



CAN BLOCKCHAIN TECHNOLOGY IMPROVE ACCOUNTABILITY AND TRANSPARENCY OF CASH WAQF IN INDONESIA?

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ABSTRACT

One of the problems that occur in the development of cash waqf in Indonesia is the managerial system and financial reporting. Currently, the safety of waqf data is not guaranteed and is not integrated yet between Islamic Financial Institution – Cash Waqf Recipient/LKS-PWU (Lembaga Keuangan Syari'ah – Penerima Wakaf Uang), Nazir, and BWI (Badan Wakaf Indonesia). The blockchain system comes with changing a centralized approach to being decentralized. The use of the blockchain system in managing waqf funds can be a solution to the problem of waqf that occurs. Therefore, this study aims to examine the implementation of blockchain technology in increasing the accountability and transparency of cash waqf in Indonesia. This study adopts an interview technique with seven practitioners and academics in collecting data and using thematic analysis in the analysis. The research finds that the level of accountability in the waqf management by the LKS-PWU of the Islamic bank is quite acceptable, as evidenced by the fulfillment of five accountability indicators by the LKS-PWU. However, it must be improved in several aspects such as data security, data integration, and real-time reporting. Strategies for increasing accountability include the blockchain implementation in the waqf management both in collecting and distributing waqf by LKS-PWU. The opportunity to apply blockchain to waqf management is very potential because the blockchain system has several advantages such as speed, transparency, and a higher level of security than the conventional system.

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INTRODUCTION

Waqf is one instrument of Islamic public finance that can guarantee social funding in many aspects. The result of productive waqf investigation can be a financial source for poverty alleviation programs, eradicating unemployment, and providing health and education facilities. Most Muslim societies still implement waqf as cashless treasure (land, buildings, facilities, and infrastructure, etc.) that has a quite high value, and it is difficult for *wakif* candidates with low economic to participate. However, recently many discussions about waqf of moveable objects known as cash waqf tend to produce continuously, and its value is affordable for all people to participate so that it can encourage the collection of waqf funds quickly, effectively, and continue to increase (Almantiqy, 2017).

Some facts presented that many institutions can survive by functioning waqf. Moreover, waqf gives a significant contribution. Example of institutions is the University of Al Azhar Mesir, Islamic Boarding School of Gontor, and Islamic Relief. Islamic Relief is an organization administrating cash

waqf. The headquarter of the Islamic Relief organization is in England. Islamic Relief collects more than 30 million pounds sterling or almost around Rp. 600 million cash waqf. Those waqfs are managed honestly and professionally. Then, those waqfs are distributed to more than 5 million people in 25 countries. Even in Bosnia, cash waqf distributed by Islamic Relief was able to create jobs for more than 7000 people through the Waqf income generation program (Kemenag, 2013).

On May 11th, 2002, Indonesian Religious Leader (MUI, 2002) issued to allow cash waqf provided that the principal value of the waqf cannot be reduced and its integrity must be guaranteed. Furthermore, the government issued Law no. 41 of 2004 concerning Waqf on October 27th, 2004, and subsequently published Government Regulation number 42 of 2006 concerning the implementation of Law Number 41 of 2004 concerning Waqf on December 15th, 2006. Following up on the stipulation of this government regulation, the Indonesian Waqf Board (*Badan Wakaf Indonesia/BWI*) was

formed as the waqf regulator independent institution to develop and promote waqf in Indonesia based on Presidential Decree No.75/M of 2007 on July 13th, 2007.

According to BWI's calculation, cash waqf potential in Indonesia achieve Rp. 180 billion a year. However, the data of BWI presented that the cash waqf achieves more than Rp. 250 million, and the waqf land area reached 4.3 million m² in 2016 (BWI, 2018). Due to the high potential of cash waqf in Indonesia, managing cash waqf should be done by accountability.

Accountability demonstrated internal accounting controls by management to assist in resource efficiency by providing information, either for completion or decision making, by those responsible for making investment decisions (Mukhlisin & Mustafida, 2017; Cahyadi et al., 2020). Accountability can be proved through transparency and openness as stated by Allah SWT in the following verse: *And O My people, fill the measure and the scales with justice, and do not harm people against their rights and do not do bad things on earth by mischievousness* (QS Hud-11, 85).

The research result on the Muslim community in Malaysia shows that the ease of waqf, the level of compliance, and trust in waqf institutions are determinants of people's attitudes towards waqf participation (Shukor et al., 2017). Public trust in non-profit institutions, including waqf institutions, is influenced by transparency and accountability aspects. Those aspects will expand donors and increase the number of funds under management (Connolly et al., 2011).

One of the important instruments that can be used by waqf institutions in fulfilling accountability duty is an accountancy and financial report (Nahar & Yaacob, 2011). An institution is considered accountable if it periodically presents financial statements under accounting standards (Yacoob et al., 2015). On May 28th, 2018, the Islamic Accounting Standards Board of IAI has ratified Statement of Shariah Financial Reporting Standard (*Pernyataan Standar Akuntansi Keuangan/PSAK 112: Accounting for Waqf*. PSAK 112 is proposed to be effective on January 1, 2021, with the option of early implementation. The purpose of PSAK 112 is to provide arrangements regarding the recognition, measurement, presentation, and disclosure of waqf transactions carried out by both *nazhir* and *wakif* entities in the form of organizations and legal entities (IAI, 2019).

An absolute professional managing is needed for waqf development in Indonesia. Fulfilling obligations by performing waqf will not solve the problem. The wakif who is the owner of the waqf property gives his property to Nazhir to be managed. Nazir as a party entrusted with wealth must be able to be open and accountable to wakif, as well as to Allah. This is what is called being accountable and transparent in transactions (Adnan et al., 2007). The goal is to maintain mutual trust between *nazir* and *wakif*. Moreover, the resulting information can be used by other interested parties.

Nowadays, many digital waqf services such as BNI Syariah Hasanah Waqf and BSM Berkah Umat, namely digital services that facilitate people who want to productively waqf their property for the benefit of the people under sharia principles appear. The emergence of these digital waqf services greatly

facilitates the community. However, those services are still on a centralized server. So, the existing waqf data is less secure and not integrated between Islamic Financial Institution – Cash Waqf Recipient (*Lembaga Keuangan Syariah – Penerima Wakaf Uang/LKS PWU, Nazir, and BWI*).

Blockchain technology provides a solution to waqf management problems. It allows transactions that are easy to audit and verify. Blockchain also plays a role in tracking supply chain sources and handling multiple transactions (Zulaikha & Rusmita, 2018). Hence, due to the high potential and the high function of cash waqf, an information technology system that can present accountability and transparency report is needed.

The blockchain system comes by changing the approach from a centralized to a decentralized one. In principle, blockchain technology conditions each server running this software to form a network convention automatically to replicate transaction data and verify each other's existing data. When one of the servers is hacked, the server can be ignored because it is considered to have data that is different from other network servers. This action makes blockchain technology relatively much stronger against attacks than centralized technology because there is always at least one server running to handle transactions. Blockchain technology allows network consensus to record and validate every transaction. Therefore, data that has been entered cannot be falsified, lost, or corrupted. Then, they cannot be manipulated by network providers (Darmawan, 2017). Cash waqf potential in Indonesia is very high. Because of that, technology that can give accountability and transparency is needed. That is why the subject of this research is to analyze the Blockchain Technology implementation in increasing the accountability and transparency of cash waqf in Indonesia.

Based on the background of the problem above, it is necessary to formulate the problems that will be discussed in this study: 1. How is the level of accountability and transparency of cash waqf in Indonesia? 2. How is the strategy for increasing the accountability and transparency of cash waqf in Indonesia? 3. How to examine the application of blockchain technology to increase accountability and transparency of cash waqf in Indonesia? Several things distinguish this research from several previous studies, including; 1. This study evaluates the accountability and transparency of cash waqf in digital services through literature studies, in-depth interviews & observations with waqf practitioners, IT practitioners, LKS-PWU, *Nazhir*, and waqf regulators, and; 2. This study assesses the use of Blockchain Technology in building an accountable and transparent cash waqf model framework through literature studies, in-depth interviews & observations with waqf practitioners, IT practitioners, LKS-PWU, *Nazhir*, and waqf regulators.

Our paper is structured as follows. The paper begins by reviewing the research papers that relate to cash waqf and its management issues which is available in Section Two. While Section Three elaborates the methodology of the paper, Section Four discusses proposals to solutions for the research. Lastly, the paper suggests the conclusion and implications of Section Five.

Cash Waqf, LKS-PWU, Accountability, Transparency and Blockchain Technology

This section explains several terminology and studies that have discussed this area of study.

Cash Waqf: Waqf can be classified into infaq fi sabilillah. There are several verses in the Qur'an that explain the command to spend in the way of Allah, one of them as follows. In Surat Al Baqarah (2) verse 261, which means: "The example of those who spend their wealth in the way of Allah is like a seed [of grain] which grows seven spikes; in each spike is a hundred grains. And Allah multiplies [His reward] for whom He wills. And Allah is all-Encompassing and Knowing." In Indonesia, the Indonesian Council of Ulema has issued a fatwa regarding Cash Waqf, (11/5/2002), namely: 1. Cash Waqf/Wagf al-Nuqud is a waqf made by a person, group of people, institutions or legal entities in the form of cash; 2. Included in the definition of money are securities; 3. The legal cash waqf is *jawaz* (permissible); 4. Cash waqf can only be distributed and used for things that are permitted by Islamic law; and 5. The principal value of Cash Waqf must be guaranteed for its sustainability; it may not be sold, donated, and/or inherited. The development of modern waqf practices allows money to become the object of waqf. Cash waqf is a social contribution in the form of cash (Aziz et al., 2013), while Choudhury et al. (2011) explain that cash waqf is one of the innovations and developments of a waqf management system that is in line with shariah. Cash waqf aims to develop the potential of non-cash waqf and then integrate its use in the micro and macro scope. In addition, Mannan (2008) emphasizes that cash waqf can be a tool for social development that expects people to participate in the activities.

LKS-PWU: Islamic Banking is a form of embodiment of the development of an economic system based on Islamic values (Shariah), whose principles are applied to banking regulations. The Law of the Republic of Indonesia Number 21 the Year 2008 dated July 16, 2008, concerning Islamic Banking, provides a definition of Sharia Banking, namely: "everything related to Islamic Banks and Islamic Business Units, including institutions, business activities, as well as methods and processes in carrying out their business activities". As of December 31, 2015, the Minister of Religious Affairs has designated 15 banks as recipients of cash waqf deposits, called LKS-PWU. The banks are as follows: Bank Muamalat Indonesia, Bank Syariah Mandiri, Bank BNI Syariah, Bank Mega Syariah, Bank DKI Syariah, Bank BTN Syariah, Bank Syariah Bukopin, BPD Jogja Syariah, BPD Kalbar Syariah, BPD Central Java Syariah, BPD Riau Kepri Syariah, BPD Jawa Timur Syariah, BPD Nagari Syariah, Bank CIMB Niaga Syariah, and Bank Panin Syariah. The professionalism of waqf management institutions towards waqf assets and their use is a medium for raising public awareness of the importance of productive waqf, in this cash waqf. Absolute management effectiveness is carried out by waqf management institutions. According to Mannan (2008), one indicator of the effectiveness of productive waqf is income redistribution. The expenditure of funds obtained from the results of waqf management plays an important role in any vertical redistribution of income. The

expenditure of waqf funds must be coordinated so that the effect of income redistribution can favor the poor, namely by providing important services and infrastructure for the poor, such as educational facilities.

Accountability: Accountability is an ethical concept that is close to public administration and government, which has a meaning that is sometimes used synonymously with the concept of accountability, which can be questioned (answerability), who can be blamed (blameworthiness), and which has freedom (liability) including other terms that have relevance in the hope of explaining one aspect of public administration (Sawir, 2017). The principle of accountability stipulates that in fact, every activity and the final result of government administration activities through the public bureaucracy must be accountable to the public. Sawir (2017) says that the characteristics of an accountable government are (1) being able to present information on government administration openly, quickly, and accurately to the public, (2) being able to provide satisfactory services to the community, (3) being able to explain and account for each of its policies to the public, (4) able to provide space for the community to be involved in the development process and governance and (5) as a means, for the public to assess the performance of the government. Bureaucratic accountability is often used as a mechanism in managing public agents. The function of the bureaucratic accountability mechanism includes a formal and organized relationship between superiors and subordinates with the need to follow the provisions that must be complied with as well as supervision and standardization of regulatory clarity to be implemented.

Blockchain: Blockchain is basically a distributed database of records or general ledger of all transactions that have been executed and shared among the participating parties. Every transaction in the public ledger is verified by the consensus of the majority of participants in the system. And, once logged in, the information can never be deleted. Blockchain contains a specific and verifiable record of every single transaction ever made (Crosby et al., 2016). According to Maletski & Delman (2017) Blockchain technology has 4 characteristics, namely: 1. Distributed: databases are usually stored centrally (a "top-down" structure). However, blockchain technology databases are stored, distributed across a network of users, and managed by users; 2. Permission-less: all users have the same access permissions to the database. So you don't need permission to access it; 3. Immutable: the old database cannot be changed. Blockchain implementations do not provide a way to correct errors or change personal information that is accidentally sent to the wrong recipient; 4. Reliable: blockchains are based on a definite mathematical calculation. According to Maletski & Delman (2017), blockchain technology has at least five advantages, namely: 1. Simple and fast transactions - participants can transfer information or data without third-party intervention. In contrast to banking institutions often involve several institutions and international money transfer systems around the world for such transactions, which may take up to a week; 2. Completely transparent and secure - users control transactions. When a user wants to add or

change information, the request is broadcast to all participants holding a copy of the existing blockchain. Each participant system automatically checks whether the information is correct. If the majority of participants agree that the transaction is valid, a new transaction will be approved, and a new block added to the chain; 3. 24/7 access/availability - data can be transferred through the system 24 hours a day, seven days a week, without delay; 4. Reduced costs - one ledger, controlled by secure and transparent technology, reducing mediators and costs to a minimum; 5. One point of truth - because blockchain is reliable and durable - the "unhackable" network - can be used as a single point of truth.

METHODOLOGY

Interviews and literature studies are data sources for research model framework preparation from problem analysis and solutions to accountability and transparency problems of cash waqf through Islamic banking. The developed research model framework can only be completed after data and information on preferences/responses/opinions are made available by waqf practitioners on the issues to be studied. The researcher used (questionnaire/direct interviews) with experts and practitioners to obtain the preference data. This data collection is focused on PWU LKS practitioners, waqf experts, IT practitioners, and regulators to collect the data needed for qualitative analysis within the analytical framework that will be used. The types of data used in this study are primary data and secondary data.

According to Satori & Komariyah (2011), an In-depth Interview is a process of collecting information for research purposes through dialogue between researchers as interviewers and informants or those who provide information in the context of participatory observation. The In-depth interviews were carried out with LKS-PWU practitioners, waqf experts, IT practitioners, and regulators. The purpose of the interview is to evaluate the level of accountability and transparency of cash waqf in Indonesia, develop strategies, and assess blockchain technology preferences for increasing accountability and transparency of cash waqf in Indonesia.

Data collection techniques are carried out by studying books or references related to the problem under study. Furthermore, library research can help the researcher to solve the cash waqf transparency problems. It is also used to evaluate the accountability level and transparency of cash waqf in Indonesia. The purpose of observation is to obtain data used to determine the existence of objects, situations, contexts, and meanings. In this study, the authors looked directly at the cash waqf management activities.

After the arrangement of collected data to the research framework model, the next step is data analysis to obtain results. Data analysis is the systematically searching and compiling of the data process obtained from the results of interviews, field notes, and documentation by organizing the data into categories, describing them into units, synthesizing them, and arranging them into patterns. The researcher chooses which ones are important and which ones to study

and concludes the study. The data obtained is descriptive of the results of interviews, literature study, and observation.

According to Braun & Clarke (2006), below is six processes to do thematic analysis in a research; 1. Collect and highlight study data. At this stage, the researcher transcribed the data, read and re-read the data, and recorded the initial ideas obtained from the interviews; 2. Generate initial codification. This stage consists of formulating the code systematically on the data set and compiling the relevant data for each code; 3. Search for themes. At this stage, the researcher compiles the code into potential themes and collects all data relevant to each potential; 4. Create a theme highlight. At this stage, the researcher checks whether the theme works concerning the coded extract (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis; 5. Refine theme categorization. This stage includes continuous analysis to refine the specifics of each theme and coding based on interview data to produce clear definitions and names for each theme; and 6. Generate reports. The last stage is to make an analysis report. Extract from interview data that has been coded and theme and relate it to research questions and in the end will produce a scientific analysis report.

Triangulation is a qualitative research strategy to test validity through the convergence of information from various sources (Carter et al., 2014). The triangulation data source involves collecting data from many people kinds including personal, group, family, and society. The purpose of collecting the data in triangulation is to obtain many perspectives and data validation. According to Natow (2020), analysis with triangulation theory is crucial in research involving interviews to get a complete picture of the investigated situation, especially when researching politically sensitive areas. In this study, the triangulation method is used by comparing the information from the interviewees of the practitioners related to accountability in the three PWU LKS.

RESULTS AND DISCUSSION

The following Table 1 explain the comparison of LKS-PWU offered by Bank Muamalat, Bank BNI Syariah and Bank Syariah Mandiri. Interview results with some interviewees from three LKS PWU presented that five accountability components including transparency, liability, control, responsibility, and responsiveness have been owned by three LKS PWU. However, the implementation of the control aspect with monitoring indicator and the evaluation of LKS PWU BNIS *nazir* has a higher degree because the monitoring is always done every three years. Meanwhile, in the other two institutions, these indicators are not carried out routinely. However, judging by the three institutions, regular reporting regarding the progress of waqf funds and projects has not been carried out. Therefore, it is necessary to increase transparency by using blockchain technology so that the level of public trust will increase. Yuliani & Bustamam (2017) also suggested that waqf management institutions are advised to improve the complete transparency of waqf asset data. According to Ihsan & Adnan (2009), waqf management institutions must have accountability and transparency. LKS PWU has implemented those accounting standardizations.

Tabel 1. LKS-PWU Accountability Strategy by Practitioners.

Component	Indicator	Bank Muamalat	BNIS	BSM
Transparency	The easiness of infomation access	Easy	Easy	Easy
	Publication	Bank Website, Mobile, and internet banking	Bank Website, Mobile, and internet banking	Bank Website, Mobile, and internet banking
	Periodic Report	Exist	Exist	Exist
Liability	Reward dan Punishment	Exist	Exist	Exist
Control	SOP of Cash Waqf Management	Exist	Exist	Exist
	Monitoring and Nazhir Evaluation	Exist	Exist (Every 3 months)	Exist
	Internal and External Control	Exist	Exist	Exist
Responsibility	The regulation implementation of religion ministry	Done	Done	Done
Responsiveness	The Fulfillment of Community Needs	Already through the program that was held	Already through the program that was held	Already through the program that was held
	Programs that have been held	Suitable with Nazhir's partnered program	Suitable with Nazhir's partnered program	Suitable with Nazhir's partnered program

Table 2. LKS-PWU Accountability Increasing Strategies Strategy by Practitioner.

Indicator	Strategy		
	Interviewees-01 (Muamalat Bank)	Interviewees -02 (Islamic BNI)	Interviewees - 03 (BSM Bank)
Ensuring <i>Nadzir</i> accountability	<i>Nadzir</i> selection	Only people who have registered to BWI	<i>Nadzir</i> selection
Accountability policy	Done by Accounting Work Unit	PSAK 112, Not run well yet	Done by Accounting Work Unit
LKS-PWU Accountability	Standard Operating Procedure of Accountant	Standard Operating Procedure of Accountant	Ensuring the implementation of Standard Operating Procedure for Accountant

Strategy in Increasing LKS-PWU Accountability

Based on the interview's result to three waqf practitioners in several LKS-PWU of Islamic banks, there are some strategies implemented by LKS PWI in increasing their accountability, and it is summarized in Table 2.

According to practitioners, LKS PWU did *nadzir* selection to ensure financial management accountability. Hence, they use human resources who are experts to manage waqf. Moreover, LKS-PWU also manages the waqf fund according to the accountant SOP that has been established. Then it is necessary to have literacy and socialization regarding waqf to all waqf stakeholders.

The Implementation of Blockchain in Cash Waqf

Figure 1 explains about cash waqf model in LKS PWU through digital waqf service now. First, waqf can access digital waqf platforms such as: WaktuMu Hijrah, Waqf Hasanah and JadiBerkah. On the platform, there is already a choice of several *nazhir* partners who have cash waqf programs or cash waqf. *Waqif* can choose the desired waqf program. When making a waqf donation, the *wakif* will read the waqf pledge

deed. If they agree, the *wakif* can directly transfer the waqf donation. If the minimum cash waqf with a nominal value of Rp. 1.000.000,- then the *wakif* will get a cash waqf certificate from LKS PWU with a copy to *Nazhir*. Then, *Nazhir* of LKS-LKS PWU registers cash waqf to the minister through the religion department office of city/regency in around seven days since LKS-PWU released SWU to the local BWI. When the waqf funds have been collected, *Nazhir* will implement the waqf program. After *Nazhir* finishes the waqf program, *Nazir* may have 10% of waqf management and 90% of each will be distributed to *mauquf alaih*.

Nazir must deliver the management report of cash waqf every six months to BWI with a copy to the Director-General, who handles the empowerment of waqf. Moreover, LKS-PWU is also required to submit a cash waqf financial report including the amount of waqf, the value of the waqf, and the value for waqf management result at the end of each financial year to the Minister through the Director-General with a copy to BWI. Based on observations and interviews, LKS-PWU has managed cash waqf under the applicable regulations. However, there are several weaknesses to the digital waqf platform.

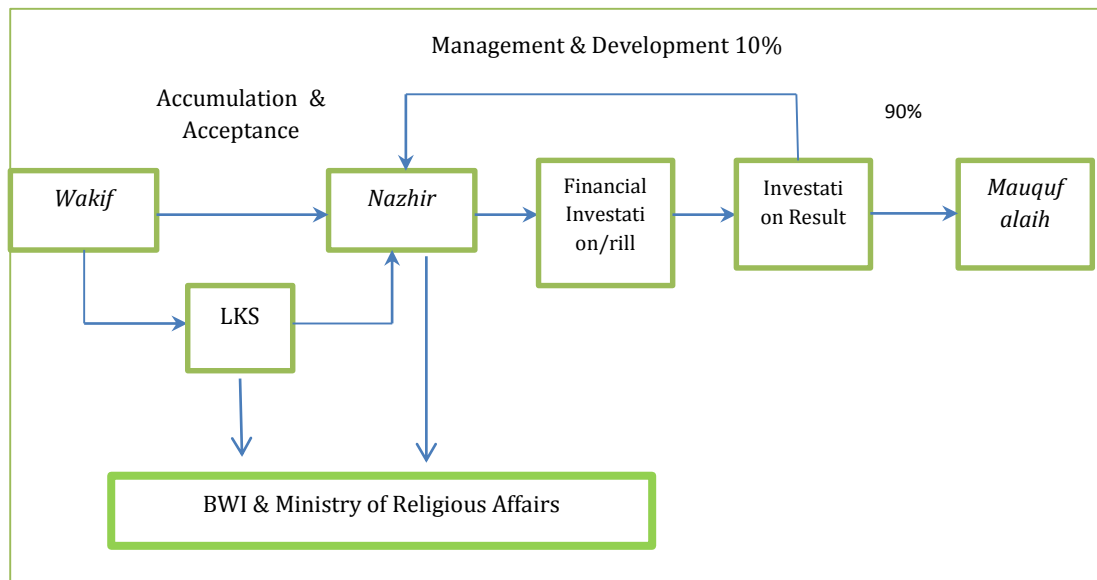


Figure 1. Cash Waqf Management Model in LKS-PWU (BWI, 2018).

Waqf digital platform is still based on a centralistic server and the data security are easy to be hacked. At the same time, waqf property is a valuable asset value for the state and the ummah community. As an eternal and growing investment value, waqf property must be kept safe. Then the ownership of waqf data from the person who is waqf must be preserved forever. Waqf data must be eternal, waqf data management must be in a

trusted place, and waqf data must be maintained down to the detail aspect. Moreover, the waqf data and reporting have not been integrated in real-time. It is the weakness of the current digital waqf platform.

In Blockchain implementation analysis, there are some indicators that be used in this study, and it is summarized in Table 3.

Table 3. Blockchain Implementation in Cash Waqf According to Experts.

Indicator	Interviewees-06
The Opportunity of Blockchain using in Cash Waqf.	Has high opportunity to do.
Blockchain Superiority.	Easy, Transparent, and Fast.
The challenge of Blockchain using in Cash Waqf.	Regulation and cost
The Strategy of Blockchain using in Cash Waqf.	Competent Party.

Table 4. The Blockchain Implementation in Cash Waqf According to Banking Practitioners.

Indicator	Interviewee-01 (Bank Muamalat)	Interviewee -02 (BNI Syariah)	Interviewee - 03 (BSM)
The Opportunity of Blockchain Using in Cash Waqf.	Has a high opportunity to be done.	Very well to be done	Has high opportunity to do.
Blockchain Superiority.	Easy, increase the transparency and fast.	Easy, transparent, and fast.	Easy, increase the transparency and fast.
The challenge of Blockchain Using in Cash Waqf.	No rules yet	Less Socialization	Less Socialization
The Strategy of Blockchain Using in Cash Waqf.	Regulation	Regulation	Socialization

According to Table 4, by interviewing several practitioners, either from bank experts, waqf institutions, or IT, the implementation of blockchain system on waqf management has enough high opportunity because of their superiorities. Blockchain functions in financial transactions. By using a blockchain system, waqf collection data will be spread over several servers and have a backup so that the data will be more secure. This explanation follows what was disclosed by Zhu &

Zhou (2016). They said that the blockchain system has a high level of efficiency and security.

According to Table 5 by interview of IT practitioners, the opportunity of blockchain implementation on waqf management either for funds accumulation or funds distributions to Nazhir is high according to several blockchain system superiorities that are explained by the interviewees 05.

Table 5. Blockchain implementation in cash waqf according to practitioners.

Indicator	Practitioner-04 (IT)	Practitioner -05 (IT)
The Opportunity of Blockchain Using in Cash Waqf.	Extremely High	
Blockchain Superiority.	Increasing transparency and waqf management accountability.	Simple transactions, fast, transparent, and safe (cannot be hacked carelessly).
The challenge of Blockchain Using in Cash Waqf.	There are not supporting ecosystem yet. The cost is high (300 million rupiah)	The cost is high. If it changes to be a server, the cost will be high. However, if it is only used for transaction, the cost is not high because it does not need a server.

Table 6. The blockchain implementation of cash waqf according to expert and regulator.

Indicator	Interviewee 07 (BWI)	Interviewee – 06 (Expert)
The Opportunity of Blockchain Using in Cash Waqf.	Has high opportunity to be done.	Can be done ver well
Blockchain Superiority.	Easiness, Transparency, and Velocity.	High velocity and automatic system
The challenge of Blockchain Using in Cash Waqf.	Regulation & Cost	Regulation & Cost
The Strategy of Blockchain Using in Cash Waqf.	Competent parties	Need competent parties, such as accountant institutions, law section, best IT to run

According to Table 6 by interview Expert and regulator. Due to the high potential of cash waqf in Indonesia, people need a system that can ensure waqf management accountability. Blockchain is one of the systems that can ensure cash waqf accountability. According to some experts, the implementation of blockchain technology in cash waqf management has the potential and can increase accountability. Blockchain system superiorities such as

easiness, transparency, and velocity will facilitate *wakif* to track the use of their waqf funds. According to the interview with experts, blockchain will ensure the security and the accountability of waqf fund management.

Wakif's nryption code will function to track when and where the using of thei cash waqf (Interviewees-06).

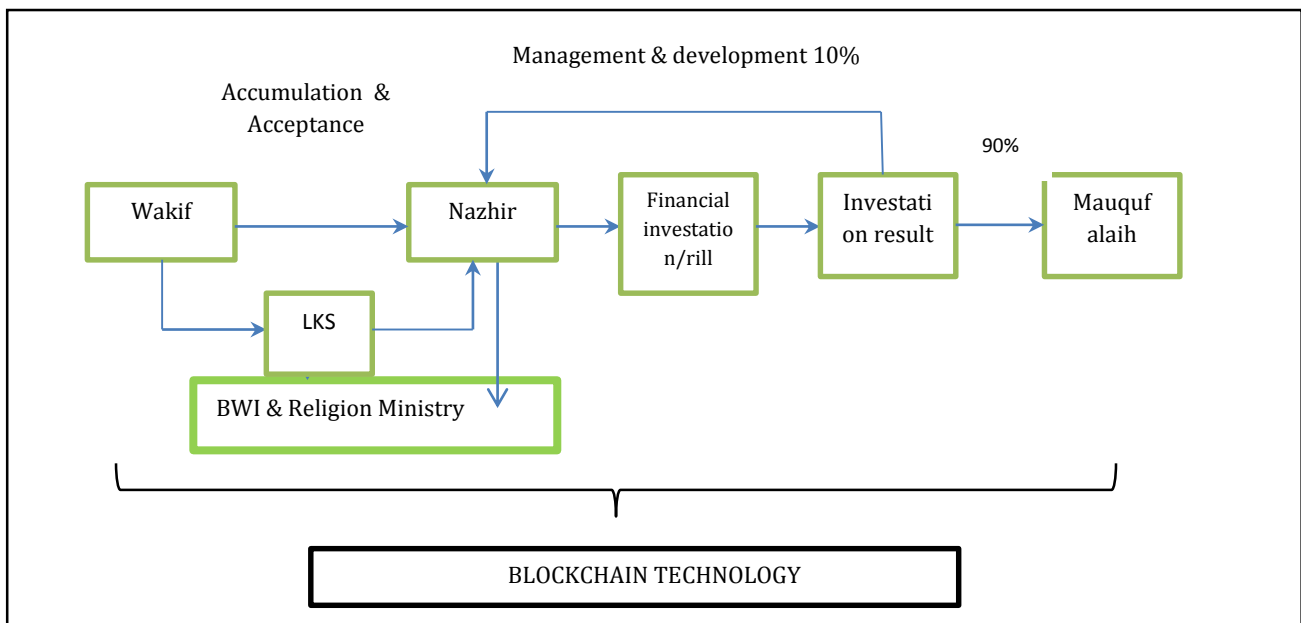


Figure 2. Blockchain Technology Based Cash Waqf Management Model.

The explanation is similar to the study's result of Zulaikha & Rusmita (2018) and Muneeza et al. (2018). They explained that blockchain technology could increase the waqf management accountability. Moreover, Gazali & Ismail (2019) said that perceived usefulness, perceived ease of use, perceived security, and perceived trust are several factors that become blockchain superiority. Nevertheless, the implementation of blockchain to manage waqf in Indonesia

has several obstacles, including less socialization from parties and the absence of regulations, resulting in waqf practitioners still having doubts about using the technology.

Several strategies are explained by experts and practitioners in increasing the implementation of blockchain. The first is the involvement of the human resources competency. LKS PWU should do the human resources selection that is mastering blockchain technology. The second is the socialization done by

the authorities party. The third is the issuance of regulations related to the use of the blockchain system for waqf. It is important to ensure legal certainty for waqf institutions.

According to interview results and literary studies, there is a cash waqf model based on blockchain technology that has more accountability and transparency.

Figure 2 describes about the differences between the cash waqf model in LKS PWU nowadays and Blockchain Technology-Based Cash Waqf Management Model are centralized and distributed databases. On blockchain technology, the recording system uses the accountancy concept, and there is no data deletion and modification (the data will be permanent/immutability). Moreover, all transactions are securely authenticated and verified, business processes recorded on the blockchain are impossible to violate, and all parties agree and validate the transactions that occur. Digital platforms with blockchain technology will be public where all transactions can be seen transparently by the public. The data cannot be changed manually or faked. This explanation is as same as the statement from Sukmana et al. (2020). They said that blockchain could assist the waqf management, such as facilitating audit and verification without cost, cost-efficiency. Compared to the traditional methods, blockchain technology has better governance, lower transaction costs, and greater transparency. Moreover, blockchain technology will increase higher trust by wakif. In conclusion, the cash waqf model based on blockchain technology has the advantage of being more secure. Furthermore, waqf data can be integrated and reported in real-time.

CONCLUSIONS AND RECOMMENDATIONS

Based on research problems related to the accountability and transparency of cash waqf on how is the strategy to increase the accountability and transparency of cash waqf, and the application of blockchain technology in upgrading the accountability and transparency of cash waqf in Islamic banking, the results of the research can be concluded that The accountability of cash waqf management by LKS-PWU of Islamic Bank is at an acceptable level. It is proven by the fulfillment of five accountability indicators including transparency, liability, control, responsibility, and responsivity. However, some aspects, such as data security, must be increased. Blockchain technology can be a solution for several weaknesses had by digital waqf today. Several strategies in increasing the accountability are the selection of competent *nazir*, Accounting SOP literacy, waqf socialization, and blockchain implementation in waqf management either for waqf accumulation or distribution by LKS-PWU. The opportunity of blockchain implementation on waqf management is very big to be done. It is because the blockchain system has a lot of excesses, such as velocity, transparency, and a higher level of security than conventional systems. This research has several limitations in terms of scope of studies which is only in Indonesia, and methodology that focuses only on three Islamic banks. Therefore, further study can be extended to a comparative study using a critical approach that examines the development of cash waqf in several countries.

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