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ZAKAT BLOCKCHAIN: A DESCRIPTIVE QUALITATIVE APPROACH

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ABSTRACT

Zakat as a tremendously effective tool for poverty minimization and social problems resolution, just like digital wallets can be used and optimized within the potential use of blockchain technology. Furthermore, zakat blockchain is one of the media instruments to cut the chain of zakat management and distribution, which is complex and requires much time. The synergy of amil zakat and muzakki in zakat blockchain is the right answer for welfare and time efficiency in distributing zakat to asnaf wherever they are. The methodology employed in this research was descriptive qualitative. This research was a descriptive study because it described or elucidated the combination of zakat and blockchain in Indonesia. The research approach used was qualitative. The objects of this research were zakat institutions in Indonesia. The subject of this research was the mechanism between muzakki and nadzhir in Indonesia This study's results stated the importance of blockchain application and implementation for better zakat management.

Keywords: Zakat, Blockchain, Amil, Muzakki, Asnaf

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INTRODUCTION

Currently, the zakat collection is significant compared to previous years. According to data from Baznas, the zakat collection has reached 10 trillion of the total potential of 217 trillion (Baznas, 2019). Therefore, technology is needed that can maximize the potential of zakat itself. Blockchain is one of the key answers to how zakat distribution is directed and organized. Hence, support from various parties is needed to break the chain of poverty in a time like this. According to BPS data as of March, Indonesia's poverty rate has reached 26.24 million people from a total population of 350 million (BPS.go.id).

It is in this conceptual field that a new technology called blockchain has recently emerged. The idea is to create a transparent and reliable environment for exchanging data and carrying out transactions through a decentralized and immutable network system. As a result, all the transactions carried out will be visible and authenticated by all the nodes in the network, which makes it possible to track funds while being transferred in full transparency and makes any fraud operation impossible and protects against cyber-attacks. Blockchain should therefore be a perfect solution for zakat institutes to overcome its drawbacks while allowing people to know precisely where and for which purpose their money was used (Peredaryenko, 2019). It can also contribute to higher transparency in charitable giving and increase the clarity of the links between charitable giving and project results (Cole, Stevenson, & Aitken, 2020)

In addition, in a 2018 PwC survey, 84% of 600 executives from 15 regions, stated that their organization is related to blockchain technology. The company has practiced in the laboratory; they have built solid evidence. Today, the whole world is talking about blockchain, and they understand blockchain related information. For almost all people, it is very easy to understand about blockchain. On the basis of a distributed and tamper-resistant ledger, a well-designed blockchain not only cuts middlemen and reduces costs but also improves efficiency and accuracy. Blockchain also has greater accountability and traceability than any other business. Gartner estimates that blockchain will benefit about US $ 3 trillion by 2030.It is assumed that around 10% to 20% of the world's economies will use blockchain-based systems by that year (Pwc Survey, 2019).Therefore, innovations related to zakat are needed to increase zakat collection with blockchain technology. So far, this technology has not been used by zakat organizations globally and in Indonesia. In this study, several questions were posed; (1) What is blockchain technology?, (2) Can blockchain zakat technology be implemented?, (3) How is the zakat blockchain technology mechanism?.

Previous studies (M Abojeib and F Habib, 2019) have indicated continuous efforts to apply blockchain technology in the social and financial system due to good governance, low transaction costs, and high transparency. (Benedikter,

2012) also confirms two main trends observed after the financial crisis in 2007-2008. First, there are protests from around the world regarding the non-compliance of social and ethical values of the financial institution system. Second, due to various technological advances, one of which is blockchain, there has been a shift in the innovation paradigm from only digitizing financial products and services to changing the basis of business models, products and services (Gomber, Koch & Siering, 2017). In addition, according to Bakar (2017: 19-28), transactions via the internet almost entirely refer to financial institutions that function as trusted third parties for processing. Third parties also function to minimize fraudulent activity. On the other hand, the existence of financial institutions incurs higher costs because they have to pay additional costs. For that reason, blockchain emerged. Developed by Nakamoto (Bitcoin: 2008), the mechanism in blockchain allows the elimination of the role of third parties (Leon et al, 2017).This research aims to analyze and combine zakat with blockchain so that the blockchain zakat model is born and useful for zakat stakeholders.

LITERATURE REVIEW

Blockchain

The definition of blockchain comes from a combination of several technologies, including the blockchain data structure, common key cryptography, distributed ledgers, and the overall way of working. According to Castiglione Maldonado (2018), in the lightest of terms, a blockchain consists of linked chains that store auditable data in units called blocks. Many people say that blockchain is almost the same as a google document spreadsheet, where multiple authors can provide a locking mechanism. Blockchain is a little more complex than other technologies and has distinct characteristics which make it an attractive technology for marking, storing and tracking anything of value (Elasrag & Hussein, 2019).

Blockchain technology is more than just an investment opportunity. Blockchain is a peer to peer network that uses cryptology, a distributed computer system that can be used to share data and create applications. Blockchain can affect many items that focus on the data of our lives, from the banking and payments sector to big data and smart contracts. Between blockchain and bitcoin are very different. Bitcoin implementation uses blockchain technology, but blockchain technology can be implemented in a broader context than bitcoin or cryptocurrency (Castiglione Maldonado, 2018). Blockchain consists of blocks, each block contains data (regardless of value), its hash value (a different cryptographic value that contains characters and numbers generated through complex computational algorithms) and a pointer to the hash of the previous block (Sylvester, 2019).

Kinds of Blockchain

Blockchain can be divided into three, among others: public, private, or hybrid, depending on the application (Sultan, Ruhi, & Lakhani, 2018). Public blockchain is open by anyone, anywhere and can be used without prior permission. Anyone can download the code or software and start running the full node on the local device, validating transactions on the network so they can participate in the whole process. Due to their general nature, anyone can view or check transactions in the explorer's public block. However, the transacting party remains unknown. There are several benefits of using a public blockchain, including disrupting the flow of the business model through disintermediation. In addition, there is no need to maintain servers or system admins by a central authority, which completely reduces the cost of creating and implementing a decentralized platform (DApps). examples of public blockchains include Bitcoin, Ethereum, and Litecoin (Abojeib & Habib, 2019).

Private blockchain can be interpreted as an application run by a single or centralized organization with a limited number of nodes. this is invaluable for solving problems of efficiency, safety, and fraud in traditional institutions. However, a very important decentralization feature does not exist for private blockchains. This platform has the same advantages over the consortium blockchain, but in a different sense; The platform has more restrictions and is not distributed (Abojeib & Habib, 2019).

The hybrid blockchain is known as a consortium, only to the privileged public. The whole process is accommodated by a server with known privileges and uses a regulatory mechanism agreed by all parties. A copy of the blockchain is only sent to participants who meet the conditions, the network is only partially decentralized (Elasrag, Hussein, 2019).

Federation blockchain. This blockchain is run under the authority of a specific group of organizations that is allowed to carry out the full node role. Unlike the general blockchain, this organization does not allow everyone to participate in the transaction verification process. The overall process is accommodated by a pre-selected set of nodes, where the rule specifies the smallest number required to sign each block to be valid. Blockchain can only be read for the public or limited only to participants who have rights. Blockchain like this has several interesting advantages, for example, it can reduce transaction costs, avoid data redundancy, and replace old systems. This platform is also useful for easy document handling and retrieval, reducing semi-manual compliance mechanisms. This blockchain is faster than the public blockchain, meaning that there is greater power of scalability (Abojeib & Habib, 2019).

Another Islamic philanthropic product that is ready to adopt blockchain is the zakat sector. Blockchain helps everyone know where Muzakki's money is going and is systematically tracked. Fundraising zakat has been practiced in all

Islamic countries. In accordance with Sharia provisions, each religious authority carries out the promotion, collection and distribution of zakat. However, there are several obstacles, including inefficiency, lack of accountability in collecting, managing, and distributing zakat funds, differences in the understanding of scholars on how to handle zakat, and broad rules, as explained by Khairani Afifi (2018).

Zakat Management

In law number 23 of 2011 concerning zakat management, zakat management is the planning, organizing, distributing and utilizing zakat. There are two types of OPZ that are recognized by the state, namely: (1) The National Zakat Agency (BAZNAS) is a Zakat Management Organization formed by the government with members from the community and the government to collect, distribute and utilize zakat according to religious provisions; (2) The National Amil Zakat Institution (LAZNAS) is a Zakat Management Organization formed by the community and authorized by the government to carry out activities of collecting, distributing and distributing zakat funds by following religious provisions.

Zakat, as a tremendously effective tool for poverty minimization and social problems resolution, just like digital wallets can be used and optimized within the potential use of blockchain technology (Salleh, Abdul Rasid, & Basiruddin, 2019). A project called "ZakatTech" in synergy between the ISRA and SysCode was announced in 2019. This project allows funds to be tracked throughout the zakat management process from collection to distribution (IFNFintech, 2019).

In general, it applies in the same way to charities. Much like zakat, blockchain is well suited to the charitable giving, foreign aid, and development sectors that require the common use of direct payments and cash transfers (Vrba, 2018). It is why many academic works have developed models integrating blockchain into the modus Operandi of charities and donation companies. Farooq, Khan, & Abid (2020) developed a management platform for charity collection and distribution using a blockchain network and its components, such as Initial coin offering (ICO), crypto wallets, IPFS protocol, and smart contracts (Hu & Li, 2020).

Zakat is one of the most critical items in Islamic philanthropy. As the third pillar of Islam, zakat must be carried out by all Muslims who have met the criteria (Muzakki) to clean their property by channeling their zakat to those who are entitled to receive zakat (Mustahik). The primary function of zakat is not only to help the Mustahik economy but also to become a balancing tool in the economic sector of a country. The main objective of zakat management is to totally change the Mustahik (zakat recipients) into Muzakki (zakat giver). It shows that zakat has the potential to overcome economic inequality and poverty in a country (Publication Division and Puskas BAZNAS Network, 2016).

The role of amil zakat (zakat officer) is central to the funding of zakat funds because it can create a strong zakat climate. According to Didin Hafidhudin (2011), at least four aspects make zakat abundant and can break down poverty and make the people prosperous, including Amil, who is trustworthy, professional, fair, and responsible. According to Aan Zainul Anwar and Selli (2019), in their research, the education level greatly affected zakat literacy level. Literacy is one of the most critical items in the progress of civilization. Therefore, zakat literacy needs to be improved to progress and develop rapidly. Literacy is a tremendous homework for all of us. Even in the research of Indry, Lucky, Tettet, and Citra (2019), the imbalance between the potential for zakat and the realization of zakat was because people did not fully believe in amil zakat institutions, and there were still many people who channeled their zakat independently and have not gone through official zakat institutions.

Zakat funds are issued about 2.5% of the total assets which are nishabnya for a full year, such as gold, silver, cash, savings, investments, rental income, business merchandise or profits, stocks, securities, and bonds. Muslims should be careful when they include cryptocurrency assets in calculating their zakat obligation and keep track of how much cryptocurrency they have stored for years because assets held for less than one year do not need to be issued zakat.

Blockchain makes processes traceable, auditable, and irreversible. This is the most important part of successful philanthropy. This was inspired by a pious Muslim who wanted to use cryptocurrency for donation activities but did not have an interesting place. Blockchain has significant potential for use in the world of Islamic philanthropy because: (1) Transparency: Blockchain provides origin, traceability and transparency of transactions; (2) Control: Access to the whitelist is restricted to identified users; (3) Security: The digital ledger cannot be changed or tampered with after data has been entered. the chances of fraud are very small and easier to spot; (4) Real-time information: When information is updated, it is updated for everyone on the network at the same time.

METHODOLOGY

This research was a descriptive study because it described or elucidated the combination of zakat and blockchain in Indonesia. The research approach used was qualitative. The objects of this research were zakat institutions in Indonesia. The subject of this research was the mechanism between muzakki and nadzhir in Indonesia. This study specified more on the mechanism of making blockchain zakat because the authors saw zakat management as not optimal and efficient and simple for all people. It is hoped that national zakat institutions will be credible, accountable, and professional with this model. This research's source was secondary data, including previous research, blockchain-related books, and national and international journals related to zakat and blockchain. Descriptive

analysis was carried out to analyze the relationship between zakat and blockchain and connect zakat with blockchain, and create a blockchain zakat model that can be used for zakat stakeholders.

RESULT

Blockchain is an open distributed database that carries out transactions on an open-decentralized ledger (Nor, Rahman, Rahman, & Abdullah, 2017). More specifically, it is a data chain of transactions between users stored in blocks, where each block records a specific amount of data encrypted thanks to cryptographic hashing. If a user wishes to carry out a transaction, he must communicate it to all other network users to verify the operation's authenticity. Each user will have a copy of the data ledger; thus, all transactions are visible and available to all of them, making any false transaction, fraud act, or hacking operation impossible. In addition to transparency, reliability, and the possibility of precise and detailed fund tracking, the decentralized structure of a blockchain network reduces transaction costs by eliminating any intermediary. The transaction promotion process in blockchain begins first by creating a digital security code by making encryption. The second step is where users attempt to authenticate the transaction while preserving private information. Finally, the transaction is thus recorded in an immutable way and automatically distributed to all users (Changa, Baudierb, Zhangc, Xua, Zhanga, & Aramid, 2020). The process explained above is shown in the following figure 1:

Source: Changa et al, 2020

Figure 1
How Blockchain Promotes Transaction

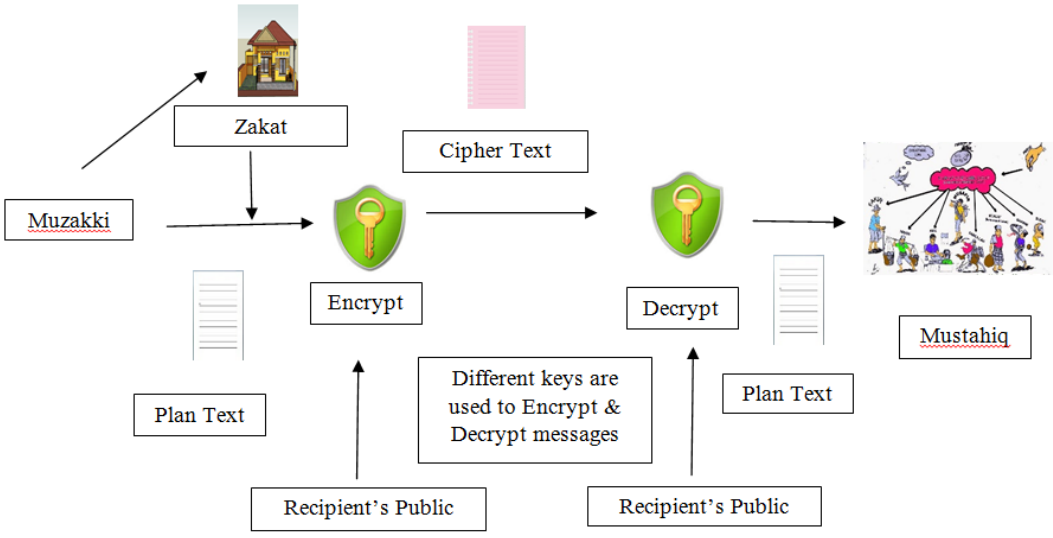
Blockchain is a new technology that has been known after the 2008 financial crisis (Nakamoto S., 2008), and everyone can accept and has been adopted by everyone. Blockchain can be understood as a digital record of block transactions. To ensure transactions, cryptography is used based on a digital signature chain. Each block is a group of transactions that are added to the final block by reaching

a consensus on authenticity among users; The block is then passed to each network user to update their database. The blockchain system records all transactions that have been made, shared by consensus, distributed and shared among the users of each participant, and it is very difficult to enforce it because each process is entered with two keys and each transaction is cryptographed and maintained simultaneously in the distributed ledger of each node, making it nearly impossible to hack, as stated by Alessio et al (2019) following figure 2.

Source: Alessio et al (2019)

Figure 2
How Blockchain Promotes Transaction

Currently, zakat funding is only 10 trillion out of a total potential of 217 trillion. Therefore, technology is needed to facilitate and accelerate access from receiving zakat, recording zakat to distributing zakat to mustahiq with zakat blockchain technology to make everything easier in any case related to zakat. Below is illustrated the combination of zakat and blockchain so that muzakki, mustahiq and muzakki are more focused and organized in zakat management.



Source: Model has modification from Hazik Mohamed, 2017

Figure 3
Model Zakat Blockchain

Muzakki transfers zakat funds to zakat institutions, both Baznas and Laznas because only two of these institutions have a mustahiq zakat database. It encompasses information about whether compulsory zakat is in accordance with the nisab or not when it is checked, and amil will send muzakki funds in the form of cryptocurrency. Technically, people will not use cryptocurrency more than a medium of exchange during the process, and for this, individuals will adopt a fixed parity exchange system from one local currency to one cryptocurrency unit to avoid fluctuations in value (An & Seo, 2018)

Individuals use stable coins, a type of cryptocurrency designed to provide security relating to other major currencies that leading central banks struggle to maintain purchasing power over time in the crypto-asset market (Bullmann, Klemm, & Pinna, 2019). This type of cryptocurrency is characterized by extremely low volatility (usually close to zero). "Tether" is used, which is the most popular and commonly used cryptocurrency for this operation type. The big specialty of Tether is that it belongs to the category of fiat currency stabilized stable coins. Tether holds parity of one Tether unit (1USDT) for one dollar. Connecting Mustahiq to the network, every mustahiq identified in zakat institutions' database will automatically have a blockchain account on the network. He receives these zakat funds in cryptocurrency and then transfers them in fiat money on the exchange platform.

In terms of sending zakat funds, the muzakki can trace the whereabouts of the zakat funds, where the amil zakat party only checks the database that the zakat funds have reached their haul or nisab, and the level of zakat value is appropriate; because the database must always be updated, whether the mustahiq died or has turned into muzakki. There are two binding passwords in blockchain zakat, and no one can change this; even if something changes later, encryption and other descriptions will lock and fix each other, so it is not affected by only one key aspect or item. Thus, the process will be traceable, auditable, and irreversible, which are the main qualities to ensure a successful zakat collection system (Elasrag, 2019).

The muzaki registered on the blockchain network of zakat institutions will automatically have a permanent account. Their zakat fund will thus be represented in the Tether cryptocurrency. On the other hand, each mustahiq who has been recorded in the database of zakat institutions have met the requirements to allow themselves to be part of those who must be given zakat and have a blockchain account. Upon completion, a smart contract will be signed between the institution and the muzaki, where it will be automatically executed, i.e., zakat funds will be collected in the cryptocurrency if the nisâb is reached and remains in possession for one lunar year. Zakat institutions will receive operational funds as an additional cost. Once the funds are raised, they will be exchanged for fiat money

on the exchange platform for the parity "1 Tether = 1 Dollar" and transferred to mustahiq (Dhiaeddine Rejeb, 2020).

CONCLUSION

Blockchain technology can be applied in national zakat institutions, both Baznas and Laznas, because this mechanism can bring significant changes in the world of national zakat. In this case, the role of amil zakat and Muzakki is the key in implementing zakat using blockchain technology in managing zakat that is quality, efficient, accountable, and professional in distributing zakat to asnaf. Blockchain technology is the answer to time and financial efficiency and cryptocurrency technology, making Muzakki more confident about zakat management carried out by amil because all data sources are tracked.

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