

THE IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY IN THE ZAKAT MANAGEMENT SYSTEM: A CONCEPTUAL RESEARCH

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ABSTRACT: The exponential growth of digitalization leads to the involvement of zakat institutions in using technology in their zakat management. Technology usage, whether in collection or distribution, is necessary to ensure more efficient and systematic zakat management that will contribute to social justice. Generally, zakat affairs in Malaysia are governed and managed by states, leading to technology usage in zakat management depending on the state's law and governance. Blockchain technology, which will be the main focus of the discussion, can also be used for zakat digitization. Various studies also focus on blockchain technology implementation, which is growingly discussed as an effort for zakat digitalization; many zakat issues still need to be addressed among zakat institutions. This includes ineffective collection and distribution and complicated and unsystematic zakat application for the beneficiaries. Thus, this research will focus on blockchain technology to achieve better and more efficient zakat management in Malaysia. Secondary data for this research is collected through multiple references such as books, theses, journals, proceeding papers, annual reports, and related websites. The data collected were analyzed to develop a conceptual framework for effective zakat management through implementing blockchain technology.

KEYWORDS: zakat; blockchain technology; zakat management system

1. INTRODUCTION

The exponential growth of digitalization is leading zakat institutions to use technology in their zakat management. The use of technology, whether in collection or distribution, is necessary to ensure a more efficient and systematic zakat management that contributes to social justice. Generally, zakat matters in Malaysia are regulated and administered by the states, so the use of technology in zakat management will also depend on the laws and administration of each state. The use of technology in zakat institutions started in the 1990s and is steadily increasing to facilitate a more efficient and effective zakat administration system (Sohaimi Mad Saleh, 2003; Mohsin Haji Ahmad, 2006).

Among crises of zakat, zakat distribution is one of them, and truly, the efficiency of zakat distribution is still in question when poverty continues to increase in Muslim society, and the process of *Asnaf* transformation still cannot be optimized (Hairunnizam & Sanep Ahmad, 2009; Teh Suhaila Tajuddin et al., 2016). Moreover, some states have designated mosques for zakat distribution to promote transparency, but zakat is still not distributed

efficiently, especially in the inland area (Teh Suhaila Tajuddin et al., 2016; Rahman et al., 2019).

In addition, the zakat application process should also be simplified. This is because most zakat institutions still use the traditional method for zakat fund application while technology is growing rapidly and the application can be made online (Syarifah Md Yusof et al., 2020). Furthermore, the *asnaf* must also be present when the zakat funds are distributed and must be renewed annually, which burdens the *asnaf*. Therefore, a better system is needed to make the zakat distribution run smoothly and efficiently. Blockchain technology can facilitate an effective zakat management system.

In general, blockchain technology is an open, decentralized public ledger that records and stores every transaction distributed through the blockchain network. The main principles of blockchain technology are immutability, transparency, difficult hacking, and traceability, which help reduce an organization's cost (IBM, 2022; JaeShup On & Ilho Shong, 2017; Micheal Crosby, 2015). The elements of blockchain technology will create strong trust, better security, and transparent and traceable transactions, thus meeting the goal of zakat in Islam. This will facilitate Malaysia's effective Zakat administration system by incorporating Blockchain technology. Most previous research has dealt with Zakat and technology in general and has yet to explain Blockchain technology. Even though Blockchain technology is known and recognized worldwide, studies focusing on Malaysia are unfortunately still scarce, and in fact, the study of Blockchain technology in the Zakat administration system in Malaysia has yet to be explored. Therefore, this paper will fill the gap by exploring the possibility of implementing Blockchain technology in the Zakat administration system. It will also explain the conceptual framework of an effective Zakat administration system by incorporating elements of trust and legislation.

This research will consist of the following sections. First, section 2 will discuss the research background of zakat and blockchain. Then, section 3 will explain the hypothesis development and be followed by the conceptual framework. Last, it will be concluded by a conclusion and impact of the studies.

2. RESEARCH BACKGROUND

2.1. Zakat

Islam classified zakat as one of the significant instruments that contributed to many aspects, including the religious aspect or economic development. The importance of zakat is undeniable as it is repeatedly mentioned in the Quran as a help between Muslims that the wealth will be distributed from the rich to the poor. The intended and eligible beneficiaries that have been stated include the *fuqara'* (the poor), the *masakin* (the needy), the *amilin* (the zakat collector), *muallaf* (newcomers to Islam), *riqab* (enslaved people), *gharimīn* (debtors), *fi Sabilillah* (in the cause of Allah) and *ibn Sabīl* (travelers in need). In addition, Al-Qardhawi (2000) also discussed that zakat is defined as cleansing, growth, development, and purity, where its function is to distribute wealth to eligible parties such as *asnaf*. The collected zakat funds will then be distributed to the beneficiaries to promote and improve the economic standard of living. This is because when an effective zakat management system is applied, it will ultimately increase the standard of living in society through higher purchasing power, specifically among the poor (Muharman Lubis et al., 2018).

Some studies discussed the zakat contribution to daily life in society, such as its impact on social welfare (Tlemsani & Matthews, 2020), zakat's role in guaranteeing social justice (Salim dan Hossain, 2016) as well as playing role in increasing the socioeconomic status of the *asnaf* in education or health (Shirazi, in Qadri dan Bhatti, 2019). This is because as the elements such as education, health, or the improvement of income are

increasing, it will eventually contribute towards the country's economic development of the country thus proving the importance of Zakat.

Therefore, zakat can be classified as an instrument for wealth redistribution which will be distributed to the intended group, and this has been mentioned in many studies such as (Abuznaid, 2009; Boonyamanond dan Chaiwat, 2020; Choudhury, 1989; Sulistyowati, 2019; Yusoff et al., 2019). Following that fact, zakat can play an important role in reducing and alleviating poverty as the zakat distribution will facilitate providing necessities specifically for the poor to increase their standard of living gradually. Thus, zakat will help them escape poverty and hopefully transform them into payers someday. It can be seen that studies of zakat as an important key to reducing poverty have enormously been discussed such as (Ibrahim, 2015; Maulana, 2019; Nazri et al., 2012; Muhammad Faris Zulkifli, 2021). These studies prove that the zakat fund will help to reduce the imbalance in the wealth distribution towards the poor but still, zakat institutions as the responsible party must take action to ensure an effective zakat distribution among *asnaf* specifically in ensuring complete information of *asnaf* information, are consolidated, and the distribution is being implemented just and effective.

It can be seen that most of the studies are focusing on zakat as a poverty alleviation instrument rather than, in actuality, its function being beyond that aspect. According to Ascarya (2019), zakat can be contributed and become a key to solving the financial crisis amidst of COVID-19 pandemic, which has negatively impacted the daily life of society. The effectiveness of zakat can save many sectors such as health, household, business, and financial institutions in Indonesia. This is supported by (Hudaefi et al. 2020; Kayed dan Hassan, 2011; Chapra, 2011; Saeed Awadh bin Nashwan, 2021), who promote Islamic social, and financial instruments such as zakat to be utilized in full effect to reduce the negative effect of the pandemic and thus becoming the main financial recovery tool for the country.

Besides that, due to the pandemic, the need for implementing and adapting technology in the zakat management system has become the main and significant aspect. It could be seen through the efforts to digitalize zakat and how Islamic financial technology, better known as Islamic Fintech, comes into the picture. For that reason, there are various studies done on the development of financial technology, especially that discuss the technology implementation in the zakat collection (Bin Nashwan, 2021). He stressed that the zakat collection was carried out in Saudi Arabia through the e-zakat portal known as ZAKATY. This portal seems well received as the Saudi Arabian community gradually believes in and accepts technological usage. Thus, they are beginning to intend to use the portal as a method of zakat payment. The same goes for Hudaefi and Beik (2020), who explained the effectiveness of digital zakat collection during the COVID-19 pandemic in Indonesia. In addition to promoting technology usage in zakat collection, zakat institutions should take the initiative to conduct a campaign through social media (one of the technology institutions) to encourage zakat payers to pay zakat and increase zakat collection during the COVID-19 pandemic.

Furthermore, there is research by Tika Widiastuti et al. (2021) that analyzed the role of technology in the zakat management system, and one of the main concerns in Indonesia is the optimization of zakat fund management in Indonesia. They stressed that the issues that concern call for intervention in East Java, including lack of *asnaf* information and lack of self-motivation among *asnaf* to improve their standard of living. It is undeniable that the technological adaption is significant, as stated by Aishah Muneeza et al. (2019), and they also urged India to adopt technology in their zakat affair to maximize the zakat collection. Among the suggested technologies are ATM Rice Machines, mobile apps, payment platforms, Islamic fintech, and blockchain technology to be used in the zakat management system in India.

Most of the research can be seen in its implementation in other countries and Malaysia, as one of the Muslim-majority countries is adapting technology in the zakat management system to ensure its effectiveness and efficiency. Marhanum dan Choudry (2018) have discussed the type of technology used in Malaysia's zakat management system, and only certain of the zakat institutions state the zakat information on their websites. Therefore, technological adaption is necessary as this innovation involves unlimited areas such as public, private, and non-financial sectors (zakat institutions) (Muhamad dan Khaliq, 2019; Yahaya dan Ahmad, 2019). Following that, according to Muhammad Ilyas (2019), technological usage should be embraced and practiced as mobile usage and internet access are steadily growing. This will lead to fintech implementation in conjunction with Malaysia's goal of economic digitalization. In addition, technology usage can also be related to infographic usage, which is already used by zakat institutions effectively (Aliff Nawi et al., 2020). This is because the zakat institution in Malaysia is already using social media platforms and websites to ensure more efficient communication between zakat payers and institutions. Nevertheless, this effort is still not optimum as each zakat institution is not using the platform efficiently. This is supported by Mohd Faisal (2014), that observed the effectiveness of zakat websites, and, if used optimally, it will take full effect to spread information on zakat collection and distribution.

Along with the rapid growth of technological transformation, studies are exploring the potential of technological implementation in the zakat management system. Nevertheless, most of the studies are not focusing on Malaysia and mainly involve other countries, especially the ones regarding blockchain technology. In addition, studies of zakat and blockchain technology are only of observation without an in-depth explanation, which calls for studies exploring, specifically focusing on the zakat management system and blockchain technology in Malaysia. Therefore, this research will complement previous research by seeing the potential of blockchain implementation in the zakat management system. This is to encourage and promote the zakat transformation towards systematic and effective management and ultimately stand as the main instrument of the Islamic financial system.

2.2. Blockchain Technology

Along with the technological advances that are seen to be growing, various efforts have been taken to make the zakat management system more efficient and effective. This includes proposing implementing blockchain technology in zakat management (Muhammad Nur Aqmal, 2021; Muhammad Ilyas, 2019; Shifa Mohd Nor et al., 2021; Zulfikri et al., 2021). Generally, blockchain technology is a decentralized open public ledger that will record and store the transactions and then be distributed across every network available in the blockchain system. The fact that blockchain technology is difficult to hack, traceable, secure, and transparent is in line with the main goal of zakat. This ensures that the zakat funds can later be collected and distributed systematically and transparently. Blockchain technology is a technology that is evolving, and nowadays, it can be seen in its adaptation in various sectors such as business systems (Christoph Van den Elst et al., 2017; David Yermack, 2017), media (Donghee Shin, 2020; Velasco, 2016), Islamic finance involving instruments such as sukuk (Felicia Hui, 2021; Aishath Muneeza et al., 2018; Andrew Dahdal, 2021) and in the diamond industry (Martin Smits & Joris Hulstijn, 2020) to track the provenance of the diamond.

Besides that, the call for blockchain technology is also growing as many studies explore it in depth, whether in terms of its structure or the challenges that must be faced. This is to ensure its effective implementation in the future (Omar Alaeddin, 2021). Among the challenges include no clear laws to regulate financial transactions or information privacy security, as well as the issue of technological infrastructure that still requires improvement. All these challenges must be overcome so blockchain implementation in an industry can be done smoothly. Meanwhile, some studies highlight the challenges from a business point

of view (Nitin Gaur, 2020). Although it is clear that this technology is described as a 'disruptive force' to the existing financial sector, the clear and standard definition is still unclear. Due to that, the business sector will face questions such as the transaction's audibility, clarity, and how the blockchain is integrated into the existing business sector. Therefore, to apply this technology, they must first understand the concept of technology, as implementing the blockchain will theoretically lead to new business models and further develop the company.

In addition, the willingness of zakat payers to use blockchain technology has also been researched by Norhaiza Nordin et al. (2021). This zakat-payer-focused study highlighted the factors contributing to their willingness to pay zakat through blockchain technology. It can be concluded that among the factors are performance expectations, cultural influences, and knowledge. These three elements prove that this technology is ready to be adopted by zakat payers, and at the same time, the zakat institution should play a role in providing the technology to achieve an effective zakat collection and distribution. It can be seen that studies related to blockchain technology have begun to be explored from the aspect of zakat management in Malaysia.

Nevertheless, studies in depth must be explored the systematic management of zakat funds, and at the same time, empirical studies related to Malaysia should be collected. It can be seen that blockchain technology is still in its infancy, and it requires more detailed research and data collection so that it can be implemented smoothly. Zakat, as an instrument for wealth redistribution, also needs more effective zakat management. Thus, this research hoped to contribute to observing the potential of blockchain implementation, which eventually facilitates the development of a stronger and more effective zakat management system.

3. HYPOTHESIS DEVELOPMENT

3.1. Legislative Element

One main element that will influence the effectiveness of certain things is the implementation of law or legislation. This is because the attitudes or behavior of an individual toward a certain thing depends on whether it brings benefits or punishment and is also influenced by normative judgment (Tyler, 1990). For that reason, there are many studies discuss the relationship between the implementation of law towards compliance among society in various such as (Mason dan Calvin, 1984; Roben et al., 1990; Benk et al., 2011; Cummings et al., 2009; Mohd Rizal, 2010; Zainol, 2008; Othman et al., 2019; Mohamed Sareye Farah et al., 2017) which proves that importance of law or legislative to observe the attitude of society. Furthermore, studies of the relationship between law and compliance, especially in tax, have been rigorously researched. For instance, some studies explained how the tax could be increased with the strict law implementation among society to ensure they adhere to pay tax (Fischer, 1992; Chan et al., 2000).

Besides, studies of the relationship between law and compliance can be seen in the zakat aspect, such as Kamil Md Idris (2006). He stressed that the relationship between both aspects is built upon perception, where the relationship will become positive with the positive perception among society and eventually increase the compliance of paying zakat. Furthermore, Ram Al-Jaffri et al. (2006) also support this fact by mentioning that compliance with zakat payment is influenced by numerous factors, including moral value, attitude, and perception towards the legislative or zakat law to ensure compliance among Muslims. This calls for the zakat institution to be attentive and take action to strengthen the zakat law to ensure effective zakat management. In addition, plenty of studies explained the importance of law to ensure and increase compliance. This strengthens the fact that to ensure people adhere and comply with something needed, effective law or legislative implementation (Alayuddin, 2008; Nur Azura et al., 2010).

Meanwhile, regarding financial technology or fintech, Kang Yuan and Duoqi Xu (2020) also discussed the effect and importance of legal implementation on China's fintech industry. They stress that lacking a weak legal system in the fintech industry will negatively affect it, disrupting the competitive development of the fintech industry in China. Therefore, to promote the development of the fintech industry, China is encouraged to build laws or legislation on financial and fintech operations and build active governance by developing an intervention team to manage fintech risks efficiently.

This proves the importance of law or legislation and how it will influence technology usage. Therefore, the issue of how the law's implementation will influence blockchain technology as the new technology and, in this discussion effect of the zakat management system. This is since till now, there are still no acts, policies, or legislation on blockchain technology, and in fact, zakat laws in Malaysia are also not uniform between states as the zakat affairs depend on each state respectively (Ahmad Wira, 2019; Alaeddin, 2021). Therefore, this research will fill the literature gap, focusing on combining blockchain technology and the zakat management system. It will observe how blockchain technology legislation will influence effective zakat management. Hypothesis below states that one of the variables to influence effective zakat management through the implementation of blockchain technology.

H1: Element of **Legislative** towards the blockchain technology will influence the effective zakat management system.

3.2. Trust Element

Trust is an element that commonly influences certain activities and can be seen to play a significant role in society (Abdul-Rahman et al., 2000). Generally, trust is when an individual act as he/she is expected responsibly. He/she will meet the expectations of someone who trusts them (Nunkoo et al., 2012). It is built on three main elements: ability, integrity, and motivation (Donni dan Siahaan, 2019). Buchel et al. (2013) also discuss trust, which explains how trust is a cultural norm built from good governance and the influence of an honest and trustworthy party. The issue of trust has been discussed tremendously in multi-disciplined knowledge, including business, society, and economy, where it can be classified as support towards an individual daily life (Putnam, 2000). Trust is significant in various activities where studies have already stressed its importance, such as in economic activities (Werbach, 2018) in the e-commerce sector (D. Gefen, E. Karahanna dan D. W. Straub, 2003; P. A. Pavlou and M. Fygenson, 2006) and in fact, trust is also have been discussed as a basis on the acceptance toward online banking services (S. Dimitriadis & N. Kyrezis, 2011; E. L. Slade, Y. K. Dwivedi, et al., 2015).

Besides that, trust studies can be seen expanding towards zakat, which involves trust toward zakat institutions. This is because trust plays a significant role in socioeconomic and will influence compliance behavior (Bin Nashwan et al., 2021). The same goes for Mohamad Zulkurnain Ghazali (2016), who explained the factors influencing trust in zakat institutions, such as shared value, communication, non-opportunistic behavior, and perception toward the zakat distribution. These factors will be the basis for building the zakat distribution framework. Meanwhile, Bin Nashwan, Hijjattulah, et al. (2021) explained how the element of trust has a positive and strong relationship with the compliance of entrepreneurs to pay zakat. They also mentioned on when the zakat payers trust, the transparency of zakat institutions, religious aspects, and moral sentiment will surely increase the compliance of zakat payment to the zakat institutions.

Furthermore, studies regarding blockchain technology are also being discussed, and it stated that the level of trust using the blockchain technology would be increased due to this technology will update each transaction automatically and be distributed in every blockchain network, and this will protect the business copyright, pattern, and trademark of

a property (Felicia Hui, 2021). Compared to Martin Fleischmann et al. (2019) focus the discussion on blockchain technology among the users which the trust will be affecting positively to the users either in terms of its function (economic system) and emotion (individual and society); therefore, the element of trust is seen to be relevant towards the blockchain technology due to its function in the industry will bring many benefits such as cost reduction, increase system effectiveness and increase the transaction pace.

These studies prove that trust will play a role in the activity, and in fact, many studies focus on trust in general or in zakat. Therefore, to complement the fact, this research will explore the influence of trust towards blockchain technology on the effective zakat management system. This can be seen through how the trust in the zakat institution will increase or not when blockchain technology is used to ensure an effective zakat management system in Malaysia. Therefore, the hypothesis below will be used for this conceptual research framework.

H2: The element of **Trust** towards the blockchain technology will influence the effective zakat management system.

4. TECHNOLOGY ACCEPTANCE MODEL (TAM)

The Technology Acceptance Model (TAM) that was proposed by Davis (1989) was originally an extended theory from the Theory of Reasoned Action (TRA) (Davis, 1986). The model is always significantly important in measuring the acceptance of technology in society and has become the most effective method to measure technological acceptance (Zhang et al., 2018). Therefore, the TAM model divides the factors affecting individual behavioral attitudes into perceived usefulness (PU) and perceived ease of use (PEOU), which significantly impact the adoption of new technology (Ventakesh et al., 2010). The first construct, which is perceived usefulness (PU), has always been defined as the degree to which an individual believes that using a particular system would enhance his or her performance (Davis, 1989). This construct can be easily understood as technology usage can achieve productivity. Meanwhile, perceived ease of use (PEOU) indicates the degree to which an individual believes using a particular system would be free of effort (Davis, 1989). This construct is more towards the benefit of technology that is easy to be used and understand, and from this model, it can be said that if the intended technology is perceived to be easy to use, it would have a greater level of acceptance. Since the model is always has been related to the technological acceptance measurement, blockchain technology acceptance can be measured using this model as the technology is still in the infancy phase and must be explored extensively. Thus, this paper will use TAM to measure the hypothesis stated along the TAM classic variables. By measuring legislative and trust with the PU and PEOU, a better understanding of the blockchain technology usage intention in the Muslim society can be grasped, and this will facilitate the implementation of the zakat management system and hence aid the effective zakat fund management.

5. PROPOSED CONCEPTUAL FRAMEWORK

This study will propose a conceptual framework to explore an understanding of variables that will influence effective zakat management systems by implementing blockchain technology. Therefore, this research found that the elements of trust and the legislative will impact and influence the effective zakat management system. This will contribute to and be used by the zakat institutions in Malaysia for the future implementation of Blockchain technology in the zakat management system.

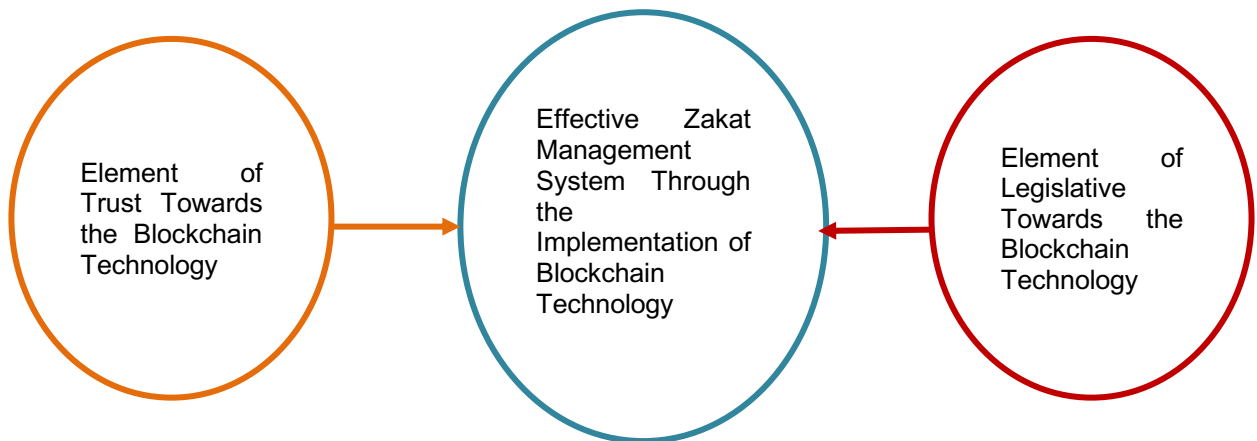


Fig. 1. Conceptual Framework for Blockchain Implementation in the Zakat Management System.

6. CONCLUSION

To sum up, this research proposes a conceptual framework to explore the elements that will influence the implementation of blockchain technology in the zakat management system. Therefore, through the literature review, this research found that two main elements are legislation and trust. Both elements will influence the effective zakat management system by implementing blockchain technology. These two elements then can be measured with the Technology Acceptance Model (TAM) to capture the usage intention among society to help accelerate the implementation of the zakat management system. As studies about zakat and blockchain technology are still scarce in research, this study will come in handy to explore and contribute to the literature that was focusing the combination of the technology and zakat in research. Most studies focus on technology or zakat without combining both aspects. Plus, research on Blockchain technology is still rare, particularly in the zakat management system in Malaysia; hoping for this research to be a guide for zakat institutions in Malaysia to implement blockchain technology in the future to facilitate a more effective zakat management system in Malaysia. Since blockchain technology is still in its infancy, this study will help fill the literature gap, especially studies on blockchain technology in Malaysia. In addition, this study addresses the aspect of the Zakat management system, which would be one of the values of this study to guide the future implementation of Blockchain technology in the Zakat management system. So far, research has yet to address the legislative element, and this research explores this aspect to see how the legislative aspect will contribute to an effective Zakat administration system through the implementation of Blockchain technology.

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