

# Blockchain Technology in Financial Transactions under Sharia Banking Practice

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## ABSTRACT

This research explores the potential impact of blockchain technology on financial transactions in Islamic banking, addressing challenges related to security, transparency, and efficiency. Employing a multifaceted approach, the study assesses the benefits of blockchain in Islamic finance through literature reviews and empirical investigations. Notably, blockchain enhances the security of financial transactions by leveraging robust cryptocurrency and decentralized consensus mechanisms, thereby mitigating fraud and manipulation risks. Additionally, blockchain facilitates currency exchange, a critical aspect of Islamic banking, ensuring transparency and adherence to Sharia standards. The research identifies increased efficiency in Sharia banking operations as a key advantage of blockchain technology, attributing it to the automated processes that reduce organizational costs and transaction processing times. Furthermore, blockchain enables more streamlined cross-border transactions, reduces reliance on external entities, and enhances market liquidity. Despite these benefits, the study emphasizes certain challenges in implementing blockchain in Islamic banking, such as the need for youth education, establishing a robust infrastructure, and gaining community trust in new technologies. Successful integration requires collaboration among Sharia banking organizations, regulators, and stakeholders, with clear guidelines and a deep understanding of blockchain innovation. Overcoming these challenges is crucial for unlocking the full potential of blockchain in enhancing the security, transparency, and efficiency of monetary transactions within Islamic finance.

**Keywords:** Blockchain, Financial Transactions, Sharia Banking

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## INTRODUCTION

Innovative progress has developed rapidly since modern transformation 4.0, this is marked by

the emergence of the most sophisticated innovations to help life in monitoring. One way is through the development of new companies such

as web-based businesses and monetary innovation. Fintech is a mechanical development in financial matters with other models present locally so that people can enjoy current, powerful and productive financial exchanges through web innovation. Currently, Indonesian culture cannot be separated from the web, so this culture could be an interesting choice (Inda, T., & Rahma, 2018). One type of fintech that is currently being widely discussed is Blockchain.

Blockchain is a consequence of progress in the realm of Fintech (monetary innovation). provide different benefits to society. There are many blockchains currently being researched, especially in relation to cryptographic money or what is usually called computerized cash. The blockchain biological system in Indonesia has developed and competed with various countries. In the Southeast Asia region, Indodax is a Crypto and Bitcoin resource trading platform that is guaranteed to be one of the local exchangers with the largest number of users (Wicaksono, 2022).

Blockchain innovation allows all transactions to be recorded openly and irreversibly, thereby guaranteeing transparency in financial processes, in accordance with sharia standards that emphasize acceptability and authenticity. Blockchain's unwavering quality in storing information and exchanging it can help prevent blackmail bets and information leaks, which complies with sharia standards in protecting the rights of resource owners. The use of blockchain innovation can reduce organizational and exchange costs by eliminating the requirement of intermediaries, which can enforce Islamic banking's goal of limiting exchange costs. The use of blockchain innovation can help ensure consistency with sharia standards on every exchange and monetary post provided by sharia banking.(Abduh, M., et al., 2020)

However, despite its enormous potential, the use of blockchain innovation in Islamic banking is still limited and requires further study regarding its impact. Various difficulties as well as specific, administrative, and regulatory considerations must be explored to thoroughly understand the effects and consequences of using blockchain innovation in Islamic banking monetary exchanges. The essence of this exploration is to dissect the impact of blockchain innovation objectives in monetary exchange in Islamic banking. This exploration aims to investigate the potential advantages, challenges faced, and suggestions that arise due to the goals of blockchain innovation with respect to Islamic banking.

Blockchain is a computerized data set that empowers concurrent capacity of specific activity records across various machines. Computerized information on exchanges, agreements, and contact information bases are put away utilizing this innovation as a progression of interconnected blocks. The shortfall of straightforward and unambiguous monetary framework guidelines uncovered the business to normal errors and wrong data translation (Chen, 2020). Blockchain innovation tends to most of these issues and emphatically brings down monetary gamble. The significance of Blockchain innovation is turning out to be all the more commonly known. It is encircled by few individuals attempting to sort out some way to embrace also, utilize this innovation's benefits in their organizations. The fundamental objective of establishing banks was to join the populace and make it workable for them to connect securely and proficiently through exchange and business. A creation that makes it simpler to finish different exercises on a worldwide scale is the blockchain stage (Caldarelli, 2021).

A blockchain includes blocks, chains, hubs, and expert hubs. Hubs are responsible for the organization's blocks. Adding blocks to the

Blockchain is a difficult activity requiring numerical problemsolving. The blockchain organization's ability to grow perpetually is compelled by the assignment of tackling testing numerical riddles. Hacking, cheating, or in any case modifying the blockchain network is basically unimaginable because of the uniqueness of hash codes. Blockchain is a conveyed record where a duplicate of the record is kept on each associated PC. The organization is known as the Blockchain on the grounds that it comprises of interconnected blocks serving exchange records. The thought and working of digital forms of money rely upon the blockchain network (Till, B.M., et al., 2017).

Blockchain is a network information base that is circulated using a complex framework. This makes the exchange take place more securely without the presence of a delegate. In fact, the cryptographic components in the Blockchain framework enable the dissemination of data sets. So that meetings within the organization can check the exchanges that occur. This implies that other parties cannot change the control information in the Blockchain framework (World Bank Group, 2020).

Blockchain innovation can make exchanges faster, simpler, easier and safer. Exchanges are faster because they use a computerized stage so that short and long distance exchanges can occur continuously. Exchanges are cheaper because they do not require an outside party. Exchanges are easier because every exchange flow is recorded forever in the Blockchain framework and can also be checked by related parties. Exchanges are safer because the checking system used cannot be hacked by parties outside the exchange. In fact, according to a World Bank Study (2019) the Blockchain framework is a mechanical development that could possibly trigger a modern uprising in the future. disrupting finances and action plans. This framework may be able to support increased efficiency in various companies,

especially the Islamic monetary industry (World Bank Group, 2020).

Blockchain is not Bitcoin, but it allows the creation and transportation of digital forms of money, as well as resources with real value. Blockchain activities will continue to depend on investigations by state-run administrations and strategists who make clients feel better. Public authorities may convey unacceptable messages to the market, to strategists, and to the police, to whom they usually delegate. In addition, government strategies and relations with private parties regarding the implementation of Blockchain will bring progress (Sangwan, V. , H. P. P., 2020).

Research by Al-Tamimi et al. (2019) led a contextual investigation of the use of blockchain innovation in the Islamic finance industry in Saudi Arabia. The examination results show that the use of blockchain innovation can build security and directness in Islamic banking monetary exchanges. This exploration also includes the need for appropriate guidelines to deal with legal challenges and compliance with sharia standards.

Abduh et al., (2020) research explored the benefits of blockchain innovation in Islamic banking in Indonesia. The research results show that blockchain innovation can further develop the productivity function and accuracy of information in Islamic banking monetary exchanges. This exploration also highlights the importance of adopting blockchain innovation in aggregate by Islamic banks to achieve more prominent cooperative energy and organizational impact.

Research by El-Qawasmeh et al. (2021) concentrate on the impact of blockchain innovation in Islamic banking monetary exchange in Jordan. This investigation found that the utilization of blockchain innovation can reduce exchange costs and work on the productivity of handling monetary exchanges. The results of this examination also

reveal that the transparency provided by Blockchain innovation can strengthen clients' trust in Islamic finance. (El-Qawasmeh, et.al., 2021)

Research by Zare et al. (2021) looked at the impact of using blockchain innovation in Islamic banking in Iran. The examination results show that Blockchain innovation can further develop information security, prevent extortion, and speed up monetary exchange results. This exploration also recognized difficulties such as legal issues, sharia consistency, and lack of understanding of blockchain innovation among clients (Zare, H., et al., 2021).

Research by Hassan et. al., (2022) dissects the use of blockchain innovation in the Islamic finance industry in Malaysia. The research results show that blockchain innovation can strengthen security, honor, and directness in monetary exchanges. This exploration also shows the importance of involving legislative bodies, supervisors and monetary organizations to create structures that uphold the use of innovation blockchain in sharia banking (Hassan, N. S., et. al., 2020)

Blockchain innovation is a decentralized framework used to record and confirm exchanges in a straightforward and straightforward manner. Blockchain uses strong cryptographic standards to guarantee the security and correctness of information. In relation to Islamic banking, blockchain innovation can be used to increase security, openness and proficiency in monetary exchanges. Islamic banking relies on Islamic sharia standards that limit usury (premium), hypothecation, and other unlawful practices. These standards include fairness, directness, legal consistency, and legitimacy of the exchange. (Iftikhar, 2022)

The use of blockchain innovation in Islamic banking can help ensure consistency towards

sharia standards by expanding transparency and security in monetary exchange. Security is a basic point of view in monetary exchange, especially in Islamic banking which monitors customer reserves. Blockchain innovation uses solid cryptographic calculations to maintain the honor of information and prevent change or distortion. The security provided by Blockchain innovation can help safeguard client resources and data in Islamic banking currency exchange. Candor is an important value in sharia banking to ensure fairness, responsibility and conformity with sharia standards. Blockchain innovation enables open and secure financial exchange for all interested parties. The exchange of data stored in the blockchain can be carried out in a straightforward manner, in this way strengthening the trust of customers and sharia authorities towards sharia banking. (Esрати, 2018)

Functional effectiveness is an important consideration for Islamic banking reducing authoritative costs, speeding up and offering better support to clients. In blockchain innovation, exchanges are recorded naturally and decentralized, eliminates the requirement for manual cycles and outsourcers. This can reduce the expected time and costs for handling Islamic banking financial exchanges. It is well understood how utilizing blockchain innovation can augment Islamic banking monetary exchange by further developing security, straightforwardness and functional proficiency. Sharia standards are also considered to ensure consistency in the use of blockchain innovation in Islamic banking (Elasrag, 2019).

## LITERATURE REVIEW

Blockchain is a decentralized electronic recording framework for creating protected and immutable cryptocurrency records of any incentive exchange whether cash, merchandise, property, and so on. Basically, a blockchain is a collection of data that is disseminated to record exchanges and circulate them to individuals (Septianda et al., 2022). Any exchange that occurs must be in accordance with the agreements agreed upon within the data collection organization to limit the occurrence of misrepresentation. Blockchain makes it easier to access safely, straightforwardly, without problems, complicated and expensive methodologies so that it can be more effective and productive.

Blockchain has experienced rapid progress to date. Quoted from Swan, (2015) Blockchain improvements have reached three stages.

### A. Blockchain 1.0 Phase

This stage is the beginning of the development of blockchain as an achievement of computerization of cash. Innovation in this stage appears as a consolation in the background. The model in the blockchain 1.0 stage is like the mining, hashing, and general record keeping innovation stages. The advantages of using blockchain 1.0 are lower exchange fees for online purchases, providing better physical offers compared to credit cards, and providing security from this expansion.

### B. Blockchain 2.0 Phase

This stage is one type of improvement in a computerized economy. At this stage there is unrest in the world of money with the presence of various monetary applications that provide convenience such as installments, transfers and complete transactions. The blockchain 2.0 stage of generating intelligent contacts is a program to guarantee the aggregate arrangement according to the guidelines or arrangements in the data collection organization.

### C. Blockchain 3.0 Phase

This stage is one type of development from a computerized economy to a computerized society. At this stage, those involved in this matter come from the business world as well as from various fields such as welfare, education, government, correspondence, science information, and others.

Laurence, (2017) partitions blockchain types into three parts, specifically: *Public Blockchain*, This blockchain is generally distributed and works using local tokens. This type of public Blockchain also allows everyone to participate in following it so it is said to be open source; *Permissive blockchain*, This blockchain provides engineers with the conditions to create a blockchain network framework. The source code provided can be open or closed; *Private blockchain*, This blockchain has limited scale goals and does not require local tokens. In a private blockchain, there is only one person in control to monitor important things so you can give mining rights to anyone or even not give them in any way to anyone.

## Blockchain Principles

There are 5 important principles driven by the blockchain framework (Septianda et al., 2022):

### 1. Distributed Databases

Large numbers of replicated records should not be differentiated from the data set. Each member in the blockchain approximates the entire data set and not a single member filled in as control information. Where information from accomplices can be checked directly without requiring an outside party as an intermediary.

### 2. Peer-to-Peer Transmission

Correspondence that occurs between partners or individuals In the blockchain framework, this is done directly without the need for coordinating intermediaries or outside parties.

### 3. Transparency with Pseudonymity

The exchanges that occur between blockchain addresses are visible to anyone with framework access. When changes are made to another duplicate that is refreshed at the same time. Clients on the blockchain have a special alphanumeric location that identifies them. The



client can remain unknown or provide confirmation of his character to others.

#### 4. Irreversibility of Records

Once an exchange is placed into the information base, the record cannot be changed. Other modern calculations are delivered to guarantee that data set records are durable and accessible to everyone on the network.

#### 5. Computation Logic

The computerized framework in the record means that clients can oversee calculations and decide which consequences trigger exchanges between nodes.

### **Blockchain Functions**

#### 1. Transparency

Blockchain-based record-keeping frameworks offer a high level of directness compared to existing record-keeping. Changes to records that occur must be visible to everyone and remembered by the organization, and exchanges cannot be changed or deleted once they enter the blockchain.

#### 2. Elimination of intermediaries

Most exchanges that occur today require the name of a delegate, for example a bank, which provides trust and security to the exchange. The capability of the blockchain framework is that the disposal of delegation occurs naturally directly between the parties who need to complete the exchange without the presence of outside parties or intermediaries.

#### 3. Decentralization

Decentralization of Blockchain data sets is an important part of how middlemen can be eliminated while expanding transparency and trust. Where every information contained in the blockchain is collected into one or decentralized.

#### 4. Reduce costs

The advantage of this innovation is that it can reduce costs in various businesses by eliminating intermediaries involved in cycle recording and resource transfer.

#### 5. Increased transaction speed

This blockchain-based framework reduces the costs associated with exchanges, but also speeds things up instantly (Nakamoto, 2008).

### **How Blockchain Works**

An outline of the blockchain framework components obtained by knowing the set of hubs (clients) working on the blockchain includes: (Tapscott, D., & Tapscott, 2016).

1. Clients communicate with each other through several public and secret keys. These 2 things are used to check the exchange itself.

2. The adjoining peer guarantees that the exchange is valid before replying. If there is an invalid exchange, it cannot be checked.

3. The substantial exchange that an organization has accumulated through the above interactions will be supported, organized, and aggregated into a time-stamped block of competitors. Where this interaction is called mining.

4. Then, different hubs will check the suggested blocks specifically: (1) The exchange that occurred was a substantial exchange (2) alluded to through the past block hashes of the right chain.

Essentially a blockchain is a collection of free creators who believe in an information base that has no reliable delegation. There should be implementation a group decides that all individuals of the organization will comply blockchain.

### **METHODOLOGY**

This research uses a combination approach between approaches analytical and descriptive. An analytical approach is used to analyze the influence of using blockchain technology in banking financial transactions sharia, while a descriptive approach is used to provide an overview about the use of blockchain technology in the context of Islamic banking.

This research will begin with a comprehensive literature review about the use of blockchain technology in the financial industry in general and in the context of Islamic banking in

particular. Literature review will involve previous empirical studies, scientific articles, books, reports research, and other reliable sources of information to obtain deep understanding of this topic.

Based on the literature review, this research will identify relevant variables to analyze the influence of technology use blockchain in sharia banking financial transactions. These variables can include transaction security, transparency, operational efficiency, compliance sharia, and customer trust.

Data for this research can be collected through various sources, such as journals, previous research results and related articles. After data collection, data analysis will be carried out for analyze the influence of using blockchain technology in transactions Islamic banking finance. Data analysis This research uses secondary data obtained from library data or what is known as library research. Library research is study research which is carried out through sources such as books, journals, laws and regulations, and other scientific writings. Descriptive qualitative methods were used in the research This is through collecting information from literary sources and books as objects main. Qualitative methods are research carried out through collection actual information and produce data in the form of notes and descriptives.

The literature used to collect data is through previous research such as journals, reference books, and online documentation related to analysis of the use of blockchain technology in sharia banking financial transactions. After data analysis, the research results will be interpreted and presented in an understandable form. Important findings will be analyzed

in depth and paired with a review of existing literature for illustrates the influence of using

blockchain technology in transactions Islamic banking finance.

## RESULT AND DISCUSSION

The research results show that the use of blockchain innovation in monetary exchange in Islamic banking makes a significant contribution towards expanding security. Blockchain innovation uses solid cryptocurrency calculations and a decentralized agreement system to guarantee the respectability and credibility of information. In relation to Islamic banking, this reduces the risk that misinterpretations, controls and digital attacks can compromise client reserves.

Blockchain's center credits imply that it has critical potential for use in Islamic money because of its:

- Straightforwardness: blockchain gives provenance, discernibility straightforwardness of exchanges.
- Control: admittance to permissioned networks is confined to recognized clients.
- Security: the computerized record can't be changed or messed with once the information is placed. Misrepresentation is more uncertain and simpler to detect.
- Ongoing data: at the point when data is refreshed, it's refreshed for everybody in the organization simultaneously.

The blockchain in Islamic money and banking will most likely assistance the Islamic banks, and monetary foundations to succeed. Without stress over the premium and other such issues Islamic financial framework will actually want to work all the more beneficially. The executives of advances and other interesting administrations will turn out to be simple. as well as decreasing misrepresentation and hazard, it can cut down the significant expenses related with Islamic money. The expense of handling Islamic monetary items is higher than normal monetary administrations items, so blockchain is an exceptionally viable device to bring down the expense in the back-end

handling frameworks of Islamic money organizations. The genuine test, going ahead, will be the lawfulness of savvy contracts, and the worldwide administrative system expected to lay out obvious distributed loaning across borders; since it is legitimate in one nation, doesn't make it so in the following.

The use of blockchain technology also has a significant impact on the transparency of Islamic banking monetary exchanges. Blockchain provides exchange confirmation that can be checked directly by all parties including those interested. This strengthens the trust of clients and sharia authorities about the honesty of sharia banking. In addition, blockchain transparency can also work with external reviews and work with appropriate disclosures with sharia standards. Blockchain innovation can reach the next level of functional effectiveness of Islamic banking through mechanization and reduced managerial costs. The decentralized and mechanized exchange process in blockchain reduces dependence on time-tedious manual cycles. This results in faster and more effective exchange handling, as well as reducing costs associated with confirmations and compromises. (No et al., 2023)

In this examination, it was tracked that the use of blockchain innovation can maintain the consistency of sharia banking with sharia standards. The transparency and security provided by blockchain innovation make a difference in guaranteeing that monetary exchanges are carried out in accordance with sharia standards, including the prohibition of usury and hypocrisy. This provides certainty and confidence to customers that sharia banking carries out its activities in accordance with the standards they choose.

Nevertheless, this research also identifies several reasons that must be addressed in adopting blockchain innovation in Islamic banking. These difficulties include parts of the guidelines that are not yet fully developed, the need for a solid foundation, and a lack of understanding of blockchain innovation among clients. Collaborative

efforts between Islamic banking, controllers, and other partners are expected to overcome these difficulties and complete the maximum capacity of blockchain innovation in Islamic banking monetary exchanges.

The consequences of this research's main areas of strength provide evidence of the impact of utilizing blockchain innovation in monetary exchange in Islamic banking. The consequence of this research is the importance of Islamic banking to consider the use of blockchain innovation as a procedure to expand security, directness and productivity in Islamic banking tasks and administration.

## **CONCLUSION AND RECOMMENDATION**

Blockchain innovation can possibly alter the manner in which we manage monetary exchanges, and Islamic money is no special case. Islamic money depends on the standards of Shariah regulation, which disallows the installment or receipt of revenue. All things considered, Islamic money depends on benefit sharing and resource based supporting models. By utilizing blockchain innovation, it is feasible to make a framework that sticks to Islamic money standards while giving straightforward, secure, and proficient monetary exchanges.

One of the vital benefits of utilizing blockchain innovation in Islamic money is the capacity to make a sealed and straightforward record. Blockchain innovation considers the production of a decentralized record that is open to all members in the organization. This implies that each exchange can be followed and confirmed, guaranteeing that all gatherings are acting as per Islamic money standards.

One more benefit of utilizing blockchain innovation in Islamic money is the capacity to make shrewd agreements. Brilliant agreements are self-executing contracts with the provisions of the



understanding among purchaser and merchant being straightforwardly composed into lines of code. This implies that the particulars of the agreement are consequently implemented, lessening the requirement for go-betweens and diminishing the gamble of debates.

Utilizing blockchain innovation in Islamic money can likewise give valuable open doors to microfinance. Microfinance is the arrangement of monetary administrations to low-pay people and independent companies that don't approach conventional financial administrations. By utilizing blockchain innovation, it is feasible to make a decentralized stage that empowers microfinance loaning without the requirement for middle people. This can assist with decreasing the expense of loaning and increment the openness of money for the people who need it most.

As well as giving open doors to microfinance, blockchain innovation can likewise empower crowdfunding. Crowdfunding is the act of subsidizing a task or adventure just barely of cash from an enormous number of individuals, regularly by means of the web. By utilizing blockchain innovation, it is feasible to make a decentralized crowdfunding stage that permits people to put resources into undertakings and adventures as per Islamic money standards.

Another region where blockchain innovation can have a huge effect on Islamic money is in the space of global exchange. Islamic money standards forbid the utilization of speculative monetary instruments, like subordinates and prospects. This can make it hard for Islamic monetary organizations to partake in worldwide exchange. Nonetheless, by utilizing blockchain innovation, it is feasible to make a framework that empowers global exchange while sticking to Islamic money standards.

Based on the analysis regarding the impact analysis of the use of blockchain technology in

financial transactions in banking, it can be concluded that Utilization of this innovation provides enormous benefits as far as security, transparency and functional effectiveness. Blockchain innovation can expand exchange security, reduce the risk of misrepresentation, and strengthen the veracity of information. In addition, this innovation also increases the ease of exchanging Islamic banking currencies, expanding the trust of clients and Sharia specialists. Functional effectiveness can also be achieved through mechanization and reducing regulatory costs.

Based on the above conclusions, here are some suggestions for Islamic banking related to the use of blockchain technology in transactions finance.

1. Increased Awareness and Education: Islamic banking must strengthen internal and external understanding of technology blockchain and its benefits in financial transactions. Through appropriate training and education, stakeholders Islamic banking can understand and adopt technology blockchain better.
2. Collaboration with Regulators: Collaboration between sharia banking and regulators are critical to developing a regulatory framework which corresponds to the use of blockchain technology in transactions Islamic banking finance. Clear and reliable regulations will provide legal certainty and facilitate technology adoption This.
3. Investment in Infrastructure: Islamic banking needs to invest in the technological infrastructure required to support use of blockchain technology. This includes development secure, scalable, and efficient blockchain platform and integration with the existing system.
4. Industry Collaboration: Islamic banking can achieve many benefits bigger by collaborating with other financial institutions, technology service

providers, and other stakeholders in adopting blockchain technology. This collaboration will strengthen blockchain ecosystem, expanding access to markets, and facilitating development of joint solutions.

5. Monitoring and Evaluation: Islamic banking must continuously monitor and evaluate technology implementation blockchain in financial transactions. This evaluation will help identify challenges, improve weaknesses, and optimize the benefits obtained from the use of technology blockchain.

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