

Original Research Article

An academic mapping of blockchain research in the field of journalism and communication

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Abstract: As intelligent technologies rapidly evolve, the field of journalism and communication faces emerging opportunities and challenges. Blockchain, in particular, exerts a profound influence on the theoretical development, practical advancement, and application expansion within this domain due to its unique features. This study conducts a visualized analysis of core literature from China National Knowledge Infrastructure and the Web of Science, to summarize research hotspots and thematic evolution trends of blockchain in the field of journalism and communication. The findings reveal that, in terms of theoretical development, blockchain continues to shape a “Co-creation ecosystem of value”, transitioning from efforts to ensure news authenticity to conceptual interpretations of blockchain journalism and media. In terms of practical advancement, blockchain fosters a “Co-maintenance ecosystem of trust” by promoting the reconstruction of platform trust management systems and supporting mechanisms for combating fake news and managing rumors. In terms of application expansion, blockchain facilitates the construction of a “Co-protection ecosystem for copyright,” evolving from a focus on text copyright protection to short video copyright verification and data security protection.

Keywords: Blockchain; Journalism and communication; Citespace; Fake news; Copyright protection

1. Foreword

The *14th Five-Year Cultural Development Plan* explicitly states the need to strengthen digital copyright protection and “Encourage capable institutions and organizations to build blockchain-based copyright protection platforms,” thereby underscoring the importance of blockchain in copyright protection. Therefore, the development of blockchain technology holds significant value for research and application in information production, distribution, and copyright protection within journalism and communication.

Since 2017, research on blockchain in journalism and communication, particularly application-oriented studies, has garnered increasing academic attention. Blockchain has generated a significant impact on news production, editing, and archiving, leading to the emergence of novel research topics. Previous studies have primarily explored the influence and transformation of blockchain on specific micro-level aspects of journalism and communication and have highlighted practical challenges. However, a comprehensive and visualized macro-level analysis remains lacking. Therefore, this study adopts bibliometric methods to review the current state and research hotspots of blockchain applications in journalism and communication, aiming to provide theoretical references for future research in this area.

2. Visualization analysis of blockchain applications in journalism and communication

2.1. Annual publication volume

Since Satoshi Nakamoto proposed the concept of blockchain, scholars have increasingly focused on its theoretical logic, technical principles, and associated challenges. Blockchain has gradually entered the field of jour-

nalism and communication, and interest in its application to news production and dissemination has continued to grow. The overall trend in publication volume related to blockchain and journalism from 2017 to 2024 shows an upward trajectory. This trend can be divided into three distinct stages: (1) Initial development stage (2017–2018): During this period, research emerged from a virtually nonexistent base, with publication volume steadily increasing; (2) Rapid growth stage (2018–2020): According to the line graph trend, this period witnessed a significant surge in application-oriented research on blockchain in journalism and communication. The number of publications continued to grow from 2018 to 2019, while a marked acceleration occurred between 2019 and 2020, reaching a peak; (3) Stable growth stage (2020–2023): In this stage, the rate of growth in publication volume began to slow, and the level of research activity remained relatively steady. Overall, research enthusiasm for blockchain in the field of journalism and communication has shown a consistent upward trend and remains a focal point of contemporary scholarly attention.

2.2. Analysis of authors and publication volume

The top ten authors include Jianzhong Zhang, Quanzhong Guo, Barbara Guidi, Gautam Srivastava, Xiaohe Tan, Guoming Yu, Andrea Michienzi, Qian Ye, Anbin Shi, and Ashutosh Dhar Dwivedi with publication frequencies ranging from two to six articles. The year 2018 marked a key starting point for this research area, while 2020 saw the highest concentration of contributing authors, indicating a significant phase of scholarly focus.

2.3. Analysis of contributing institutions

Using CiteSpace to analyze institutional contributions, institutions with the same name were merged, resulting in the visualization shown. Institutions are displayed in elliptical form, with font size indicating the level of research involvement. Overall, the top five institutions are: Communication University of China, Renmin University of China, Tsinghua University, Nanjing University, and Zhengzhou University.

From the distribution of institutions, universities account for the majority of publications, particularly departments related to journalism and communication. In contrast, media organizations such as newspapers and broadcasting stations contributed relatively fewer publications, including Xinhua Net, Qilu Evening News, Shandong Radio and Television Station, and Haikou Radio and Television Station.

3. Analysis of keywords and research hotspots in blockchain and journalism and communication studies

3.1. Keyword co-occurrence network

In the field of blockchain application research in journalism and communication, a keyword co-occurrence network was constructed by setting relevant keywords. A total of 321 nodes were generated, where larger nodes indicate a higher frequency of occurrence.

Research in this field is centered around “blockchain” and mainly explores topics such as “new media,” “media industry,” “journalism,” “artificial intelligence,” and “copyright protection.” “Decentralization” is primarily associated with news production, fake news, transparency, and privacy protection. “Media industry” focuses on technological innovations driven by blockchain in media contexts. “Journalism” addresses topics such as news media, spread models, blockchain media, and news formats. “Media convergence” is closely related to themes such as technological innovation, value transmission, and the concept of “blockchain+.” Research on “new media” highlights issues related to self-media, social media, short videos, and artificial intelligence. Studies on “copyright protection” mainly focus on news copyright, smart contracts, and copyright law.

3.2. Keyword clustering map

Cluster analysis facilitates a rapid understanding of topic distributions within a research field. As shown in Figures 5 and 6, a total of 15 clusters were identified. These clusters were further categorized into three thematic areas: at the level of theoretical development, blockchain continues to shape a “co-creation ecosystem of value”; in terms of practical advancement, it supports the construction of a “co-maintenance ecosystem of trust”; and in application expansion, blockchain promotes the development of a “co-protection ecosystem for copyright.”

4. Thematic evolution of blockchain application research in journalism and communication

4.1. Early Development Stage (2017–2018)

The main keywords in this period were “fake news detection,” “copyright protection,” and “online public opinion.” Research during this stage focused on three primary aspects. First was the role of blockchain technology in ensuring the authenticity of news. Studies discussed both theoretical logic and practical applications to illustrate how blockchain enhances news authenticity, using its inherent features to protect truth in journalism. Based on this, scholars proposed detection and prevention mechanisms for fake news to further reinforce news credibility and reliability. The second focus was on copyright protection. Research explored how blockchain technology can be applied in specific stages of copyright maintenance and what roles it can play at each point. Theoretical analyses and application strategies addressed concrete issues in news copyright protection. Overall, this stage emphasized the application of blockchain’s key features to support authenticity and copyright integrity in journalism, promoting continuous improvement in news production processes and raising practical standards in journalism.

4.2. Mid-Stage Diffusion (2018–2022)

The primary research focuses during this period included “decentralization,” “blockchain media,” “artificial intelligence,” “blockchain news platforms,” “news content production,” and “short video.” Blockchain technology expanded both theoretical discussions and practical applications in the field of journalism and communication. New research topics emerged in areas such as media construction, platform development, and content production. The application of blockchain technology to the practical processes of journalism became a widely explored subject during this stage. Overall, the discussion in this period extended the integration of blockchain and journalism to include platform development and content management. Researchers proposed the concept of blockchain media and examined the specific roles blockchain plays in the content production process, reflecting a more comprehensive focus on the integration of blockchain technology across the entire field of journalism and communication.

4.3. Cutting-Edge Innovation Stage (2022–2023)

During this stage, major keywords included “fake news,” “media ecology,” “communication,” “new media,” “digital empowerment,” and “metaverse.” As technology advanced, research interests shifted accordingly. Rather than being limited to the singular model of “blockchain+,” scholars increasingly explored the integration and convergence of blockchain technology with other emerging technologies, further driving its application in the field of journalism and communication. While advancing the development of journalism itself, research also delved into various forms of new media and their intersection with blockchain. These efforts continuously deepened the investigation of technological innovation and theoretical evolution in journalism application stud-

ies. They expanded the depth of blockchain application scenarios within journalism and promoted the integration and innovative development of the journalism and communication discipline.

5. Research conclusions and outlook

5.1. Research conclusions

5.1.1. Blockchain and journalism application research exhibits a strong temporal orientation

Since the concept of blockchain was introduced, it has gradually entered the application landscape across various fields. Research on blockchain in journalism and communication began to emerge around 2017, closely following the development of the times and the discipline. In the early stages, studies primarily focused on the integration of blockchain with journalism, aiming to use blockchain as an effective emerging technology to ensure news authenticity. However, research did not remain confined to the field of journalism. As technology advanced, academic inquiry expanded to include topics such as AI-generated journalism, the conceptual definition of blockchain media platforms, and theoretical elaboration. With the rapid development of new media, research further explored blockchain's practical applications in new media platforms, including short videos, online news content production, and media convergence. In recent years, studies have continued to broaden the scope of blockchain application topics, such as integration with the metaverse, digital empowerment, and the construction of county-level integrated media centers. These research directions are strongly aligned with contemporary trends, constantly exploring new paths for disciplinary development and enhancing the theoretical and scientific foundation of journalism and communication studies.

5.1.2. Core research topics on blockchain in journalism and communication center around "Copyright protection," "fake news," "new media," and "media convergence."

By analyzing keyword frequencies, this study identifies the core themes in blockchain application research within the field. These can be categorized into three areas: At the level of theoretical development, blockchain continues to shape a "co-creation ecosystem of value," evolving from discussions on ensuring news authenticity to conceptual elaborations of blockchain journalism and media. At the level of practical advancement, it fosters a "co-maintenance ecosystem of trust," driving the reconstruction of platform trust mechanisms and reinforcing systems for fake news prevention and rumor governance. At the level of application expansion, blockchain promotes the formation of a "co-protection ecosystem for copyright," evolving from a focus on text-based copyright protection to short video copyright confirmation and data security.

5.1.3. The evolution of blockchain and journalism application research can be broadly divided into three stages

① Early Development Stage, with key topics such as "fake news detection," "copyright protection," and "online public opinion." Research at this stage focused on applying blockchain's key features to enhance authenticity and copyright protection in journalism, thereby improving specific processes and elevating the level of journalistic practice. ② Mid-Stage Diffusion, where the primary focus shifted to "decentralization," "blockchain media," "artificial intelligence," "blockchain news platforms," "news content production," and "short video." As media continued to develop, research explored how blockchain could be further integrated into journalism, broadening both the theoretical scope and practical reach of journalism research, and enhancing the discipline's applicability and scientific foundation. ③ Cutting-Edge Innovation Stage, featuring keywords such as "fake news," "media ecology," "communication," "new media," "digital empowerment," and "metaverse." Studies during this stage focused on deepening the application of blockchain technology in journalism and communication, promoting integration and innovation within the discipline.

5.2. Research outlook

Blockchain technology, with its distinctive features, has significantly impacted the practical applications within the journalism and communication field. Many conventional practices in the sector are rapidly being reshaped, raising the need to examine the internal logic driven by technological advancement. In areas such as copyright protection, ensuring news authenticity, and preventing fake news, blockchain can offer substantial improvements. However, new challenges may also emerge. One critical issue involves addressing the ethical risks that may arise when blockchain is integrated into journalism processes. For example, in the context of short video copyright protection, questions such as “Who is the rightful subject of protection?” and “Under what conditions can ownership be accurately determined?” remain to be resolved. Therefore, future studies could focus on specific scenarios where blockchain is embedded in various stages of journalism, exploring the mechanisms of integration and assessing their feasibility and scientific soundness.

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