



Blockchain-based Market Transaction and Islamic Economics: A Bibliometric Analysis

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ABSTRACT

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The advent of blockchain technology has led to an exponential growth in the digital world. This study intends to categorize dominant topics related to find out what concepts and dominant themes are massively discussed in studies related to blockchain-based market transaction and Islamic economics. This study was a systematic literature review using the Scopus database from year 2020 to 2023, as the main reference source to consider that this database have a high reputation in the international scientific field. The steps of study was carried out by summarizing various previous studies related to blockchain-based market transaction and Islamic economics in order to find strategies and various in the massive discourse around financial technology. The study found that there were four dominant topics related to this research were: cryptocurrency; market; barrier; and network. This study will contribute to enrich the concepts and dominant themes were massively discussed in studies related to blockchain-based market transaction and Islamic economics.

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INTRODUCTION

The development of the digital world has become increasingly massive with the presence of blockchain technology (Caradonna, 2020; Gad, et. al., 2022; Habib, et. al., 2022). One of the most renowned technological breakthroughs brought by this revolution is the blockchain system which is regarded as a blueprint for a new economic system (Hughes, 2018; Monrat, et. al., 2019; Muheidat, et. al., 2022). This blockchain technology is unique because of its decentralized concept and ensures safer digital transactions of any kind (Maria & Widayati 2020; Sulchan, et. al., 2021; Rozas, et. al., 2021; Ellahi, et. al., 2023). From a decentralization perspective, the system necessitates the use of digital currency, nevertheless the issue lies in the fact that blockchain technology will decentralize the entire transaction system, startling all firms that continue to utilize the antiquated method (Dinh et. al., 2018; Mukherjee & Pradhan, 2021; Pournader et. al., 2020; Rejeb, et. al., 2020; Zulkarnaen, et. al., 2021). The system simply becomes a hub of all transaction data, transparent to all users, omitting the role of third-party such as banks (Goodell, et. al., 2021; Muheidat, et. al., 2022; Ghosh, et. al., 2023).

Meanwhile, almost every side agrees that the blockchain system is an unstoppable technological advancement (Zhu, et. al., 2020; Aoun, et. al., 2021; Kingsly, 2022). This is supported by the fact that in 2019, a phenomenon called “Society 5.0” emerged, where social aspects of life crossed the boundary toward the online world (Zhu, et. al., 2020; Aoun, et. al., 2021; Arcenegui et. al., 2021; Carayannis & Jancelewicz, 2022). As a result, starting from March 2015, the volume of daily transactions of 200.000 Bitcoin, which is worth at least USD 50 million in real currency rate, reached the value of USD 3,5 billion (Godin & Terekhova 2019; Smuts & Merwe, 2022; Hasan & Sony, 2023). Even in this new normal period bitcoin investment decline has an equilibrium moment, it can be seen in figure 1,



Figure 1. the Daily transactions of Bitcoin year 2022

Further in 2021, Non-Fungible Token or NFT stole worldwide attention, causing significant growth in its market (Tanwar et. al., 2019; Ali, et. al., 2020; Ante, 2021). NFT sales reached USD 34.530.649,86 in year 2021 with a great leap compared to the previous year 2020 (Wang et. al., 2021).

Previous study has shown theories and concepts about blockchain-based transaction systems have applied to the rising many features. Bauvars (2021) applied The framework for the blockchain system to assess the blockchain technology to settle securities. Monrat, et. al., (2019) revealed that besides cryptocurrency, blockchain technology can be used in many features such as financial and social services, risk management, health facilities, and so on. Colomo-Palacios, et, al., (2020a) revealed that blockchain as an assessment from an evolutionary perspective technology has developed in a broader scope than cryptocurrency and asset management. While (Kim, et. al., 2021) stated that blockchain architecture can be used also to build a very reliable network Internet of things. In line, Plathottam, et. al., (2023) revealed that Internet of Things (IoT) networks usually consists of many sensors and actuators.

Blinova, et. al., (2022) stated that blockchain-based non-fungible token (NFT) transaction as an accounting entity requires further studies. Blinova, et, al., (2022) revealed that the emergence of digital economy and proliferation of online activities contributed to the creation of new technologies which has been proven that NFT trade has strong connection with bitcoin system. Çalli (2021) stated that that technological advancement is snowballing toward financial sector can not be ignored. While Dowling (2022) found that the fluctuation of cryptocurrencies affected the pricing of NFT. Further, Guner Ozenen, et. al., (2021) suggested that the innovation brought by blockchain technology could disturb the conventional business model by eliminating the need for centralized and third-party accounting. Sakiz & Gencer (2021) also argued that one of the first market using the blockchain-based innovation was a market of intellectual properties called NFT. Mukhopadhyay & Ghosh (2021) explained that the NFT industry, although experiencing rapid growth using innovation, technology and decentralization, has its own flaw. In addition, Thakur et. al., (2020) and (Karandikar, 2021) stated that the blockchain technology has positive aspects that need to be studied.

Based on this, researchers are interested in conducting studies in order to find out what concepts and dominant themes are massively discussed in studies related to blockchain-based market transaction and Islamic economics. This has urgency because it can be used as a reference in looking at the massive discourse in financial technology by using blockchain-based market transaction.

RESEARCH METHOD

Studies related to Blockchain-based market transaction and Islamic economics was carried out using a descriptive analysis model as well as a bibliometric analysis method. Bibliometric analysis is a conclusion-drawing system involving multi-phase process. Its use to analyse an indispensable statistic tool to map the state of the art of

scientific knowledge and identify essential information for various purposes (Mohadab, Bouikhalene, and Safi 2020; Oliveira et al. 2019). So, it enables to unlock the evolutionary nuances of a specific scope to find some clusters (Donthu, 2021). At the last, this method uses a set of structured in-depth interview relating to a specific topic, and the feedback will converge into a general consensus (Naisola-Ruiter, 2022). This method utilizes descriptive approach to obtain reliable, valid and explicit informations from experts of respective fields.

The descriptive analysis using the bibliometric analysis method was carried out by utilizing the VOSviewer application as a data processing tool. The use of VOSviewer analysis tools because it can simplify the data so that it is easy to analyze with the selected descriptive-qualitative method. The main data source in the preparation of this article is through the Scopus database. Articles and journals sourced from the Scopus database were chosen because they are considered to have a high reputation in the international scientific field. The data collection of articles or journals obtained was then reviewed and reviewed by the authors in order to find the dominant concepts in studies related to Blockchain-based market transaction and Islamic economics.

The purpose that underlies the preparation of this study is to find out the progress, concepts and various scopes of studies related to Blockchain-based market transaction and Islamic economics that have been studied previously. Based on this, this study was directed to conceptualize studies in the development of studies related to Blockchain-based market transaction and Islamic economics which have been previously studied by various researchers in various countries. This systematic literature review is based on a series of methods to keep the study from being too general. In detail, the following are several stages of the research process pursued by researchers in reviewing themes related to Blockchain-based market transaction and Islamic economics.

To construct a systematic methodology in Islamic economics, a philosophical foundation is needed. This is following Monzer Kahf's revealed that economics is economics itself but does not shy from criticizing capitalism and socialism wisdom as something partial (Kahf 2007a) or it can be said that the domain of Islamic economics was Islam itself (Kahf 2007b). By this method, the researcher wants to propose a transaction model in a blockchain-based virtual market, because all units and variables in Islamic economic ideology have the legal framework that is studied and actualized (Ghulamallah, et. al., 2021).

RESULT AND DISCUSSION

Studies related to Blockchain and Islamic Economics has basically been carried out by various authors before. A number of topics or focus of study also means that they have been studied a lot by these authors, especially those that are linear in their studies related to Blockchain and Islamic Economics. Based on the Scopus selected articles data

which processed by the researchers in figure 2, it can be found that several names of the most dominant or massive authors studied the previous themes of Blockchain and Islamic Economics. Matti Mäntymäki is the author with the highest study representation with five studies.

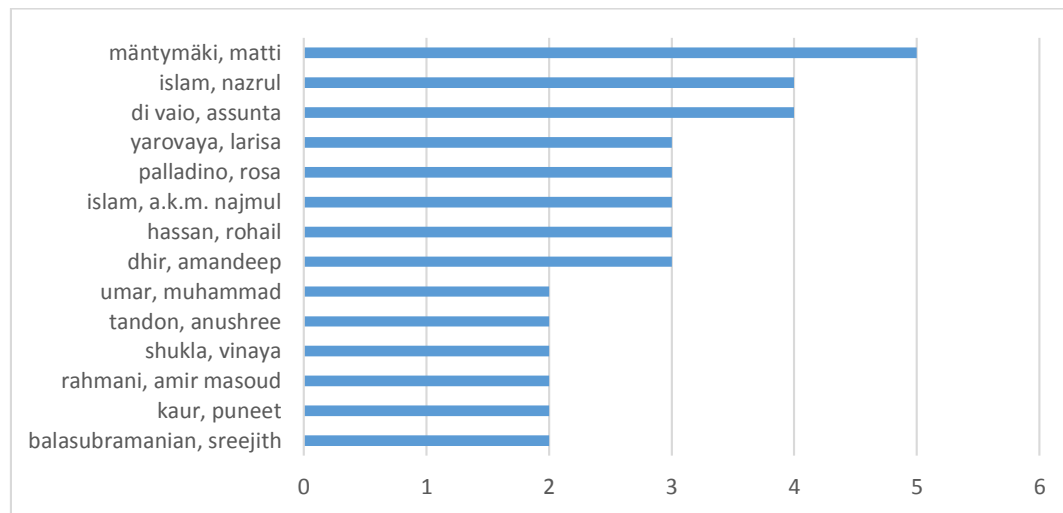


Figure 2. Study on blockchain and Islamic economics by name of authors

Next followed by Assunta di Vaio and Nazrul Islam with four studies and Amandeep Dhir, Rohail Hassan, AKM Najmul Islam, Rosa Palladino, and Larisa Yarovaya with three studies. Finally, there are several names of authors such as Sreejith Balasubramanian, Puneet Kaur, Amir Masoud Rahmani, Vinaya Shukla, Anushree Tandon, Muhammad Umar with the same number of studies, namely two studies. A number of the names of these authors provide a positive value in studies related to Blockchain and Islamic Economics.

Researches concerning blockchain technology were only focusing on its transaction, its relation with cryptocurrencies and the structure of the system itself. Most researches criticized the system's decentralization problem and the difficulties on tracking its circulation. It is arguably true that this mechanism, along with all online transactions with their decentralized form, absent of any authoritative institution, could shock the conventional market. This raised many concerns because up until this time, the right and duty to manage the economy, especially the permit of money printing/making, was always the privilege of government authorities. But blockchain system has many advantages which enable it to bypass the government, both in economic regulations and money making. This can be seen in the figure 3,

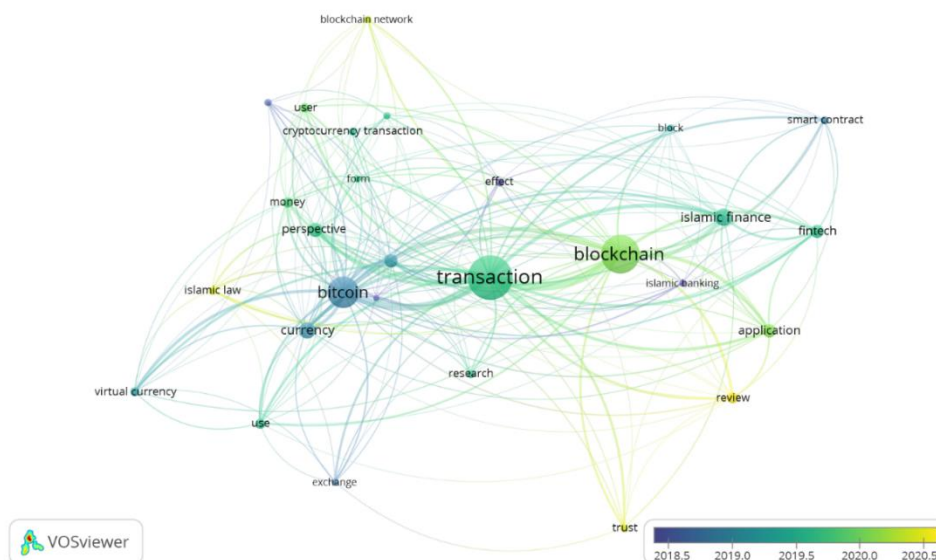


Figure 3. Result of researches concerning on blockchain technology

The next elaboration will review the study of blockchain and Islamic economics based on the field of science or scientific focus. Figure 4 described those studies related to Blockchain and Islamic Economics are dominantly discussed within the scope of Business, Management and Accounting science with a representation of 34%. Furthermore, it can be seen that the next dominant study related to Blockchain and Islamic Economics focused on Decision sciences with a representation of 19%. The next field of science is Economics, Econometrics and Finance sciences with a representation of 12% and followed by the scope of Computer sciences with a study representation of 16% and Social Science with a study representation of 15%. On the other hand, there are 4% of several scientific focuses which also have studies related to Blockchain and Islamic Economics.

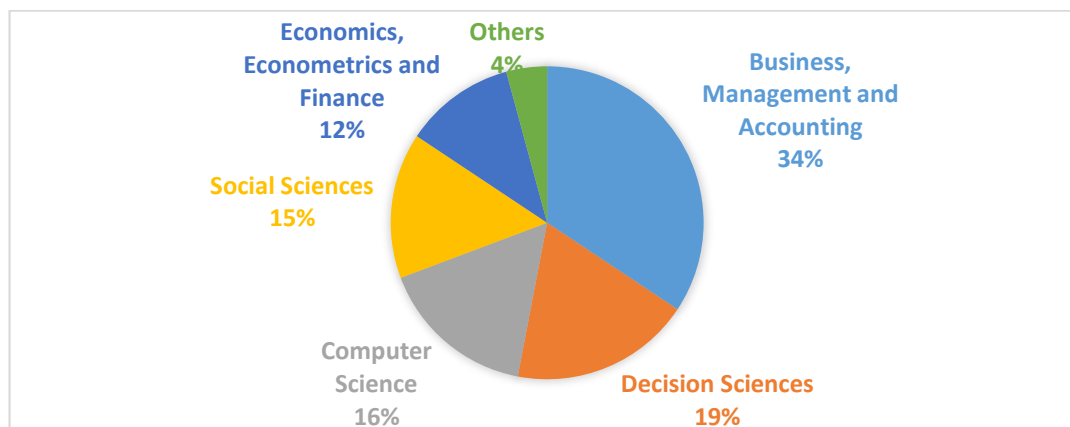


Figure 4. Study of Blockchain and Islamic economics by Field of Science

In addition, the use of VOS viewer analysis tools aims to see how the dominant concepts in the study are related to Blockchain and Islamic economics and also as a data presentation tool. It is believed to be able to present data that is truly relevant in studies related to Blockchain and Islamic economics. Some of the dominant concepts in the study of related themes in detail can be seen in the following figure 5,

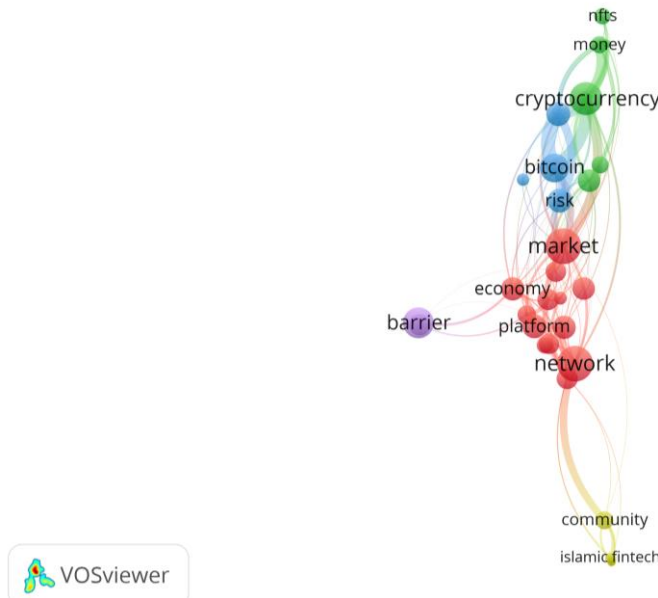


Figure 5. The Relation of Concepts in the Study of Blockchain and Islamic Economics

Looking at the exposure to the data set, it can be understood that in general there are five cluster categorizations in related studies of blockchain and Islamic economics. The cluster distinctions are classified based on the similarity of dominant concepts or keywords between one another. The drawing of the described net indicates the existence of a concept linkage in each cluster. The author tries to study Blockchain and Islamic Economics based on the classification of clusters or dominant concepts as described at table 1,

Table 1. Keywords Categorized by Cluster

Cluster	Concepts	Total
Cluster 1	Economy, Finance, Governance, IoT, Market, Network, Platform, Smart Contract, Sukuk	9
Cluster 2	Crypto Currency, Islamic Perspective, Money, NFTs, Sustainable Development Goals	5
Cluster 3	Bitcoin, Currency, Digital Currency, Risk	4
Cluster 4	Community, Islamic Bank, Islamic Fintech	3
Cluster 5	Barrier, Digitalization	2

The grouping of keywords as stated in table 1 was obtained through the use of minimum number of occurrences of a term 10 times. The method then resulted in 3716 terms and then eliminated to produce 68 articles that met the threshold or were truly relevant to be used in studies related to Blockchain and Islamic Economics. Further, the verification step was taken to narrow the data, this then resulted in 41 selected articles. A number of concepts that have gone through a rigorous verification process are topics that need to be re-examined and developed. This has high urgency because it can provide benefits in the scientific field especially in studies related to Blockchain and Islamic Economics.

The next review was related to concept or themes mapping based on the dominant focus of the study. The distinguishing feature of the most massive concept discussed is shown through the difference in color. The dominant mapping of this concept is based on several mixed indicators in the VOS viewers analysis tool. These indicators are links, total link strength and occurrences.

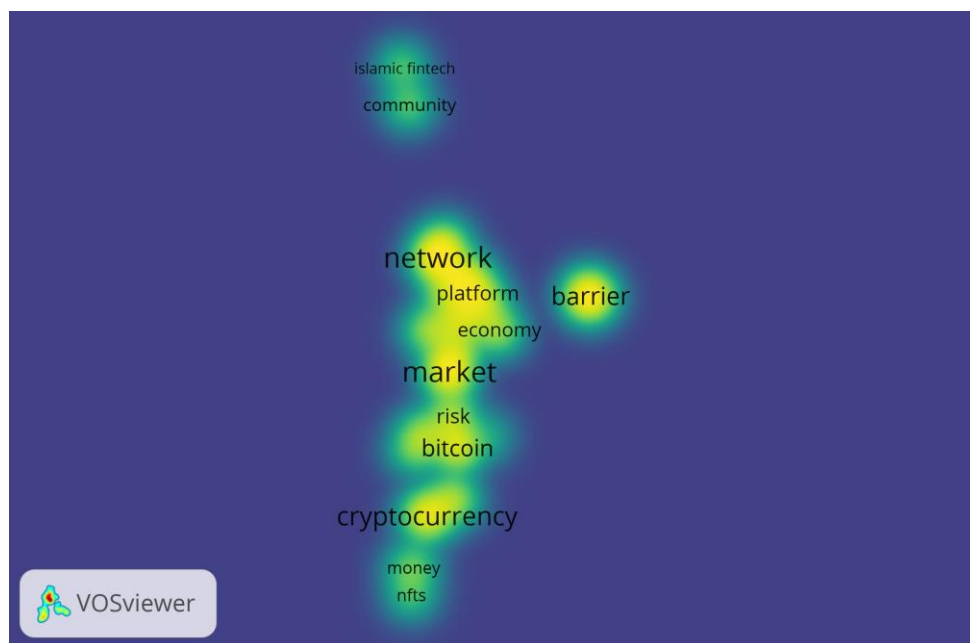


Figure 6. Dominant Concepts in Blockchain and Islamic Economics

Based on the data described in figure 6, it can be understood that there are several dominant concepts in the related study Blockchain and Islamic Economics. Some of the dominant concepts are as follows: cryptocurrency, market, barrier, and network. Some of these concepts are the most massively discussed or the dominant focus in previous studies related to Blockchain and Islamic Economics. On the other hand, there are several concepts that are also discussed in this study, such as Islamic fintech, community, platform, economy, risk, bitcoin, money, and NFTs.

Based on the previous descriptions, there are several dominant topics discussed related to blockchain and Islamic Economics. The first dominant topics of the study was

the cryptocurrency. Studies related to this concept can be seen in the study conducted by [Siswanto \(2020\)](#) which found that cryptocurrency is hugely volatile and has limits to being called money, as it is limited and used for speculation, which is prohibited in Islam. On the other hand, [El Islamy \(2021\)](#) revealed that the global nature of cryptocurrencies and the growth of Islamic finance, it is imperative that we also consider it from a Shariah perspective. Further, [Rabbani, et. al., \(2022\)](#) found that in recent years, financial technology, or Fintech, has become the most disruptive technology. Numerous industries have seen a transformation thanks to cloud computing's disruptive technical innovations, one of which is the cryptocurrency based on blockchain. The study comes to the conclusion that trading cryptocurrencies like Ethereum, Ripple, and Bitcoin does not comply with Shariah. In contrast, [Wartoyo & Haerisma \(2022\)](#) found that cryptocurrencies have a lot more mafsadah than maslahah. Rather than being a currency with extreme risk and volatility that represents the mafsadah, it is an investment commodity.

The second dominant topic related to blockchain and Islamic Economics was market. Studies related to this concept can be seen, for example, in the study conducted by [Ahmed \(2021\)](#) and [Ahmed \(2022\)](#) revealed that upside volatility tends to exert contemporaneous and lagged negative influences on Islamic stocks more in bear than in bull market conditions. [White, et. al., \(2020\)](#) revealed that bitcoin's downside volatility has lagged negative (positive) effects on returns across all market regimes. Further [Sheikh, et. al., \(2023\)](#) argued that the dependence structures tend to be asymmetric and have noticeably become stronger in the last two years than in earlier periods of the sample.

The third dominant topic related to Blockchain and Islamic Economics was barrier. Studies related to this concept can be seen, for example, in the study conducted by [Sahebi, et. al., \(2020\)](#), [Galván-Mendoza, et. al., \(2022\)](#), [Souto \(2022\)](#), and [Pekovic & Bouziri \(2023\)](#). Further, [Alam, et. al., \(2023\)](#) found that regulatory uncertainty, lack of knowledge or employee training and high sustainability costs are the important barriers. While [Singh, et. al., \(2023\)](#) revealed that an useful guidelines for policy makers so that they can benefit from the results to optimize their solutions.

The fourth dominant topic related to blockchain and Islamic economics was network. Studies related to this topic conducted by can be seen, for example, in the study conducted by [Benisi, et. al., \(2020\)](#), [Alfa, et. al., \(2021\)](#), [Sanka & Cheung \(2021\)](#) and [Li, et. al., \(2021\)](#) which found that the advantages and also weak points of blockchain-based storage systems and a discussion about future research directions. In addition, [Abdelmaboud, et. al., \(2022\)](#) and [Wang, et. al., \(2022\)](#) argued that an innovations in blockchain technology and their deployment in IoT applications to increase the quality of life are common topics in today's research communities.

CONCLUSION

This study intends to categorize dominant topics related to find out what concepts and dominant themes are massively discussed in studies related to blockchain-based market transaction and Islamic economics. By using the Scopus database, which has a

solid reputation in the global scientific community, as the primary reference source, this study conducted a systematic evaluation of the literature from 2020 to 2023. The research process involved compiling a number of prior studies on Islamic economics and blockchain-based market transactions in order to identify different approaches within the vast financial technology debate. Based on the result, the following four subjects dominated the research: networks, barriers, markets, and cryptocurrencies. This research will enhance the ideas and prevailing themes that have been extensively explored in studies about Islamic economics and blockchain-based market transactions.

Despite of the compelling results, this study acknowledges a research limitation such limited resources used only based on Scopus indexing database. Further studies add more complex and comprehensive study, especially in the comparison of data from other sources such as the web of science (WoS).

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