

DECODING SENTIMENTS: EXPLORING ISLAMIC FINTECH DISCOURSE ON TWITTER IN THE POST-PANDEMIC

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ABSTRAK

Persepsi pengguna twitter terhadap layanan keuangan berbasis syariah memberikan wawasan menarik terhadap respons mereka terhadap inovasi keuangan Islam. Dengan menganalisis 3.231 twit, studi ini menemukan bahwa mayoritas sikap bersifat netral (55,6%), diikuti oleh sentimen positif (33,3%), dan negativitas paling rendah (11,1%). Hal ini memberikan gambaran menarik terhadap reaksi pengguna terhadap *fintech* syariah. Tingginya sikap netral menunjukkan kurangnya keterlibatan penuh atau sikap netral di antara pengguna, mungkin disebabkan oleh pemahaman yang terbatas atau interaksi minimal dengan platform keuangan Islam. Namun, sentimen positif yang signifikan menunjukkan minat dan dukungan terhadap keuangan berbasis syariah, dipandang sebagai alternatif yang etis dan sejalan dengan prinsip-prinsip Islam. Sebaliknya, munculnya sentimen negatif menimbulkan kekhawatiran tentang kompatibilitas dengan prinsip syariah yang sebenarnya dan keamanan implementasinya. Mengatasi kekhawatiran ini pendidikan dan transparansi menjadi sangat penting. Pendekatan komprehensif yang melibatkan regulasi, sosialisasi, dan manajemen risiko esensial untuk membangun kepercayaan dan pemahaman akan nilai yang ditawarkan oleh *fintech* syariah dalam lanskap keuangan modern.

Kata kunci: *Fintech, Sentimen fintech syariah, Twitter, Covid-19*

ABSTRACT

Twitter (later called X) users' perceptions of sharia-compliant fintech offer a revealing insight into their responses to Islamic financial innovations. Analyzing 3,231 tweets, the study found that the majority of attitudes were neutral (55,6%), followed by positive sentiments (33,3%), and negativity was the least (11,1%). This paints an intriguing picture of user reactions toward Islamic fintech. The prevalence of neutral attitudes suggests a lack of full engagement or a neutral stance among users, potentially due to limited understanding or minimal interaction with Islamic finance platforms. However, the significant positive sentiment indicates an interest and endorsement of sharia-compliant finance, seen as an ethical and aligned alternative within Islamic principles. Conversely, the emergence of negative sentiment raises concerns regarding compatibility with genuine sharia principles and the safety of its implementation. Addressing these concerns, education and transparency become crucial. A comprehensive approach involving regulation, outreach, and risk management is essential to build trust and understanding of the value sharia fintech offers in the modern financial landscape.

Keywords: *Fintech, Sentimen fintech syariah, Twitter, Covid-19*

INTRODUCTION

The COVID-19 pandemic has spurred a rise in technology-driven economic engagement. Social distancing measures have prompted a shift towards online transactions to avoid direct physical contact. Consequently, there has been a surge in the prevalence of virtual business activities. Information Technology (IT) becomes pivotal in facilitating these activities while adhering to health regulations in Indonesia and globally during the pandemic. IT has significantly transformed operations across various sectors, playing a crucial role in numerous industries (Al., 2020).

The advent of online business models has prompted stakeholders to adopt electronic payment systems (Abdillah et al., 2020). Traditionally, payments were handled conventionally, but a shift toward digital payment systems has emerged, especially within electronic commerce (e-commerce, m-commerce), leveraging technology like e-wallets, e-payments, and financial technology (fintech) (Abdillah, 2019).

In Indonesia, fintech is gaining attention as a significant technological innovation in the financial sector. The implementation of technological advancements, including blockchain, mobile payments, smart contracts, and robo-advisory, has significantly influenced the efficacy of financial services (Firmansyah et al., 2022; Nguyen et al., 2022). The National Digital Research Centre (NDRC) elaborates that fintech represents a fusion of finance and technology, denoting innovative financial services using modern technology (Sukma, 2019).

This evolution from traditional to digital payment systems in electronic commerce underscores the integration of technology into financial services, emphasizing innovation and efficiency. The surge of fintech in Indonesia aligns with this transition, representing a pivotal stride toward modernizing and enhancing financial processes through technology-driven advancements.

Fintech harnesses technology for streamlined financial transactions, encompassing digital services like payment channels, digital banking, online insurance, P2P lending, and crowdfunding (Muchlis, 2018). This technological integration aims to enhance operational efficiency and service quality. In Indonesia, with its vast Muslim population, the potential for a flourishing sharia fintech industry is promising. Shariah fintech combines financial and technological innovations to simplify Shariah-compliant transactions and investments (Mukhlisin, 2019).

Islamic fintech, as per stands as a technology-driven financial innovation rooted in Islamic law, offering access to financial services unavailable through traditional means (Alwi, 2018). The emergence of financial technology (fintech) has presented substantial opportunities for the advancement of financial inclusion in developing economies, including Indonesia (Hudaefi, 2020). Financial services are changing as a result of cutting-edge technologies like blockchain and artificial intelligence. Finance is not any different in Islam. Sharia-compliant fintech is making strides in both Islamic and non-Islamic nations, offering financial services to the unbanked and potentially appealing to millions of Muslim youths. The increasing prominence of Islamic financial technology is a direct consequence of the coronavirus pandemic Lippka (2023). Furthermore, since the objectives of Islamic fintech align with the primary shariah aims for financial transactions, it becomes progressively critical to examine the intricacies of this burgeoning industry (Thakor, 2020).

Recently, an increase has been observed in the quantity of research devoted to Islamic technology. The aforementioned studies encompass a broad range of subjects, such as the factors influencing individuals' decisions to utilize the services offered by Islamic fintech companies (Ali et al., 2018; Darmansyah et al., 2021), challenges and opportunities confronting Islamic fintech companies (Firmansyah & Anwar, 2019), and comprehensive analysis of prior research on Islamic fintech (Hassan et al., 2020; Rabbani et al., 2020a). It is expected that Islamic fintech, which employs technological solutions to resolve financial matters in adherence to the principles of Islamic law (sharia), will expedite the process of digital transformation and promote sustainability within the Islamic finance industry (Awotunde et al., 2021). Shariah compliance, with a particular focus on nations or institutions that observe Islam, is indistinguishable from Islamic fintech (Alshater & Othman, 2020). The Indonesian Ulema Council released Fatwa No: 111/DSN-MUI/II/2018, affirming Sharia-compliant Information Technology-Based Financing Services.

Based on this background, this study aims to analyze X (previously named Twitter) users' sentiment regarding sharia fintech. Data comprises 3,231 tweets with the hashtag #fintechsharia. The research framework includes contextual background, relevant literature review, methodology detailing data and

model creation, findings, and discussion, concluding with research outcomes. X, a prominent social platform, boasts 69.3 million users globally, with 14.05 million in Indonesia, is often used for Islamic economic research. Despite, no prior studies have explored public sentiments on sharia fintech through X data.

LITERATURE REVIEW

Financial Technology (fintech)

For a scholarly definition of fintech, Schueffel (2017), who analyzed 203 scientific articles containing the term. He put forth the following definition of fintech in accordance with the thirteen existing definitions: [...] *a new financial industry that applies technology to improve financial activities* (Schueffel, 2017). Fintech is described as "Innovation Financial Services" by The National Digital Research Centre (NDRC), which is financial sector innovation employing current technologies. Payments, investments, transfers, borrowing money, comparing financial goods, and financial plans are all examples of financial transactions in fintech (Santi, 2017). Another definition for it is as a digital technology-based solution that addresses financial intermediation issues (Aaron, M., Rivadeneyra, F., and Sohal, 2017). Furthermore, fintech can be defined as a sector comprised of enterprises that employ technology to improve the efficiency of financial systems and services (Muzdalifa et al., 2018).

Historically, the inception of fintech can be traced back to two significant events: the completion of the transatlantic cable in 1866 and the implementation of the telegraph in 1838 (Nicoletti, 2017). The developments facilitated the emergence of financial globalisation during the 1980s (Arner et al., 2015; Nicoletti, 2017), for instance, Barclays Bank in the United Kingdom introduced the automated teller machine (ATM) in 1967, and the internet revolution in the early 1990s significantly influenced electronic finance (e-finance) methodologies (Arner et al., 2017; Caciatori Junior & Cherobim, 2020; Nicoletti, 2017).

During that era, Bettinger (1972) provided a definition of fintech as an amalgamation of contemporary computer science and banking expertise. The regulated traditional finance industry utilized technology to expand its product and service offerings during the internet revolution and through the 2000s. Examples of such innovations include internet banking, electronic money (e-money), and mobile payments (Au & Kauffman, 2008; Nicoletti, 2017). Fintech firms, including payment services and peer-to-peer lending, have experienced significant growth in the financial markets since the last phase of the industrial revolution 4.0 (automation for efficiency), which spanned from the period following the global financial crisis in 2008 to the present (Nicoletti, 2017).

Globally, the fintech industry is quickly developing and growing. This is demonstrated by the creation of fintech startup companies and the significant amount of worldwide investment in this space. Globally, fintech is advancing rapidly in a variety of sectors, including lending, finance, remittances, retail investment, financial planning, and so on (Muzdalifa, I., Rahma, I. A., dan Novalia, 2018)

The recent industry 5.0, where advanced technology (e.g. blockchain, intelligent machines, metaverse and others) is leveraged in the financial sector, has revolutionised the global fintech practices, e.g. cryptocurrency investment in decentralised finance markets. More recently, academic papers have explained fintech as, e.g. internet finance (Ping & Chuanwei, 2013), internet of things in financial services (Kim et al., 2016), innovation in commercial startups (Ramlall, 2018), disruptive innovation in financial services (Lee & Shin, 2018) algorithm trading (Jantarakolica & Jantarakolica, 2018) and others.

This business is quickly developing in Indonesia, attracting daily business people in the country (Muzdalifa, I., Rahma, I. A., dan Novalia, 2018). Fintech in Indonesia has enormous promise since it can solve urgent demands that traditional financial institutions cannot meet. Aside from that, the country's high level of cellular penetration has created numerous prospects for the fintech business to grow (Rusydia, 2018).

The Role of Financial Technology (fintech)

The presence of fintech has an impact on economic society's lifestyle, particularly in Indonesia. In general, the combination of technology with efficacy has a good impact on society. Fintech can assist in the growth of developing technology businesses, which will, in turn, increase economic growth and job possibilities. This economic expansion will undoubtedly benefit people's living conditions as well as the macroeconomy (Prima, 2019)

Not only that, but also fintech may help Micro, Small Medium Enterprise (MSMEs) finances better, and their development in Indonesia has highly promising market chances. The huge geography, significant middle-class growth, and relatively low penetration of financial products all combine to offer a strong market for fintech development in Indonesia (Nafiah, 2019). Fintech offers the ability to contact potential debtors, particularly in the MSME and agricultural sectors, where existing financial industry players do not have access (Wulandari, 2017).

Currently, the Indonesian government regards the fintech market as having the ability to assist MSMEs which do not yet have access to banks (Minerva, 2016). Sharia FinTech is an inseparable component of the National fintech business, and it plays an important role in promoting the growth of MSMEs in Indonesia. Fintech financial services such as money transfer services, crowdsourcing, and mobile payments are generating a revolution in startup enterprises. For example, by using crowdfunding, a person/institution can easily get funds from all across the world. Furthermore, fintech enables global money transfers and automatic currency conversion rates. Another purpose of fintech is to modify consumer behaviour and expectations, such as:

- 1) Having easy access to information or data at any time and from any location,
- 2) Balancing small and large enterprises such that they have high expectations even if the business is still tiny and new.

Advantages and Disadvantages of Financial Technology (Fintech)

Financial Technology has various advantages and downsides that are tied to the financial benefits of technology. For starters, fintech can help Indonesians who have been unable to be served by the traditional financial industry due to severe banking restrictions and the traditional banking industry's limits in serving people in particular places. Second, it can be an alternate funding source to typical financial industry services if people require more democratic and transparent financing.

Although FinTech offers many benefits, it also has drawbacks, such as a lack of restrictions when compared to the regulations of conventional financial institutions (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020) (Prestama, F. B., Iqbal, M., & Riyadi, 2019). Similarly, sharia norms still require numerous modifications to the rules (Ulya, 2018). Another issue is the scarcity of human resources in supporting the advancement of sharia fintech (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020)(Rusydziana, 2018). Then, there are other FinTechs that do not have a physical office as a security precaution and to ensure product integrity (Binus Higher Education, 2019). Finally, from literacy or public knowledge of sharia FinTech (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020) to the possibility of financial crimes that damage the name of sharia fintech (Mukhlisin, 2019).

Islamic fintech

Islamic fintech is a technology-based business with innovative financial services and uses sharia schemes. Islamic FinTech promotes responsible finance, provides opportunities and is ethical in influencing all forms of finance globally (Rusydziana, 2018). MUI National Sharia Council Fatwa No. 117/DSN-MUI/II/2018 defines Islamic fintech as the provision of financial services based on sharia principles that bring together or connect financing providers with financing recipients in order to carry out financing contracts through an electronic system using the internet network (DSN MUI, 2018).

The precise definition of Islamic fintech is provided by Hudaefi (2020). He defined the term as such: [...] technological innovation in the financial industry to enhance economic activities that are Sharī'ah-compliant, promote the maqāsid al-Sharī'ah (objectives of Islamic law) and be relevant to the fatwa (juristic opinion) and regulations [...] (Hudaefi, 2020)

Sharia fintech aims to help micro, small and medium enterprises (MSMEs) gain access to funding more quickly, cheaply, and efficiently. Apart from that, another aim of Islamic fintech must of course be in line with the aim of the transaction, namely bringing about and maintaining benefit (goodness) and avoiding evil (damage) both in this world and in the hereafter (Shidik, 2016).

Islamic fintech encourages the distribution of sharia-based funding in various regions in Indonesia whose customers are almost all MSMEs (Prestama, F. B., Iqbal, M., & Riyadi, 2019). In this way, sharia fintech plays a role in increasing financial inclusion by meeting the needs of unbankable market segments. Islamic fintech provides solutions in reducing inequality between financial institutions and parties who need financing (Mukhlisin, 2019)

Indonesia, with a Muslim majority (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020), represents a huge opportunity for the development of Islamic fintech in stimulating the growth of

MSMEs. Islamic fintech in Indonesia has gained significant public attention, particularly since the establishment of the Indonesian Islamic fintech Association (AFSI) Institute, which regulates sharia fintech in Indonesia. In terms of rules, fintech has a considerably better possibility of getting legitimacy from the government (OJK) than traditional financial organisations (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020)

Despite its many benefits, Sharia fintech does have some drawbacks. For starters, it is still difficult for fintech to attract investors (lenders). Unlike banks, which have deposit guarantee organisations, fintech does not have lender guarantors. The second issue is one of socialisation and promotion (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020)(Minerva, 2016). Muzdalifa, I., Rahma, I. A., and Novalia, (2018) and Prestama, F. B., Iqbal, M., & Riyadi, (2019) did study on the low level of literacy and inclusion of the community and sharia financial institutions, particularly sharia fintech, as a result of a lack of socialisation and marketing. The third drawback is the lack of sharia fintech-supporting facilities and infrastructure, according to Muzdalifa, I., Rahma, I. A., & Novalia (2018) who found that the development of sharia FinTech is still restricted by infrastructural issues. The fourth sharia fintech vulnerability is a lack of managerial expertise, which is exacerbated by a shortage of human resources who understand transaction contracts based on sharia principles (Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, 2020).

Previous Studies

The discussion of Islamic fintech on X in the post-pandemic may remain absent in times of this study. In general, the existing literature (i.e. published academic works) may be classified into two, i.e. those dealing with fundamental questions and those discussing practical issues. This study aims to fill a gap in the literature by analyzing Islamic fintech on X in the post-pandemic. This study seeks to view, identify, and collect frequently discussed Islamic fintech topics based on X user activity, sentiment, and content. Scholarly publications that addressed the fundamental issues have covered:

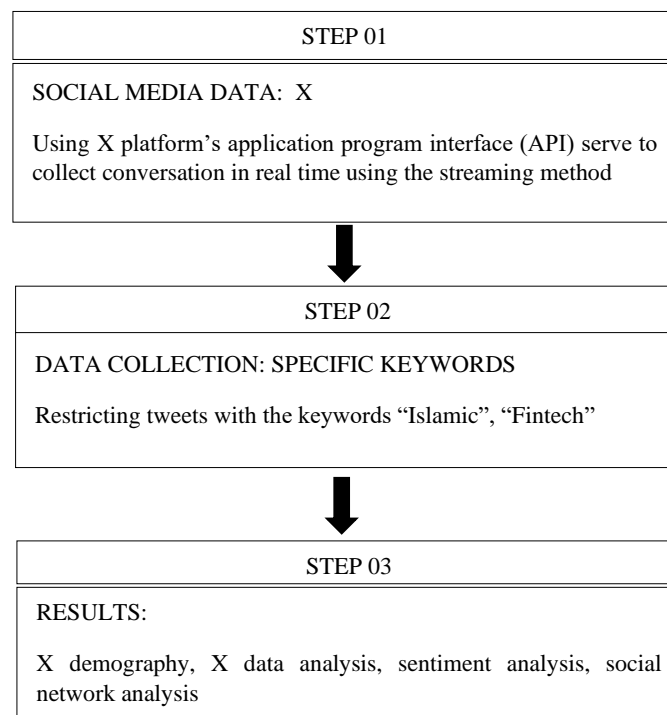
Table 1. Previous Studies

Topics	Authors
Literature review on fintech, Islamic finance and blockchain	(Rabbani et al., 2020a)
Literature review on cryptocurrency	(Rabbani et al., 2022)
The idea of Islamic fintech and the future of Islamic finance	(Lajis, 2019; Rabbani et al., 2020a)
The idea of Islamic fintech including such roles in times of COVID-19 pandemic	(Lajis, 2019; Rabbani et al., 2020b)
Trust enhancement with blockchain technology	(Hassan et al., 2020; Rabbani et al., 2020b; Syed et al., 2020)
The conceptual work on the Islamic digital economy	(Mohamed & Ali, 2018)
The proposed model of Islamic fintech for financial inclusion and development, e.g. E-Salam fintech	(Allaymoun & Hag Hamid, 2020)
Interest-free Islamic fintech model	(Sa'ad et al., 2020)
Musharakah smart contract model	(Sa'ad et al., 2019),
Mudharabah crowdfunding model	(Ishak & Rahman, 2021)
Islamic fintech free money creation model	(Altwijry et al., 2022)
Fintech for Islamic microfinance	(Shaikh et al., 2020)
The notion of Islamic fintech's role in the UN sdgs	(Bedoui & Aaminou, 2021)
The notion of Islamic fintech's role in the environmental, social, and governance	(Goud et al., 2021)
The impact of fintech applications on customer retention in Islamic banks in Malaysia and the United Arab Emirates	(Baber, 2020)
The impact of fintech applications on customer retention in Islamic banks and digital inclusion in Bangladesh	(Afroze & Rista, 2022)
Islamic fintech banking services acceptance in Malaysian customers	(Shaikh et al., 2020)
Islamic fintech banking services and factors drive smes applying for loans from P2P lending	(Rosavina et al., 2019)
Comparative analysis of countries performance in financial inclusion and fintech	(Baber, 2020)
Business models of Islamic fintech P2P lending that promote sdgs in Indonesia	(Hudaefi, 2020)

RESEARCH METHOD

This research utilized X And changed its name to X communication data, specifically 3,231 tweets related to sharia-compliant fintech, gathered using Snsrape—a Python tool for extracting Tweet. Employing a qualitative approach, descriptive statistics were applied to gauge public sentiment toward sharia fintech among X users. Sentiment analysis, using the VADER Python module, categorized the sentiment of these tweets. VADER, designed for social media content, simplifies sentiment analysis beyond the tech realm (Hutto, C.J. & Gilbert, 2014). Preprocessing included language filtering and removing hashtags, mentions, and links to refine the dataset for analyzing opinions, emotions, and attitudes concerning sharia fintech. The study aims to delve into public perception, feelings, and judgments about Islamic Fintech, leveraging tweets as a source of unstructured text. This analysis helps decode sentiments—positive, negative, or neutral—regarding Islamic Fintech, offering insights into how this niche is perceived and discussed within the X sphere.

X is a popular source of data for social media analysis because it is large and simple to access. Application Programming Interface (API) service from the X platform to collect conversations in real time using the streaming method (Fahmi, 2018), to manage social media data, particularly X. Developers of X offer the X Search API to gain near-real-time access to a compilation of the most recent tweets published within the last 7 days, filtered by specific queries (Miftahuddin et al., 2023). The results displayed are in the form of percentage trend, retweet relationship, mentions graph trend, most retweet status, conversation trend. Thus, these data can be used as a resource for interpreting various social phenomena occurring at the present time (Arianto, 2021).



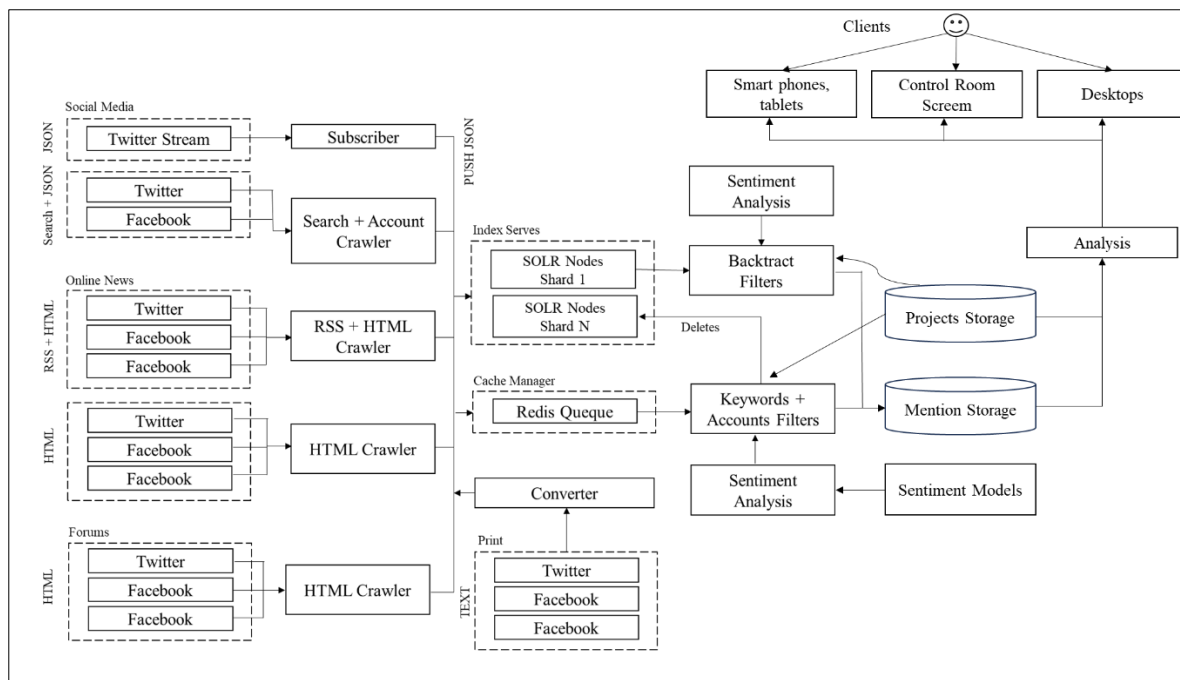


Figure 1. Research Steps

RESULTS AND DISCUSSION

Sentiment Analysis

This study utilized the VADER Python library to assess sentiments among X users regarding Sharia fintech. VADER employs a value-based system, categorizing tweets as positive, negative, or neutral, facilitating the analysis of sentiment dynamics surrounding Sharia-compliant financial technology. The classification of tweets based on their assigned values offered insights into public opinions on this subject within the X sphere. By examining these sentiment patterns, the research aimed to provide a comprehensive overview of how sharia fintech is perceived and discussed among users. This analytical approach helped unveil prevalent attitudes, enabling a nuanced understanding of the sentiment landscape and shedding light on the perceptions surrounding this innovative financial sector development within the digital realm.

SENTIMENT POLARITY TWEETS DATA

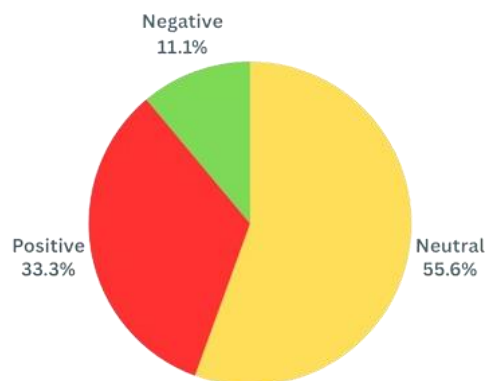


Figure 2. Sentiment Analysis on Tweet Data

As per the illustration, the majority of tweets discussing Sharia fintech between January 1, 2020, and February 28, 2022, were neutral, comprising 55.6% of the dataset. Positive tweets constituted 33.3% of the content related to Sharia fintech, while negative sentiments were observed in 11.1% of the collected data.

FINDINGS

From an analysis of 3,231 tweets about Islamic fintech until February 28, 2022, contrasting sentiments emerged. The study aimed to gauge the sentiment levels within these tweets, unveiling distinctive patterns. The findings reveal a hierarchy in sentiment distribution: negativity constituted the smallest fraction, at 11.1%, while neutrality dominated significantly with 55.6%. Positive sentiments followed at 11.1%. These results signify the existence of diverse opinions and perspectives concerning Sharia fintech, reflecting a spectrum of viewpoints within the tweet data.

Several comments raised concerns about the sharia side of Islamic fintech, disruptive technologies, debt collectors, and fixed rate issues. The following is an overview of the issues identified in the analysed tweets.

1. Some people question the sharia aspect of Islamic fintech.
2. Some dispute if Islamic fintech is a disruptive technology that should be evaluated from the maqashid al-shariah standpoint.
3. Some claim that debt collectors operate under the pretext of Islam in Islamic fintech.
4. Some argue that if Sharia fintech marks up in advance with fixed interest rates, this increases the risk for fintech.

The social phenomena that arise in relation to traditional fintech difficulties create a bad stigma. Starting with harsh billing practises and escalating suicides as a result of being unable to repay internet debts. Because of the advent of this bad phenomena and stigma, people believe there is no distinction between sharia and traditional fintech. Another reason society generalises between sharia and traditional fintech is a lack of education, communication, and literacy about sharia principles in everyday life. As a result, Islamic fintech must persuade the public that it is distinct from traditional fintech. The contract, which is founded on Sharia principles and is employed in Islamic fintech transactions, is the key. As a result, educating the public about the benefits of employing sharia contracts in islamic fintech is critical.

Aside from that, it is critical to emphasise fintech's illegal engagement in the interest system. As stated in the DSN MUI fatwa no. 1 of 2004 on Interest Law, which includes: 1) The modern practise of charging interest on money satisfies the conditions for usury that existed throughout the Prophet Muhammad's time, namely usury *nasi'ah*. Thus, the practise of charging interest on money is a kind of usury, and usury is illegal; 2) The practise of charging interest is illegal, whether it is carried out by banks, insurance companies, capital markets, pawn shops, cooperatives, and other financial institutions, or by individuals. Then stressed that Sharia fintech rules have been allowed and managed by the MUI through different procedures in the MUI DSN fatwa No. 117 concerning islamic fintech. With the existence of MUI fatwas that support the running of Syariah fintech operations, it is hoped that Islamic fintech will always be the choice for being involved in the world of fintech regarding the peace guaranteed by Allah SWT because it is based on sharia principles with the existence of regulations.

The word cloud in Figure 3 represents X user tweet data that has been analysed and categorised as neutral sentiment. The neutral sentiment category includes many tweets, as shown in the word cloud.

1. Some argue that Indonesian banks are actively pursuing digital transformation in the Islamic money market, which involves transitioning from traditional banking to digital platforms and fostering collaboration between banks and fintech companies.
2. Fintech has the potential to promote accessibility to Sharia-compliant financial services, according to some.
3. The utilisation of FinTech has the potential to stimulate the expansion and enhance the economic resilience of small and micro sharia business players, according to some.
4. The utilisation of fintech technology is believed by some to be accompanied by innovation and measures to alleviate security risks.
5. Some argue that fintech platforms that follow sharia principles can function as both lenders and investors in peer-to-peer lending.
6. Some individuals doubt whether fintech peer-to-peer (P2P) financing now incorporates sharia principles and has obtained a fatwa from the Indonesian Ulema Council (MUI).

- Some individuals argue that the areas with the greatest prospects include halal food, sharia-compliant fintech, and halal pharmaceuticals.

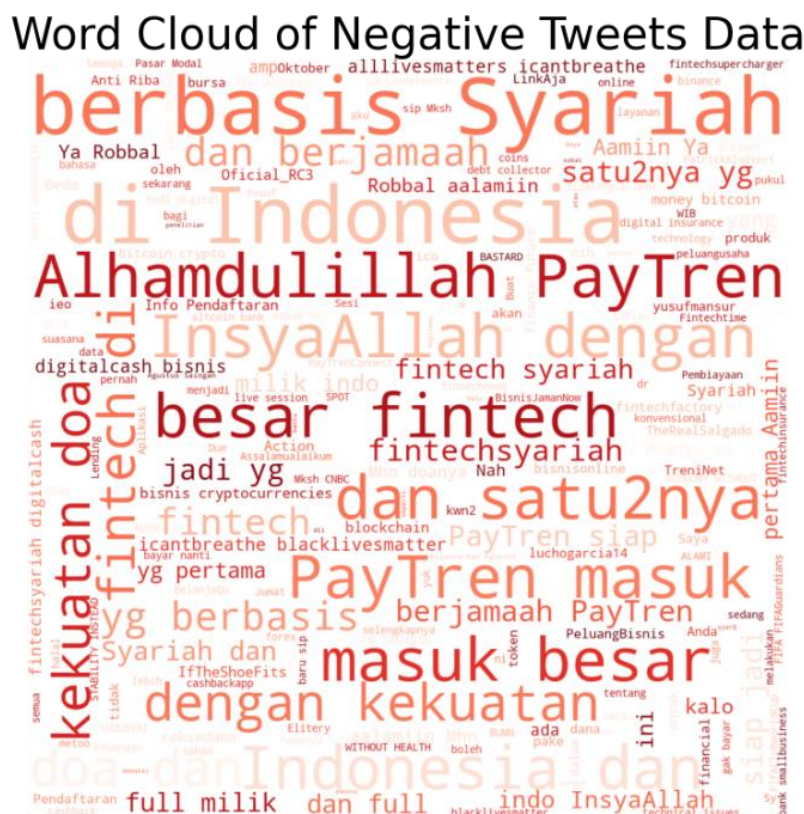


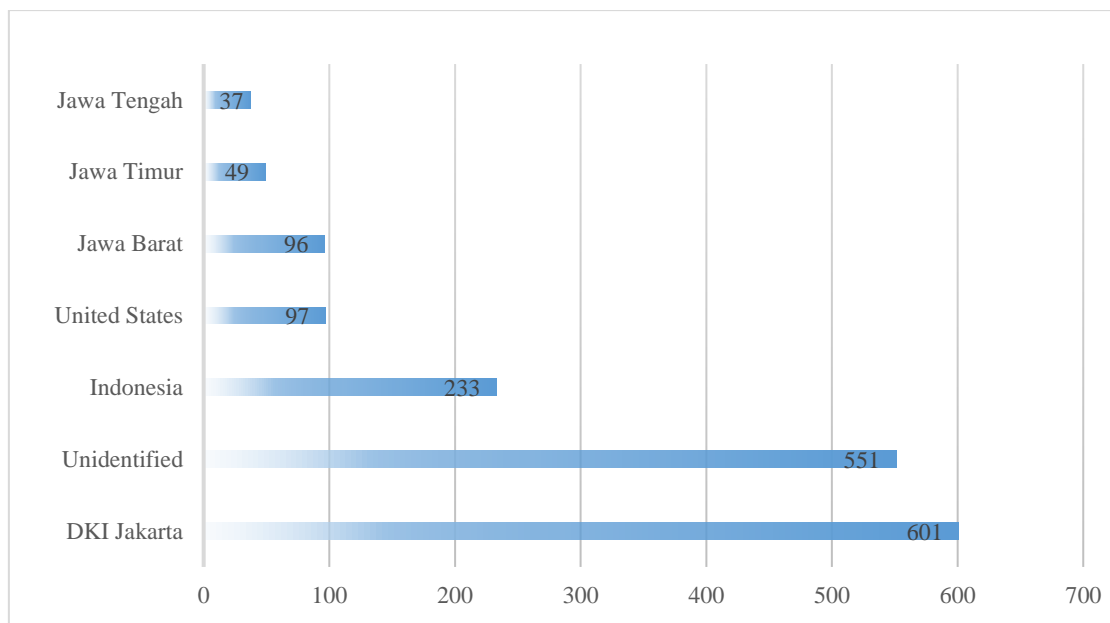
Figure 3. Word Cloud of Negative Tweets Data

Financial services have a crucial role in stimulating economic expansion. Being a standalone country alone is inadequate when it comes to serving as a benchmark for judging the success of the financial industry. Demirgüç-Kunt argue that financial services play a vital role in promoting economic growth and creating job chances for those in poverty (Demirgüç-Kunt, A., Beck, T., & Honohan, 2017). Promoting and assisting the growth of the MSME sector could result in the creation of job opportunities. Sharia fintech has three primary opportunities, one of which is its significant market share in financing the MSME sector. This advantage allows the sharia fintech industry to secure customers for financing, while other financial institutions struggle to do so. According to research, the comprehensive market share of MSME financing remains unexplored (Haris, M., Iqbal, M., & Hadiyati, 2020).

The presence of Micro, Small Medium Enterprise (MSMEs) in a nation has been empirically demonstrated to effectively address economic challenges, including unemployment reduction, poverty alleviation, income augmentation, inequality reduction, equitable income distribution, and enhancement of societal well-being (Indika, M., & Marliza, 2019)(Krisnawati, 2016) (Sarfiyah, S. N., Atmaja, H. E., & Verawati, 2019) (Tambunan, 2012) (Setiawan, 2017).

Disruptive innovation as a result of technical advancements has also aided the rise of the fintech industry in the financial services industry. According to Maier (2016), Fintech is a blend of finance and technology that enables creative solutions and long-term business strategies. According to Leong and Sung, fintech is an innovative idea for improving financial service operations by providing company-specific technological solutions. Leong, K., & Sung (2018). Fintech is defined as the use of technology in the financial system that produces new products, services, technology, and/or business models and can have an impact on monetary stability, financial system stability, and/or the efficiency, smoothness, security, and reliability of the payment system (BI, 2017)

Alternative Islamic fintech products simplify business operations, address financial problems, and serve as extra references for business players (Wijayanti, D. M., & Riza, 2017). The existence of fintech is also in accordance with Islamic law, as it can decrease leverage (Finocracy, A. A., & Mirakhor, 2017) (Firmansyah, E. A., & Anwar, 2019). Fintech (sharia) has various advantages over other financial



**Figure 6. User Location Graph
X as a sender of messages related to sharia fintech**

CONCLUSION

An examination of X users' mood towards sharia fintech reveals a fascinating portrayal of the varied reactions to this subject. The investigation revealed that the proportion of negative sentiment was under 11.1%, whilst the majority of sentiments were neutral, accounting for 55.6%, and positive sentiment constituted 33.3%. The diversity observed in social media captures the intricate range of ideas and reactions from users towards Islamic fintech.

The presence of a significant amount of neutral sentiment suggests that a large portion of X users have not yet formed a definitive stance on this issue. This may be attributed to a dearth of knowledge or firsthand exposure to sharia-compliant financial technology (fintech). Conversely, the large proportion of favourable attitude indicates enthusiasm and endorsement for the adoption of financial practises aligned with sharia principles.

Nevertheless, it is crucial to acknowledge that even a 11.1% unfavourable opinion still exerts influence. These beliefs may arise from a lack of trust in the adherence of Islamic fintech to its guiding principles, or they may also be driven by concerns regarding security and risk factors.

This research has limitations due to its narrow data collection timeframe, spanning from January 1, 2020 to February 28, 2022, and consisting of only 3,231 tweets. The dynamic advancements in technology and developing perspectives on Islamic fintech may undermine the representativeness of these findings.

This research remains significant in the realm of literacy and in relation to the considerations of sharia-compliant financial technology (fintech). Nevertheless, it is crucial to always enhance our expertise in tandem with the advancements in the field of Islamic finance to acquire a more thorough and pertinent comprehension.

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REFERENCES

- Aaron, M., Rivadeneyra, F., and Sohal, S. (2017). "Fintech: Is this time different? A framework for assessing risks and opportunities for Central Banks.
- Abdillah, L. A. (2019). "An Overview of Indonesian Fintech Application", *The 1st International Conference on Communication, Information Technology and Youth Study (I-CITYS2019)*.
- Abdillah, L. A. (2020). "Model Transaksi Keuangan Perdagangan Elektronik (E-Commerce Financial Transaction Model)", in *Perdagangan Elektronik: Berjualan di Internet (Electronic Commerce: Selling on the Internet)*. Yayasan Kita Menulis.
- Abdillah, L. A., Alwi, M., Simarmata, J., Bisyrri, M., Nasrullah, N., Asmeati, A., & Bachtiar, E. (2020). Aplikasi Teknologi Informasi: Konsep dan Penerapannya. *Aplikasi Teknologi Informasi: Konsep Dan Penerapan*.
- Afroze, D., & Rista, F. I. (2022). Mobile financial services (MFS) and digital inclusion – a study on customers' retention and perceptions. *Qualitative Research in Financial Markets*, 14(5), 768–785. <https://doi.org/10.1108/QRFM-06-2021-0095>
- Al., Abdillah. et. (2020). *Aplikasi Teknologi Informasi: Konsep dan Penerapannya*. Yayasan Kita Menulis.
- Ali, W., Muthaly, S., & Dada, M. (2018). Adoption of Shariah compliant peer-to-business financing platforms by SMEs: A conceptual strategic framework for fintechs in Bahrain. . . *International Journal of Innovative Technology and Exploring Engineering*, 8(2), 407–412.
- Allaymoun, M. H., & Hag Hamid, O. A. (2020). Proposed Mobile Application for Islamic Fintech E-Salam System an Approach to the Financial Inclusion. *2020 International Conference on Data Analytics for Business and Industry: Way Towards a Sustainable Economy (ICDABI)*, 1–5. <https://doi.org/10.1109/ICDABI51230.2020.9325698>
- Alshater, M. M., & Othman, A. H. A. (2020). Financial Technology Developments and their ل تطورات التعليم التقنية المالية وتأثيرها على التعليم Education Finance Islamic on Effect. *Journal of King Abdulaziz University: Islamic Economics*, 33(3), 161–187.
- Altwijry, O. I., Mohammed, M. O., Hassan, M. K., & Selim, M. (2022). Developing a Shari'ah based FinTech Money Creation Free [SFMCF] model for Islamic banking. *International Journal of Islamic and Middle Eastern Finance and Management*, 15(4), 739–758. <https://doi.org/10.1108/IMEFM-05-2021-0189>
- Alwi, A. B. (2018). Pembiayaan Berbasis Teknologi (Fintech) Yang Berdasarkan Syariah. *Al - Qanun*, 21(02).
- Arianto, B. (2021). Media Sosial sebagai Saluran Aspirasi Kewargaan: Studi Pembahasan RUU Cipta Kerja. *Jurnal PIKMA: Publikasi Ilmu Komunikasi Media Dan Cinema*, 3(2), 107–127. <https://doi.org/10.24076/pikma.v3i2.469>
- Arner, D. W., Barberis, J., & Buckley, R. P. (2017). FinTech, regtech, and the reconceptualisation of financial regulation. *Journal of International Law and Business*, 37(3), 373–415.
- Arner, D. W., Barberis, J. N., & Buckley, R. P. (2015). The Evolution of Fintech: A New Post-Crisis Paradigm? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2676553>

- Au, Y. A., & Kauffman, R. J. (2008). The economics of mobile payments: Understanding stakeholder issues for an emerging financial technology application. *Electronic Commerce Research and Applications*, 7(2), 141–164. <https://doi.org/10.1016/j.elerap.2006.12.004>
- Awotunde, J. B., Chakraborty, C., & Adeniyi, A. E. (2021). Intrusion Detection in Industrial Internet of Things Network-Based on Deep Learning Model with Rule-Based Feature Selection. *Wireless Communications and Mobile Computing*, 2021, 1–17. <https://doi.org/10.1155/2021/7154587>
- Baber, H. (2020). FinTech, Crowdfunding and Customer Retention in Islamic Banks. *Vision: The Journal of Business Perspective*, 24(3), 260–268. <https://doi.org/10.1177/0972262919869765>
- Bedoui, H. eddine, & Aaminou, W. (2021). Role of Fintech to achieve the SDGs from an Islamic perspective. In *Islamic Fintech* (pp. 1–15). Routledge. <https://doi.org/10.4324/9781003014614-1>
- Bettinger, A. (1972). Fintech: a eries of 40 time shared models used at manufacturers hanover trust company. *Interfaces, INFORMS*, 2(4), 62–63.
- BI. (2017). *PBI NOMOR 19/12/PBI/2017 tentang Penyelenggaraan Teknologi Finansial*.
- Binus Higher Education. (2019). *No Title*.
- Caciatori Junior, I., & Cherobim, A. P. M. S. (2020). Academic production and technological emergence in finance. *Innovation & Management Review*, 17(2), 115–131. <https://doi.org/10.1108/INMR-01-2019-0005>
- Darmansyah, D., Fianto, B. A., Hendratmi, A., & Aziz, P. F. (2021). Factors determining behavioral intentions to use Islamic financial technology. *Journal of Islamic Marketing*, 12(4), 794–812. <https://doi.org/10.1108/JIMA-12-2019-0252>
- Demirgüç-Kunt, A., Beck, T., & Honohan, P. (2017). *Finance for All? Policies and Pitfalls in Expanding Access*.
- DSN MUI. (2018). *MUI National Sharia Council Fatwa No. 117/DSN-MUI/II/2018*. <https://Dsnmui.or.Id/>.
- Fahmi, I. (2018). *Drone Emprit Academic: Software for social media monitoring and analytics*. <http://Dea.Uii.Ac.Id.>
- Finocracy, A. A., & Mirakhor, A. (2017). *Accelerating Risk Sharing Finance via FinTech: NextGen Islamic Finance*. 10.
- Firmansyah, E. A., & Anwar, M. (2019). *Islamic Financial Technology (Fintech): Its Challenges and Prospect*. 52–58.
- Firmansyah, E. A., & Anwar, M. (2019). ISLAMIC FINANCIAL TECHNOLOGY (FINTECH): ITS CHALLENGES AND PROSPECT. *Proceedings of the Achieving and Sustaining SDGs 2018 Conference: Harnessing the Power of Frontier Technology to Achieve the Sustainable Development Goals (ASSDG 2018)*. <https://doi.org/10.2991/assdg-18.2019.5>
- Firmansyah, E. A., Masri, M., Anshari, M., & Besar, M. H. A. (2022). Factors Affecting Fintech Adoption: A Systematic Literature Review. *FinTech*, 2(1), 21–33. <https://doi.org/10.3390/fintech2010002>
- Goud, B., Uddin, T. A., & Fianto, B. A. (2021). Islamic Fintech and ESG goals. In *Islamic Fintech* (pp. 16–35). Routledge. <https://doi.org/10.4324/9781003014614-2>
- Haris, M., Iqbal, M., & Hadiyati, P. (2020). Synergy of Sharia Banks and Financial Technology in The Development of Micro, Small and Medium Businesses in Indonesia. *Jurnal Reviu Akuntansi Dan Keuangan*, 10(1), 115–126.
- Hassan, M. K., Rabbani, M. R., & Ali, M. A. M. (2020). Challenges for the Islamic finance and banking in post COVID era and the role of Fintech. *Journal of Economic Cooperation and Development*, 41(3).
- Hiyanti, H., Nugroho, L., Sukmadilaga, C., & Fitrijanti, T. (2020). Peluang dan Tantangan Fintech (Financial Technology) Syariah di Indonesia. *Jurnal Ilmiah Ekonomi Islam*, 5(3), 326–333.

- Hudaefi, F. A. (2020). How does Islamic fintech promote the SDGs? Qualitative evidence from Indonesia. *Qualitative Research in Financial Markets*, 12(4), 353–366. <https://doi.org/10.1108/QRFM-05-2019-0058>
- Hutto, C.J. & Gilbert, E. E. (2014). VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text. *Eighth International Conference on Weblogs and Social Media (ICWSM-14)*. Ann Arbor, MI, June 2014.
- Indika, M., & Marliza, Y. (2019). Upaya Upaya Pemberdayaan Usaha Mikro Kecil Menengah (UMKM) Dalam Mengatasi Kemiskinan di Kecamatan Tugumulyo Kabupaten Musi Rawas. *Journal Management, Business, and Accounting*, 18(3), 49–66.
- Ishak, M. S. I., & Rahman, Md. H. (2021). Equity-based Islamic crowdfunding in Malaysia: a potential application for *mudharabah*. *Qualitative Research in Financial Markets*, 13(2), 183–198. <https://doi.org/10.1108/QRFM-03-2020-0024>
- Jantarakolica, K., & Jantarakolica, T. (2018). *Acceptance of Financial Technology in Thailand: Case Study of Algorithm Trading* (pp. 255–277). <https://doi.org/10.1108/S1571-038620180000025011>
- Kim, Y., Park, Y.-J., Choi, J., & Yeon, J. (2016). The adoption of mobile payment services for ‘fintech’. *International Journal of Applied Engineering Research*, 11(2), 1058–1061.
- Krisnawati, K. (2016). Upaya Penanggulangan Kemiskinan Melalui Pemberdayaan Usaha Mikro Kecil Dan Menengah. *Sosio Informa*, 2(2), 137–154.
- Lajis, S. M. (2019). Fintech and Risk-Sharing: A Catalyst for Islamic Finance. In *Islamic Finance, Risk-Sharing and Macroeconomic Stability* (pp. 237–254). Springer International Publishing. https://doi.org/10.1007/978-3-030-05225-6_12
- Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, 61(1), 35–46. <https://doi.org/10.1016/j.bushor.2017.09.003>
- Leong, K., & Sung, A. (2018). FinTech (Financial Technology): What is It and How to Use Technologies to Create Business Value in Fintech Way? *International Journal of Innovation, Management and Technology*, 9(2), 74–78.
- Maier, E. (2016). Supply and demand on crowdlending platforms: Connecting small and medium-sized enterprise borrowers and consumer investors. *Journal of Retailing and Consumer Services*, 33(6), 143–153.
- Miftahuddin, A., Perdana, Y., & Sandjaya, T. (2023). Persepsi Masyarakat Terhadap Tren Perkembangan Industri Halal di Media Sosial: Analisis Respons di Indonesia. . *Responsive: Jurnal Pemikiran Dan Penelitian Bidang Administrasi, Sosial, Humaniora, Dan Kebijakan Publik*, 5, 233–238.
- Minerva, R. (2016). The potential of the Fintech industry to support the growth of SMEs in Indonesia. *Management Strategy and Industry Evolution*.
- Mohamed, H., & Ali, H. (2018). *Blockchain, Fintech, and Islamic Finance*. De Gruyter. <https://doi.org/10.1515/9781547400966>
- Muchlis, R. (2018). “Analisis SWOT Financial Technology (Fintech) Pembiayaan Perbankan Syariah Di Indonesia.” *At-Tawassuth*, 3(2), 335–357.
- Mukhlisin, M. (2019). *Islamic Fintech: Quo Vadis? Insight: Buletin Ekonomi Islam*.
- Muzdalifa, I., Rahma, I. A., dan Novalia, B. G. (2018). Peran fintech dalam meningkatkan keuangan inklusif pada UMKM di Indonesia (pendekatan keuangan syariah). *Jurnal Ekonomi Dan Perbankan Syariah*, 3(1).
- Muzdalifa, I., Rahma, I. A., Novalia, B. G., & Rafsanjani, H. (2018). Peran fintech dalam meningkatkan keuangan inklusif pada UMKM di Indonesia (pendekatan keuangan syariah). *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah*, 3(1), 1–24.
- Nafiah, R. (2019). Analisis Transaksi Financial Technology (Fintech) Syariah dalam Perspektif Maqashid Syariah. *Jurnal Ekonomi Dan Perbankan Syariah*, 6(2).

- Nguyen, L., Tran, S., & Ho, T. (2022). Fintech credit, bank regulations and bank performance: a cross-country analysis. *Asia-Pacific Journal of Business Administration*, 14(4), 445–466. <https://doi.org/10.1108/APJBA-05-2021-0196>
- Nicoletti, B. (2017). The Future of FinTech: Integrating Finance and Technology in Financial Services. *Springer International Publishing, Cham*, Available at: <Http://Link.Springer.Com/10.1007/978-3-319-51415-4>.
- Ping, X., & Chuanwei, Z. (2013). The theory of internet finance. *China Economist*, Vol. 8 No. 2, Available at: <Https://Ssrn.Com/Abstract=2235967>.
- Prestama, F. B., Iqbal, M., & Riyadi, S. (2019). Potensi Finansial Teknologi Syariah dalam Menjangkau Pembiayaan Non-Bank. *Al-Masraf: Jurnal Lembaga Keuangan Dan Perbankan*, 4(2), 147–158.
- Prima. (n.d.). *Manfaat Fintech*. Retrieved February 7, 2019, from <https://www.jaringanprima.co.id/id/manfaat-fintech>
- Rabbani, M. R., Hassan, M. K., Hudaefi, F. A., & Shaikh, Z. H. (2022). Islamic finance and cryptocurrency: a systematic review. *Springer International Publishing*, 279–306.
- Rabbani, M. R., Khan, S., & Thalassinis, E. I. (2020a). Fintech, blockchain and Islamic finance: an extensive literature review. *International Journal of Economics and Business Administration*, 8(2), 65–86.
- Rabbani, M. R., Khan, S., & Thalassinis, E. I. (2020b). *FinTech, blockchain and Islamic finance: An extensive literature review*.
- Rosavina, M., Rahadi, R. A., Kitri, M. L., Nuraeni, S., & Mayangsari, L. (2019). P2P lending adoption by SMEs in Indonesia. *Qualitative Research in Financial Markets*, 11(2), 260–279. <https://doi.org/10.1108/QRFM-09-2018-0103>
- Rusydiana, A. S. (2018). Bagaimana Mengembangkan Industri Fintech Syariah di Indonesia? Pendekatan Interpretive Structural Model (ISM). *AL-MUZARA'AH*, 6(2), 117–128.
- Santi, E. (2017). “Pengawasan Otoritas Jasa Keuangan Terhadap Financial Technology (Peraturan Otoritas Jasa Keuangan nomor 77/pojk.01/2016.” *Diponegoro Law Journal*, 6(3).
- Sarfiah, S. N., Atmaja, H. E., & Verawati, D. M. (2019). UMKM Sebagai Pilar Membangun Ekonomi Bangsa. *Jurnal REP (Riset Ekonomi Pembangunan)*, 4(2), 137–146.
- Schueffel, P. (2017). Taming the Beast: A Scientific Definition of Fintech. *Journal of Innovation Management*, 4(4), 32–54. https://doi.org/10.24840/2183-0606_004.004_0004
- Setiawan, R. D. (2017). Peran UMKM Dalam Upaya Pemberantasan Pengangguran dan Kemiskinan: Pelajaran Dari Penerapan JATIMNOMICS Di Blitar. *Jurnal Ilmiah Mahasiswa FEB*, 5(2), 1–18.
- Shaikh, I. M., Qureshi, M. A., Noordin, K., Shaikh, J. M., Khan, A., & Shahbaz, M. S. (2020). Acceptance of Islamic financial technology (FinTech) banking services by Malaysian users: an extension of technology acceptance model. *Foresight*, 22(3), 367–383. <https://doi.org/10.1108/FS-12-2019-0105>
- Shidik. (2016). *Ushul Fiqh*. PT. Intimedia Cipta Nusantara.
- Sukma, D. (2019). *FinTechfest, Mempopulerkan Teknologi Finansial di Indonesia*. <http://arenalte.com>
- Syed, M. H., Khan, S., Rabbani, M. R., & Thalassinis, Y. E. (2020). An artificial intelligence and NLP based Islamic FinTech model combining zakat and Qardh-Al-Hasan for countering the adverse impact of COVID 19 on SMEs and individuals. *International Journal of Economics and Business Administration*, 8(2), 351–364.
- Tambunan, T. T. H. (2012). Peran Usaha Mikro dan Kecil dalam Pengentasan Kemiskinan di Daerah. *Jurnal Bina Praja: Journal of Home Affairs Governance*, 4(2), 73–92.
- Thakor, A. V. (2020). Fintech and banking: What do we know? *Journal of Financial Intermediation*, 41, 100833. <https://doi.org/10.1016/j.jfi.2019.100833>

- Ulya, N. U. (2018). “Legal protection of donation-based crowdfunding Zakat on financial technology: digitalization of Zakat under perspective of positive law and Islamic law.” *International Conference of Zakat*.
- Wijayanti, D. M., & Riza, A. F. (2017). *Sharia Fintech: Positive Innovation in Consumer Perspective. Proceeding. International Seminar Academic Network on Competition Policy, Bali*.
- Wulandari, P. A. (2017). Analisis SWOT Perkembangan Finansial Teknologi di Indonesia. *Proceeding of National Conference on Asbis, 2*, 376–383.