Smart Sukuk on Blockchain Technology: A Systematic Literature Review

Retno Dyah Pekerti[1], Missi Hikmatyar[2], Dede Rizal[3], and Isnaen Nurzaman[4]

[1,2,4]Universitas Cipasung, Tasikmalaya, Indonesia
[3]Universitas Perjuangan, Tasikmalaya, Indonesia
retnodyahp@uncip.ac.id

Abstract. Smart Sukuk is an innovation in conventional Sukuk that utilizes blockchain technology. This technology aims to enhance efficiency, reduce costs, and increase transparency, making it accessible to small and medium-sized enterprises (SMEs). Smart Sukuk allows increased participation of retail and corporate investors in Sukuk issuances. Blossom Finance is the pioneer in issuing Sukuk using blockchain technology, with its first application in the Baitul Maal wat Tamwil (BMT) Bina Ummah, Indonesia. This study aims to explore the trends and potential of smart Sukuk from 2018 to 2023. A systematic literature review was conducted to uncover the current research trends in smart Sukuk. Using the Semantic Scholar database, 23 selected articles were collected and analyzed using VOSviewer. The analysis results indicated that research on smart Sukuk still needed to be improved, particularly in technology-based Sukuk issuance and the opportunities and challenges it presented. One of the reasons for this is the need for clear regulations regarding the use of blockchain technology in smart Sukuk.

Keywords: Blockchain, Financial Technology, Smart Sukuk.

1 INTRODUCTION

Since 2002, Indonesia has shown consistency in issuing sukuk. As of July 2020, the issuance value of the sukuk was Rp1,041 trillion, with state bonds of Rp892 trillion [1], [2]. With this consistency and improvement, in 2019, Indonesia was the first to issue financial technology (fintech) sukuk with micro bond blockchain technology called Smart Sukuk [3]. Academics categorize FinTech business models into two types: vertical business models (FinTech vertical) based on the field of financial services [4] and horizontal business models (horizontal FinTech) based on functional areas and emerging technologies [5]. FinTech verticals include payments, wealth management, collective financing, lending, insurance, capital markets [4], and digital and property banking business models [5], [6].

Blockchain technology in smart sukuk is limited to Information Technology-based transaction bookkeeping services that record and store transaction evidence or ledger data distributed via computer networks both privately and publicly (According to POJK

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Number 37/POJK.04/2018). This research aims to explore the trend of smart sukuk, challenges, regulations, and the future potential of fintech, using data based on Semantic Scholar from 2018 to 2023. The (SLR) method was used in this study.

1.1 Sukuk

Sukuk, adhering to Sharia principles, differs from conventional bonds by granting holders undivided asset ownership, leading to gains and losses [7], [8]. These sukuk rely on specific assets and require a Sharia agreement to avoid prohibited elements like Maysir, Gharar, and Usury [9]. Sukuk operates on profit and loss sharing, granting each certificate a share of profits or losses from assets, projects, or trade activities governed by Islamic finance contracts [10]. Investment Sukuk, defined by AAOIFI in Sharia Standard No. 17, represents undivided ownership of real assets, benefits, or specific project assets or investment activities [1].

Sukuk, once primarily accessible to large entities, is now widely available through Blossom's SmartSukuk™ platform. Unlike bonds, Sukuk relies on asset ownership and periodic profit distributions, not debt and interest payments [11]. The global Islamic finance industry has significantly grown in the past two decades, mainly due to the Sukuk sector which contributes to financing, investment, and development both locally and globally [12]. In 2021, the global Sukuk market reached a new record with a total issuance of around US$188.12 billion, a 7.72% increase over the previous year, driven primarily by government economic stimulus measures despite concerns about inflation and rising commodity prices, including oil [13].

Issuing and managing Sukuk is more complex than traditional bonds due to various unique terms, conditions, and operational mechanisms dictated by the underlying Sharia contract. Figure 1 illustrates the distinct processes involved in Sukuk issuance. This complexity increases operational risk, including legal risks stemming from incomplete or ineffective legal documents and sharia non-compliance risks at each stage of the Sukuk cycle [8].

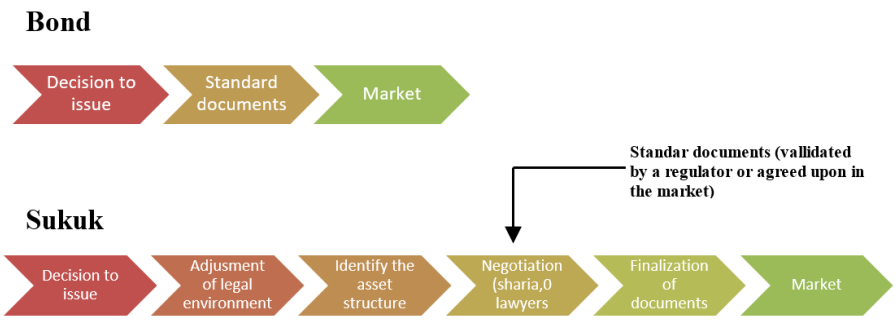

Fig. 1. Comparison between The Process of Issuing Bonds and Sukuk.

1.2 Blockchains

The blockchain business model is a common topic in FinTech research. It finds applications in various financial sectors, including cryptocurrencies, clearing and settlement in derivatives markets, insurance, trade finance, real estate, and smart contracts [6]. Blockchain enhances transaction security and facilitates faster, cost-effective money exchange for conventional banking services, both locally and internationally [4]. It also empowers FinTech startups, making them more transparent, extending their reach, and increasing efficiency compared to traditional methods [14].

Blockchain, with tokenization, offers a potential solution to address inefficiencies in Europe's bond issuance value chain [15]. Additionally, there is an exploratory analysis of sukuk tokenization, using a case study with a primary smart contract for Murabaha sukuk on Ethereum, highlighting the feasibility concerns of issuing sukuk through tokenization [16]. These "smart" contracts, defined digitally with protocols, revolutionize finance by providing transparency, decentralization, validation, immutability, and efficiency, benefiting various financial areas, including Sukuk transactions [17]. All Sukuk-related documents and information are securely stored in issuer and Central Registration Agency chains, as a result of blockchain technology's capabilities [10].

1.3 Smart Sukuk

Smart Sukuk, utilizing blockchain technology, enhances efficiency, transparency, and cost reduction. It enables various entities, including SMEs, social projects, and institutions, to issue sukuk with innovative technology [18]. Blossom Finance pioneered this smart sukuk innovation, revolutionizing the traditional sukuk issuance process through Blockchain with Ethereum smart contracts [19]. Smart contracts contribute to global sukuk acceptance by improving efficiency, with a primary focus on standardizing and automating accounting, legality, and overhead payments, all backed by licensed legal entities in the issuing country [20].

These smart contracts are computer programs that automatically execute terms and conditions without manual intervention or third-party involvement [21]. Contract terms are encoded in a computer algorithm and enforced based on automated instructions within specified parameters. Like blockchain, smart contracts offer high security through multiple validations, reducing manual errors and enhancing cost efficiency. Reports indicate potential annual savings of up to USD 16 billion in banking and insurance costs through blockchain applications. Furthermore, these contracts are self-executing, immutable, and tamper-proof once executed, ensuring enhanced security [22].

2 METHODS

This study employed a literature review using the SLR (Systematic Literature Review) technique to provide a transparent and scientific literature review. SLR was used to analyze quantitative and qualitative data using meta-analysis to explore Islamic Fintech business trends and challenges in selected studies from the Semantic Scholar database

[23]. This SLR method consists of four stages: identification, screening stage, feasibility, and participation or data mining.

All smart sukuk articles published between 2018 and 2023 were identified and 23 articles passed the screening stage. In the testing phase using VOSviewer, they were divided into three clusters with 23 related objects.

3 RESULTS AND DISCUSSION

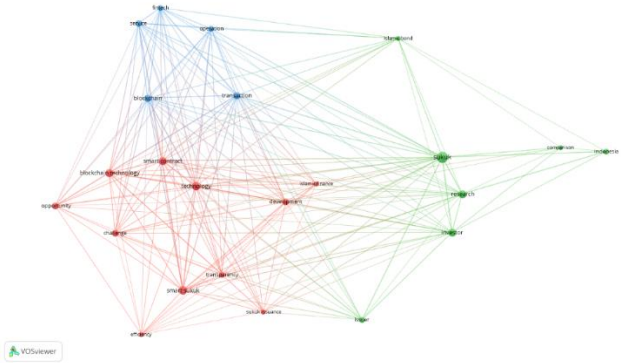

Fig. 2. Network Visualization from VOSviewer.

Figure 2 shows the Network Visualization from VOSviewer with the keywords "Sukuk", "Smart Sukuk", and "Blockchain". Analysis of the network visualization shows that the more significant the circle that appears, the more research on related topics. In Figure 2, the topic of outstanding sukuk is more significant than other topics, which indicates that there still needs to be more research on this topic of smart sukuk.

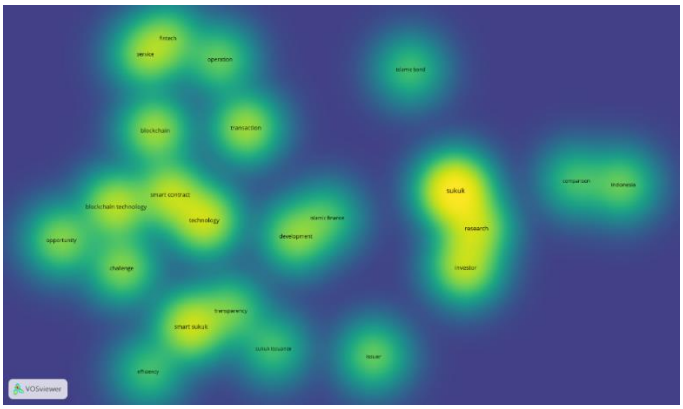

Fig. 3. Density Visualization from VOSviewer.

Figure 3 of Density Visualization shows the total density of items and clusters of the topics studied. The brighter the green-to-yellow color, the higher the weight; conversely, the closer the point's color is to blue, the lower the value or weight. Figure 3 shows that the highest weight is the topic of Sukuk, followed by smart sukuk, technology, and smart contracts. The topic of smart sukuk is still worthwhile for research, especially the discussion of opportunities, challenges, issuance, operations, and efficiency.

The availability of review literature on smart sukuk still needs to be more significant with minimal research volume. In the last five years, research topics related to smart sukuk still need to be below 50. This trend involves digitalized business models, lending platforms, and their opportunities and challenges.

4 CONCLUSIONS

Smart sukuk can be an opportunity for issuing sukuk in the future. Besides reducing issuance costs, blockchain technology can also provide transparency for its users. Therefore, research on Islamic smart sukuk and fintech must be further improved, especially regarding opportunities, challenges, and regulations. Further studies that focus on technology business models such as smart sukuk are needed so that they can be implemented globally. The government and related institutions must also play an active role in this business model by reviewing regulations and compatibility in applying fintech with Sharia law. Smart sukuk has the potential to be the future of sukuk issuance and could contribute to a broader spread of Sukuk, leading to an expansion of Islamic financing.

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