + credit investigation" in China

3.5. Research Frontiers and Development Trends

Analysis of the literature, keywords and time zone views of blockchain in the field of credit investigation show that the keyword "smart contract" has only appeared 4 times in the keyword analysis. However, it is located close to the center in the keyword graph. secondly, through the analysis of the time zone map, it can be concluded that from 2019 to 2020, the keywords are mainly concentrated on the credit system, social credit and other topics. In 2021, the credit report suddenly appeared, credit information data", and the frequency is relatively high. The blockchain + credit investigation" began to appear in 2019, and the relevant research results are still relatively few, but the country attaches great importance to the block chain.

4. Conclusion

The visual analysis of the core journals in the field of blockchain and credit investigation. It can be found that the

research on the blockchain in the field of credit investigation in china is relatively small. The research in the credit field is theoretical research stage, and there is a lack of practical research, so the blockchain still has huge development space to further explore.

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