ҒТАМР/SRSTI/ГРНТИ 06.73.15

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ЦИФРЛЫҚ ДӘУІРДЕГІ УАҚЫП ИНСТИТУТЫ: БЛОКЧЕЙН ЖӘНЕ УАҚЫП ИНТЕГРАЦИЯСЫ

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مؤسَّسات الوقف في العصر الرَّقميِّ التَّكامل بين تقنية البلوكشين والوقف

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WAQF INSTITUTIONS IN THE DIGITAL ERA: BLOCKCHAIN AND WAQF INTEGRATION

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ИНСТИТУТЫ ВАКФА В ЦИФРОВУЮ ЭРУ: ИНТЕГРАЦИЯ БЛОКЧЕЙНА И ВАКФА

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Аңдатпа. Ауыр әкімшілік процедураларға байланысты мұқтаждарды және мұсылман қауымының экономикалық дамуын қолдау құралы ретінде уақып жарналарының азаюы байқалды. Дегенмен блокчейн технологиясының пайда болуы бос тұрған уақып активтерін жандандыру, осылайша, кірісті арттыру және халықтың әл-ауқатын жақсарту үшін әлеуетті ұсынады. Бұл мақалада уақып, әсіресе блокчейн басқаруында инновациялық қаржылық технологияларды пайдалану қарастырылады. Басты мақсат – бар кедергілерді жою және цифрлық дәуірде уақыпты басқарудың жаңа әдістерін енгізу. Осы мақсатта мақалада мысал ретінде финтерра уақып тізбегіне ерекше назар аудара отырып, уақып және блокчейн тұжырымдамалық шолуы берілген. Бұл зерттеуде уақып тізбегін мұқият зерттеп, деректер жинау үшін онлайн зерттеулер қолданылады. Ол уақып мекемелері, бенефициарлар мен донорлар арасындағы ашықтықты нығайту, осылайша уақыпты басқарудың өнімділігі мен тиімділігін арттыру үшін уақып тізбегі бойынша цифрлық үдерістерді енгізуді ұсынады. Бұл мақалада блокчейн инновациялық технологиясын уақып басқаруымен біріктіру мүдделі тараптар арасындағы сенімді арттырып, қаражат жинауды жеңілдетеді әрі ислам қоғамының тұрақты дамуын қолдайды.

Түйін сөздер: уақып, блокчейн, уақып институты, инновациялық технологиялар, цифрлық дәуір, финтерра.

الملخَّص: يُعدُّ الوقف وسيلة لدعم المحتاجين وتعزيز التَّنمية الاقتصاديَّة داخل المجتمعات المسلمة، لكنَّه شهد تراجعًا في المساهمات بسبب الإجراءات الإداريَّة المعقَّدة. ومع ذلك، فإنَّ ظهور تقنية البلوكشين يوفِّر إمكانيات واعدة لإحياء الأصول الوقفيَّة المتعطِّلة، ممَّا يعزّز الدَّخل ويحسن رفاهية السُّكان. يستكشف هذا البحث تطبيق التُّكنولوجيا الماليَّة المبتكرة، وخاصَّة البلوكشين، في إدارة الوقف. إنَّ الهدف الأساسي هو معالجة الحواجز القائمة وتقديم تقنيات جديدة لإدارة الوقف في العصر الرقميّ!

ولتحقيق ذلك يقدِّم البحث مراجعة مفاهيميَّة لكلٍّ من الوقف والبلوكشين، مع التَّركيز بشكل خاصٍّ على سلسلة «واكف تشين» التَّابعة لشركة فنتيررا كدراسة حالة. باستخدام البحث المكتبي عبر الإنترنت لجمع البيانات، يفحص هذا البحث سلسلة «واكف تشين». ويقترح تطبيق العمليَّات الرَّقميَّة من خلال «واكف تشين» لتعزيز الشَّفافيَّة بين مؤسَّسات الوقف والمستفيدين والمتبرّعين، ممَّا يحسن الأداء والكفاءة في إدارة الوقف.

يبيِّن البحث أنَّ دمج تقنية البلوكشين المبتكرة مع إدارة الوقف سيعزِّز الثِّقة بين أصحاب المصلحة، ويسهِّل جمع التَّبرعات، ويدعم التَّنمية المستدامة للمجتمع الإسلامي.

الكلمات المفتاحيَّة: الوقف، البلوكشين، مؤسَّسة الوقف، التِّكنولوجيا المبتكرة، العصر الرَّقمي، فنتيررا.

Abstract. Waqf, as a means to support the needy and sustain economic development within Muslim communities, has seen diminished contributions due to cumbersome administrative procedures. However, the advent of Blockchain technology offers promising potential to revitalize idle Waqf assets, thereby enhancing income and improving the well-being of populations. This paper explores the application of innovative financial technology, specifically Blockchain, in the management of Waqf. The primary objective is to address existing barriers and introduce new techniques for managing Waqf in the digital era. To this end, the paper provides a conceptual review of both Waqf and Blockchain, with a particular focus on the Finterra Waqf-chain as a case study. Utilizing online desk research for data collection, this study scrutinizes the Waqf-chain. It proposes the implementation of digital processes through the Waqf-chain to enhance transparency among Waqf institutions, beneficiaries, and donors, thereby improving performance and effi-

ciency in Waqf management. The paper posits that integrating innovative Blockchain technology with Waqf management will foster trust among stakeholders, facilitate fundraising, and support the sustainable development of Islamic society.

Keywords: Waqf, Blockchain, Waqf Institution, Innovative Technology, Digital Era, Finterra.

Аннотация. Из-за обременительных административных процедур наблюдалось уменьшение взносов Вакф, как средство поддержки нуждающихся и поддержания экономического развития мусульманских общин. Однако появление технологии Блокчейн предлагает многообещающий потенциал для оживления простаивающих активов Вакфа, тем самым увеличивая доходы и улучшая благосостояние населения. В данной статье исследуется применение инновационных финансовых технологий в управлении Вакфа, а в частности Блокчейна,. Основная цель — устранение существующих барьеров и внедрение новых методов управления вакфом в цифровую эпоху. С этой целью в статье представлен концептуальный обзор Вакфа и Блокчейна, с особым акцентом на цепочке Финтерра Вакф (Finterra Waqf-chain) в качестве примера. Данное исследование тщательно изучает цепочку вакфов (Waqf-chain), используя онлайн-исследования для сбора данных. Он предлагает внедрение цифровых процессов через цепочку Вакфов для повышения прозрачности между учреждениями вакфа, бенефициарами и донорами, тем самым повышая производительность и эффективность управления Вакфом. В документе утверждается, что интеграция инновационной технологии Блокчейн с управлением Вакфом повысит доверие между заинтересованными сторонами, облегчит сбор средств и поддержит устойчивое развитие исламского общества.

Ключевые слова: Вакф, Блокчейн, Институт Вакфа, Инновационные технологии, Цифровая эра, Финтерра.

1.1 INTRODUCTION

Waqf has played a significant role in enhancing the welfare of marginalized populations through its institutions. The primary objective of Waqf institutions, as managing entities, is to improve the social welfare of less-privileged individuals, particularly the needy in isolated areas, by funding various religious activities. Additionally, Waqf has contributed to the establishment of numerous public assets, including hospitals, schools, roads, and other services (Mohsin, 2019). In the past, Waqf was an effective means of assisting the needy and promoting economic development within Muslim societies, significantly improving the quality of life and reducing poverty (Rashid 2018).

The central factor that motivates endowers to endow movable or immovable properties as Waqf is the presence of good governance and transparency in these institutions (Elasrag, 2019). Without these, the impact on the development of poor populations is diminished. Waqf assets worldwide are estimated to be nearly 1 trillion USD, which has the potential to significantly reduce poverty for many groups (Finterra, 2018). However, many Muslim countries remain less developed due to idle Waqf assets that are not efficiently utilized by Waqf administrators, Waqf institutions, or due to a lack of financing (Habib and Ahmad 2020).

Recently, the incorporation of digital technology into Islamic finance has provided new solutions for many Waqf stakeholders. Blockchain, an innovative technology, has rapidly gained traction, offering hope for the activation and revival of idle Waqf assets.

This, in turn, enhances income, improves the well-being of populations, reduces poverty among Muslims, and fosters optimism among Waqf institutions regarding asset management and fundraising. Advanced Blockchain technology operates through trusted intermediaries within large, decentralized networks. The high level of trust in virtual programs stems from the ability to conduct fast transactions with minimal fees, even when the involved parties do not trust each other. Additionally, the absence of a central authority facilitates the widespread adoption of this network.

The aim of this paper is to address existing obstacles and explore novel techniques for managing Waqf in the emerging digital era. It will specifically investigate the concept of Blockchain as innovative technologies that can enhance the domain of Islamic social finance. Methodologically, this conceptual paper will review the literature on both Waqf and Blockchain, with a particular emphasis on the Finterra Waqf-chain as a case study. Utilizing library research as the primary source of data, this study aims to scrutinize the Waqf-chain and fulfill the objectives outlined in this research endeavor.

1.2 LITERATURE REVIEW

1.2.1 Waqf Governance in Malaysia

In Malaysia, Waqf institutions operate as units, departments, or subsidiaries under the State Islamic Religious Councils (SIRCs). There are 14 SIRCs distributed across 13 states and three federal territories. Each SIRC falls under the jurisdiction of the Sultan of the respective state, who holds the ultimate authority over Islamic affairs. The daily operations of the SIRCs are managed by appointed officials acting on behalf of the Sultan. According to the Federal Constitution, SIRCs serve as the sole Mutawallī (trustee) and accountable entity for Waqf assets. Nonetheless, SIRCs can delegate specific Waqf projects or assets to other parties to act as Mutawallī while retaining their supervisory role. The federal government has established the Department of Waqf, Zakāt, and Hajj (JAWHAR) under the Prime Minister's Department to facilitate coordination among SIRCs and enhance the management, delivery, and outcomes of services (Aziz & Ali, 2018). However, JAWHAR itself does not manage any Waqf assets (Malaysian Accounting Standards Board, 2014).

The Federal Constitution delineates the rights, roles, and responsibilities of the State Islamic Religious Councils (SIRCs), yet the implementation and execution of these provisions can vary among SIRCs. The federal system permits states to develop their own legislation and management practices for Waqf, leading to diverse governance structures and mechanisms across different states. For instance, some SIRCs have fully adopted the corporatization model for Waqf administration, establishing subsidiaries to manage Waqf assets. In such cases, their governance structures resemble conventional corporate governance models but incorporate an "Islamic" dimension (Iqbal & Mirakhor, 2004).

For example, the Selangor Islamic Religious Council (MAIS) has established Perbadanan Wakaf Selangor (Selangor Waqf Board), a subsidiary specializing in the administration of Waqf assets. This structure introduces three layers of reporting and decision-making: first, the chief executive officer of the subsidiary reports to the board of directors; second, the board of directors reports to the SIRC; and third, the SIRC (specifically, the board/council) reports to the Sultan. In contrast, non- or partially corporatized Waqf institutions, such as the Council of Islam and Malay Customs of

Terengganu (MAIDAM), have only two layers of reporting and decision-making: the top manager reports to the board, and the board reports to the Sultan. In this structure, the top manager is typically the secretary of the board. Decisions made by the SIRCs are discussed by the board and then forwarded to the Sultan for endorsement or approval (Mahadi et al., 2018).

A different model of reporting and decision-making arises when SIRCs authorize a third party to act as a Mutawallī. For instance, the Johor Islamic Religious Council (MAIJ) grants a Mutawallī license to Waqf An-Nur Corporation Berhad (WANCorp). WANCorp is obligated to provide regular reports to MAIJ and include a MAIJ representative on its board of directors.

1.2.2 Issues and Challenges in Waqf Institution

The institutionalization of Waqf has encountered several challenges, one of which concerns the methods employed to raise cash Waqf funds. Cash Waqf funds have been raised through both conventional and online means. However, the conventional method has exhibited weaknesses, primarily stemming from issues of trust, information availability, and the risk of theft. The lack of trust is often linked to concerns regarding the authenticity of the Waqf collector's permit, raising doubts about the legitimacy of the fundraising effort. Meanwhile, limited information dissemination capabilities hinder the ability to effectively promote Waqf projects, reducing public awareness and participation. These factors contribute to the vulnerability of cash Waqf funds to fraud and theft.

SIRCs have not fully capitalized on the opportunities to disseminate Waqf information to both Islamic and non-Islamic communities. The lack of a robust and efficient method for broadcasting Waqf projects results in prolonged fundraising efforts and delays in project completion. Moreover, the conventional approach is deemed inadequate in light of technological advancements and the digital lifestyle prevalent in Malaysia today. This perception is supported by studies conducted by Mohd. Faisal et al. (2014) and Muhd Eizan et al. (2014), highlighting the need for a more effective Waqf collection system aligned with contemporary technological developments.

Mohd. Faisal et al. (2014) discovered that Waqf institutions often lack the internal expertise necessary to implement online cash Waqf initiatives, relying instead on consultants for such expertise. Furthermore, these consultants face limitations in assisting numerous institutions in developing online Waqf platforms, as many of these institutions are not recognized as legal Waqf trustees. To address these challenges, the study suggests leveraging internet banking and mobile banking to support the implementation of online cash Waqf. Additionally, the researchers highlight concerns over the validity of Waqf when promoting online cash Waqf, indicating that this issue also needs to be addressed to ensure the legitimacy and acceptance of digital Waqf contributions.

According to Muhd Eizan et al. (2014), only two State Islamic Religious Councils (SIRCs), specifically the Selangor Islamic Religious Council and the Johor Islamic Religious Council, have integrated online and digital technologies into their Waqf management practices. Johor, in particular, serves as a prominent example in Malaysia for utilizing an information system to manage Waqf projects. However, this system is not comprehensive and does not encompass all Waqf activities, especially

regarding the distribution of accumulated funds. Consequently, issues of transparency remain unresolved.

1.2.3 Blockchain: Mechanism and Characteristics

Blockchain operates as a decentralized network comprising interconnected nodes that collectively verify, record, and store blocks of data. These nodes, which can be laptops, computers, or servers, participate in maintaining the blockchain. When a node (or user) modifies the data, such as executing a purchase order or entering new information, the alteration is documented in a block. This modification is identified by a hash, a mathematically generated alphanumeric string derived from a sequence of characters. The hash encapsulates transaction details such as the sender, recipient, date, and other pertinent information (Salmon & Myers, 2019). Once created, the hash is stamped onto the block, linking it to the preceding block in the chain. A block is appended to the chain once it is verified by the nodes through a consensus mechanism (Zīle & Strazdiņa, 2018). Theoretically, the processes of recording, forging, and verification continue indefinitely. The nodes maintain a complete record of the database, which is regularly updated and verified.

A public blockchain distributes its database across numerous nodes situated in diverse locations, eliminating the presence of a central point of failure or authority. Conversely, a private blockchain also utilizes multiple nodes and a distributed network, but these nodes are typically predetermined, known computers, or servers. Consequently, while the network remains decentralized, decision-making and responsibilities are centralized, as the nodes can be readily controlled, and access to the blockchain necessitates approval from master nodes (Alam et al., 2019).

Blockchain is renowned for its immutability and security, as once blocks are verified, they cannot be altered without reconstructing preceding blocks (Hileman & Rauchs, 2017). In a public blockchain, modifying data without the collaboration of a majority of participating nodes is theoretically implausible, necessitating substantial costs and resources. Additionally, blockchain offers benefits such as data traceability and transparency, database distribution, and the removal of intermediaries (Keerati, 2017).

1.3 Integration of waqf and blockchain

The emergence of blockchain technology has introduced novel avenues for capital generation through a mechanism known as “Initial Coin Offering” (ICO). This approach employs the concept of crowdfunding, which entails sourcing funds for a project or enterprise by gathering numerous small investments from a large pool of individuals, typically facilitated online. Thus, an ICO represents a crowdfunding variant that presents an alternative avenue for funding. In 2017 alone, ICOs amassed an estimated total exceeding US$6 billion in capital, surpassing alternative financing methods by over fivefold and experiencing a growth in popularity exceeding one hundredfold (Rashid, 2018).

While various crowdfunding mechanisms such as mail-order subscriptions and benefit events exist, the term “ICO” specifically pertains to internet-mediated platforms. This contemporary crowdfunding model typically involves three primary actors: the project initiator proposing the development idea or project, individuals or groups providing support for the idea, and a moderating organization (referred to as the “platform”) facilitating the collaboration to

launch the idea. Central to this crowdfunding approach is the 'blockchain platform', which has emerged as a significant disruptor in the banking and financial sectors (Rashid, 2018).

1.3.1 Finterra Model of Blockchain for Waqf Institution

Finterra, founded in 2017, is a financial technology company with operational bases across Asia, the Middle East, Europe, and the United States. The company specializes in leveraging sophisticated IT solutions for project development, fundraising, and investment structuring. It holds ISO27001 and ISO20000 certifications and has obtained Shariah compliance certification from a Shariah advisory body. Finterra presently boasts a digital wallet subscriber base of 700,000 (Finterra, 2022).

Finterra has created an in-house blockchain solution called Gallactic Blockchain, designed with an open-source ecosystem and compatibility with other blockchains like Ethereum. Utilizing the Gallactic Blockchain, Finterra has developed the WAQF Chain, aiming to harness Waqf assets securely, transparently, and efficiently (Finterra, 2018). Pilot initiatives for the Waqf Chain were effectively initiated in Malaysia, Turkey, Oman, Tanzania, Kenya, and South Africa during 2019 (Islamic Finance News, 2020).

The process of administering Waqf on the WAQF Chain can be summarized as follows (Finterra, 2018). Initially, the Waqf board identifies a feasible project or asset and seeks licensing from the relevant SIRC to act as a Mutawallī. Subsequently, the board prepares a detailed prospectus outlining key project aspects such as the administrator, endowment period, asset details, expected benefits, and other relevant information. Additionally, various entities including NGOs, universities, or financial institutions may propose Waqf campaigns on the blockchain. Following this, an independent external auditor reviews the prospectus, and revisions are made as per the auditor's suggestions. Upon auditor approval, the Waqf board and auditor jointly appoint a fund manager responsible for producing and publishing a project portfolio on the WAQF Chain. Pre-qualified contributors have the option to select from four investment vehicles (cash Waqf, Muḍārabah investment, Qarḍ Ḥasan, or Ṣukūk) when making contributions to the project. These donations are deposited directly into a trust account with the firm's partner banks. If the soft target is achieved by the fundraising deadline, the funds are released to the fund manager; otherwise, they are refunded to the contributors. Finally, upon meeting the soft target and completing due diligence, smart contracts for each project are automatically activated.

The smart contracts generate project-specific ERC777 tokens (FIN), representing contributors' indivisible stakes in the project. These tokens reflect their credit or returns if contributions are in the form of loans, investments, or sukuk. Subsequently, the fund manager engages a contractor for the construction or development of the Waqf asset, which upon completion, is transferred to an asset manager. As the Waqf project reaches completion, contributors can monitor its progress on the Waqf Chain. Project owners are obliged to provide periodic reports, with failure to comply risking blacklisting. Contributors can engage through comments, inquiries, or feedback in the project's comment section and rate it on a scale of one to five. This entire process is outlined in Figure 1.

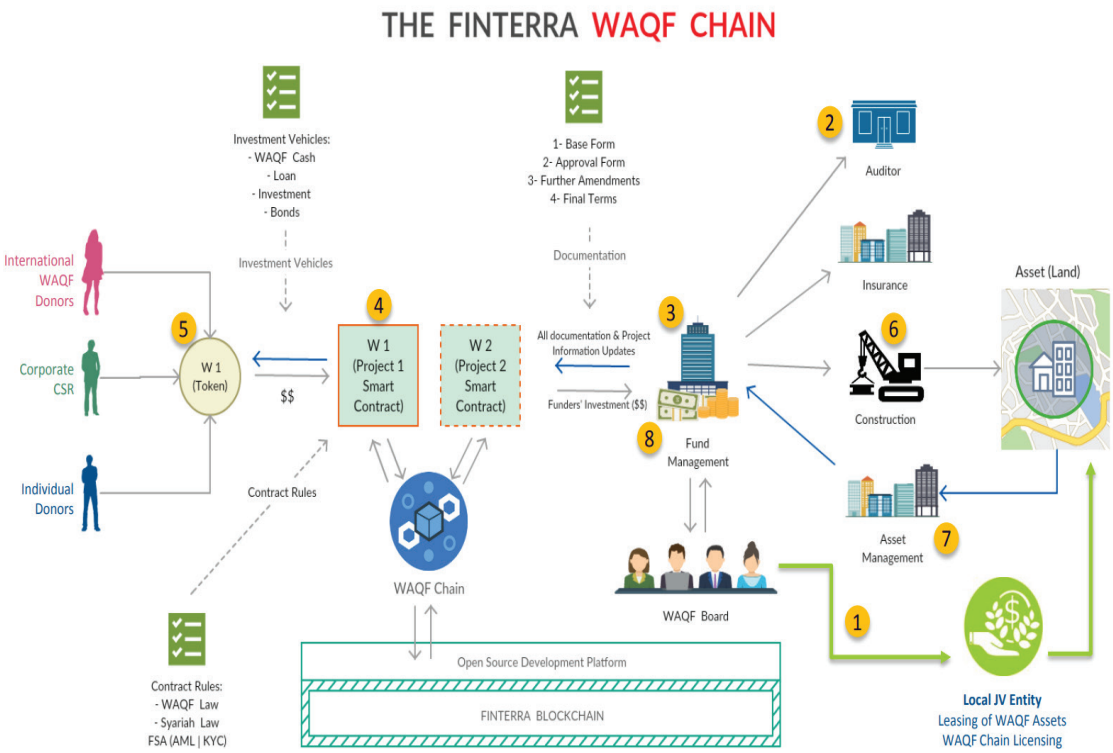

Figure 1: The Finterra Waqf Chain

1.4 CONCLUSION

The research highlights the significance of utilizing Blockchain as a platform for developing Islamic social finance and particularly Waqf institution. Blockchain presents a significant opportunity to enhance and develop the underutilized assets of Waqf. The Finterra model of Blockchain holds promise for application across various jurisdictions in the Muslim world to optimize the potential and benefits of Waqf for the broader Ummah. Blockchain technology is poised to enhance the significant influence of widespread adoption as a tool crafted to support Waqf-related endeavors globally. Similar to any emerging technology, blockchain initially disrupts existing practices and has the potential to foster the evolution of broader ecosystems encompassing both traditional methodologies and innovative solutions. Its considerable potential stems from its cost-effectiveness, traceability, facilitation of peer-to-peer transactions, data integrity protection against tampering, and near eradication of human error. The global community must acknowledge the significant potential of blockchain technology to revolutionize the entire value chain within Waqf-related projects. It is incumbent upon academics, developers, and practitioners to actively educate the public, including business leaders, about the capabilities of blockchain technology. This entails a transparent evaluation of blockchain's strengths, as well as candid acknowledgment when conventional solutions may be more suitable. Clearly, this suggests that blockchain technology has the potential to future-proof and improve existing Waqf initiatives on a global scale.

References

Alam, N., Gupta, L., & Zameni, A. (2019). Fintech and Islamic Finance: Digitalization, Development and Disruption. Palgrave Macmillan. https://books.google.co.id/books?id=sZGzDwAAQBAJ

Aziz, A., & Ali, J. (2018). A Comparative Study of Waqf Institutions Governance in India and Malaysia. Intellectual Discourse, 26(2), 1229-1246.

Brito, J., & Castillo, A. (2013). Bitcoin: A Primer for Policymakers. Mercatus Center. https://books.google.co.id/books?id=yC-nAwAAQBAJ

Elasrag, Hussein. 2019. "Blockchains for Islamic finance: Obstacles & Challenges." MPRA.

Finterra. (2018). Social solution for blockchain. Finterra.

Finterra. (2022). About Us. Retrieved 21 May from https://finterra.org/about_us/

Habib, Farrukh, and Abu Umar Faruq Ahmad. 2020. "Using Blockchain and Smart Contracts for Waqf Institutions." In Financial Technology and Disruptive Innovation in ASEAN, 225-244. IGI Global.

Hileman, G., & Rauchs, M. (2017). Global blockchain benchmarking study. Cambridge Centre for Alternative Finance.

Iqbal, Z., & Mirakhor, A. (2004). Stakeholders model of governance in Islamic economic system. Islamic Economic Studies, 11(2), 43-63.

Islamic Finance News. (2020). IFN Financial Innovation Report. Redmoney. https://www.capitalmarketsmalaysia.com/wp-content/uploads/2021/06/IFN-Financial-Innovation-Report-2020.pdf

Keerati, R. (2017). Preparing for blockchain: challenges and alternatives for financial regulators. https://ctsp.berkeley.edu/files/2017/08/CTSP-Blockchain-Policy-Whitepaper.pdf

Mahadi, R., Sariman, N. K., Noordin, R., Mail, R., & Fatah, N. S. A. (2018). Corporate Governance Structure of State Islamic Religious Councils in Malaysia. International Journal of Asian Social Science, 8(7), 388-395.

Malaysian Accounting Standards Board. (2014). Waqf (MASB Research Paper).

Mohd. Faisal, M.Y., Mohd. Faiz, M.Y., Mazlin Hani, H. and Nurhanani, R. (2014) Cash Waqf and Infaq: A Philanthropy in Malaysia. Jurnal Kemanusiaan, 12(1), pp. 1-10.

Muhd Eizan Shafiq, A. A., Muhammad Muzakkir, O., Mohd. Ikhsan, M. R., Wan Azmi, W. A. and Mohd. Hafiz, A. W. (2014). Economics of Waqf Tree Information Management System (WaTIMS): A Proposed WaTIMS Model for Practitioners and Future Researchers. Paper Presented at WCIT2014 2nd World Conference on Islamic Thought and Civilization Rise & Fall of Contemporary States of Muslim Affairs. Kolej Universiti Islam Sultan Azlan Shah, Casuarina@Meru, Ipoh, Perak, 18 August.

Mohsin, Magda Ismail Abdel. 2019. "Waqfintech and Sustainable Socio-Economic Development." International Journal of Management and Applied Research 6 (3):130-141.

Rashid, S. K. (2018). Potential of Waqf in contemporary world. Journal of King Abdulaziz University: Islamic Economics, 31(2).

Rashid, Syed Khalid. 2018. "Potential of Waqf in Contemporary World." JKAU: Islamic Econ., Vol. 31 No. 2, pp: 53-69.

Salmon, J., & Myers, G. (2019). Blockchain and Associated Legal Issues for Emerging Markets. https://openknowledge.worldbank.org/handle/10986/31202

Zīle, K., & Strazdiņa, R. (2018). Blockchain Use Cases and Their Feasibility. Applied Computer Systems, 23(1), 12-20. https://doi.org/10.2478/acss-2018-0002