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Fintech in Islamic Finance and Technical Applications for Islamic Financial Institutions: A Systematic Literature Review Study

Sulaiman Helmi¹, Bakti Setyadi², Tamamudin³, Ratna Sesotya Wedadjadi⁴, Mohamad Najmudin⁵

Abstrak

This paper provides an overview of the progress made in the field of Islamic FinTech research. This study employs a hybrid methodology that integrates bibliometric analysis and content analysis in order to elucidate the prevailing research trajectory within the field of Islamic FinTech. The Scopus database was utilized to retrieve a total of 85 documents, which were subsequently subjected to analysis using R Studio and VOS viewer. The research output in the field of Islamic FinTech is classified into four distinct streams through the process of content analysis. The research indicates the possibility of integrating FinTech into Islamic finance as a means to provide advantages for individuals and small to medium-sized enterprises who lack access to traditional banking services. Additionally, the implementation of FinTech in Islamic finance has the potential to assist the government in enhancing financial inclusion, overcoming financial crises such as the COVID-19 pandemic, and attaining Sustainable Development Goals (SDGs) for the long-term well-being of the nation. Nevertheless, the absence of adequate legal regulations and the limited level of financial literacy pose significant challenges to the advancement of FinTech in the domain of Islamic finance.

Keywords: *Fintech; Islamic Fintech; R Studio; Sustainable Development Goals (SDGs); Islamic Finance*

1. Introduction

The term "*FinTech*" refers to a new subfield that is developing within the finance industry. (Alshater and Othman, 2020; Thakor, 2020) It is a term that refers to the use of technology to enable incremental or drastic improvements in financial services that can be made possible by using the technology. FinTech is defined as "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services" according to the Financial Stability Board (2019). According to Alshater and Othman (2020), Islamic FinTech is identical to conventional financial technology with the exception that it adheres to sharia law and places an emphasis on organizations or nations that also observe Islamic law. The word "Islamic" is used to differentiate between traditional financial technology operators and those that comply with shariah law. This separation is reasonable because of the many ways in which the two systems' FinTech business models are dissimilar from one another.

¹ Faculty of Social and Humanities, Bina Darma University, Indonesia, Email: bakti.setyadi@binadarma.ac.id

² Faculty of Social and Humanities, Bina Darma University, Indonesia

*Corresponding Author Email: sulaimanhelmi@binadarma.ac.id

³ Faculty of Islamic Economics and Business, UIN KH Abdurrahman Wahid Pekalongan, Indonesia

⁴ Sekolah Tinggi Masyarakat Desa "APMD", Indonesia

⁵ Master of Management Program, faculty of Economics and Business, Janabadra University, Indonesia

As an illustration, profit interest-based peer-to-peer lending, which is one of the most successful business models in the FinTech industry, is fundamentally rejected in the Islamic financial system due to the fact that (riba) is a basic prohibition in the system.

The Islamic Finance business has had significant growth, reaching a value of \$3 trillion. This substantial growth has created a background for the potential future developments in Islamic FinTech. It is worth noting that the Islamic Finance industry is already experiencing a period of expansion, as highlighted in the Islamic Finance Development Report of 2019. Therefore, it is of utmost importance to thoroughly examine the evolving dynamics of the sector, as the objectives of FinTech align with the fundamental principles of shariah in financial transactions. Thakor (2020) posits that the primary objective of FinTech is to introduce more cost-effective methods for addressing financial contracting obstacles and reducing the expenses associated with financial services, ultimately enhancing consumer well-being. Similarly, Lee and Teo (2015) outline five fundamental principles of FinTech, namely low-profit margin, light asset, expandability, innovation, and easy compliance, all of which align with shariah principles.

The history of fintech may be traced back to as early as 1866. According to Consumer International (2017), the developmental period of fintech has been categorized into three distinct phases. The initial period from 1866 to 1967 was characterized by the utilization of trans-Atlantic cable and telegraph systems for the purpose of facilitating financial communications. From 1967 to 2008, the second phase witnessed the advent of internet banking and ATMs, during which financial institutions began integrating information technology into their offerings of financial products and services. The third phase, commencing in 2008, is distinguished by the utilization of advanced technology by emerging participants with distinct attributes, hence establishing a novel competitive environment for financial institutions.

According to Palmi'e et al. (2020), the emergence described a comprehensive transformation at the industry level, resulting in the introduction of new participants and the convergence of skills and abilities. The rapid growth of the FinTech sector at the industry level, particularly in prominent economies like the United States, United Kingdom, China, and Germany, has spurred scholars to explore many aspects of FinTech. The literature in the field is experiencing rapid growth, accompanied by a corresponding increase in the number of reviews conducted by various researchers (Al-Sartawi et al., 2022; Li and Xu, 2021; Sangwan et al., 2020; Suryono et al., 2020; Utami et al., 2021). However, from an Islamic perspective, the pace of growth is comparatively slower. This discrepancy has motivated our study, as there are only a few reviews that have attempted to keep up with the progress, even including topics that are indirectly related (e.g., Rabbani et al., 2020). The present study possesses a comprehensive nature and breadth, as it primarily centers on doing a thorough assessment of all pertinent and published materials pertaining to complying new technological applications within the context of Islamic financial institutions.

This study adds a number of important contributions to the previously published research. (1) This is the first study of its kind to highlight the fundamental characteristics of publications in the Islamic FinTech sector. These fundamental characteristics include the annual progress, the most influential articles, and the co-occurrence of keywords, in addition to the evolution of research streams throughout the course of the years. (2) In addition to this, the report provides a detailed analysis of the research articles that are associated with Islamic FinTech as well as each subcategory that falls under it. (3) The research examines a total of 85 previous papers published between 2017 and 2022 using a hybrid approach that combines bibliometric

techniques with content analysis. (4) Lastly, it gives an outline of the current unique environment of Islamic FinTech as well as the issues that are faced by in addition to suggesting future study directions.

This study builds upon the existing research landscape by providing valuable contributions to the understanding of the Islamic FinTech sector. The research gap is identified in terms of the limited exploration into regulatory frameworks, practical implications faced by practitioners, and the influence of cultural and religious factors on Islamic FinTech. The novelty lies in the comprehensive analysis of fundamental characteristics, detailed examination of research articles and subcategories, and the hybrid approach combining bibliometric techniques with content analysis. This multifaceted approach aims to contribute to a more nuanced understanding of the Islamic FinTech sector, providing insights for policymakers, researchers, and industry practitioners. The following is a list of the goals that have been outlined:

RO1: To conduct an analysis of the most recent publishing trend in Islamic financial technology.

RO2: To determine the primary research topics that have been covered by previous studies on Islamic FinTech.

RO3: To examine the principal result as well as the limits of the research that were chosen.

RO4: To identify any gaps in the research and make suggestions on how these could be filled in the future.

2. Review Methodology

2.1. Methodology and the Structure of the Study

In order to provide a quantitative and qualitative view on the progression of Islamic FinTech research, the study makes use of a number of different methodologies, including as bibliometric analysis, content analysis, and SLR. Bibliometric is a quantitative analysis that helps researchers to uncover the rising trend of collaboration networks and determine the intellectual structure of a certain field of study (Liu et al., 2020; Donthu et al., 2021). This analysis was developed by Liu and Donthu. Utilizing this strategy for mapping Islamic FinTech study that is based on statistical analysis is useful. In addition, this investigation makes use of content analysis as well as Systematic Literature Review (SLR) because doing so enables the researcher to classify the body of literature, evaluate the gaps in previously conducted research, and provide suggestions pertaining to the research issue (Paul and Criado, 2020). Preferred Reporting Items for Systematic Reviews and Meta-Analyses, or PRISMA, is a method that is well-suited to synthesis the study finding from the most significant selected papers in this research field. The SLR that was utilized was based explicitly on PRISMA. We adhere to the PRISMA guideline that was suggested by Moher et al. (2009). These researchers broke down PRISMA into its primary components, which are the following: identification, screening, eligibility assessment, and identification of the findings. This strategy ensures that the data collection process as well as the total number of papers that are considered for evaluation are completely transparent.

2.2. Data Source and Collection

The data for this study was collected from the Scopus database, which is widely recognized and encompasses a wide range of social subjects, including business and finance (Guckenbiehl et al., 2021). According to Alshater et al. (2020), the Scopus database exhibits a higher volume of

Islamic finance research compared to other databases such as Web of Science. Additionally, Scopus includes a larger number of rigorously validated studies in comparison to those exclusively found on Google Scholar, EBSCO, or ProQuest. Furthermore, a number of prior literature reviews pertaining to Islamic economics, banking, and finance have predominantly utilized Scopus as their primary source. Examples of such studies include Paltrinieri et al. (2020), M. K. Hassan, Aliyu, et al. (2020), and Foglie and Panetta (2020). Figure 1 illustrates the sequential process involved in collecting data for bibliometrics and Systematic Literature Review (SLR) using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. In this study, the analysis of bibliometrics is employed to address the research objectives RO1 and RO2, while the systematic literature review using the PRISMA framework is utilized to investigate the research objectives RO3 and RO4.

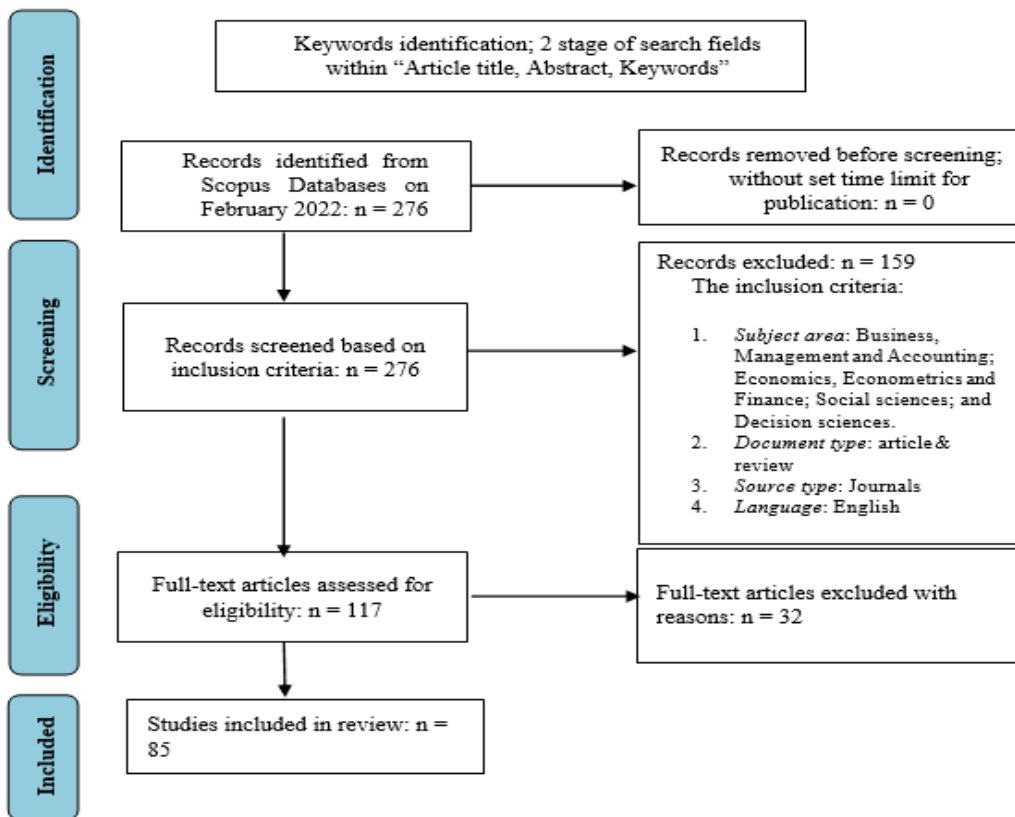


Figure 1. A Flow Diagram Illustrating the Article Selection Process for PRISMA.

Based on Figure 1 the initial stage in the data collection process involves the identification of keywords for the purpose of data curation. The extensive growth of literature on Islamic FinTech, encompassing several fields such as technology and religion, has presented difficulties in determining appropriate keywords. According to Lee and Shin (2018), there exist six distinct business models within the FinTech industry. These models encompass lending, capital market activities, insurance services, wealth management, payment solutions, and crowdfunding. Laidroo et al. (2021) conducted a comprehensive analysis and identified seven distinct activities within the realm of FinTech. These activities include: (1) Payment activity, which pertains to the utilization of online and mobile payment models; (2) Deposit and lending activity, encompassing crowdfunding, peer-to-peer lending, microlending, and consumer financing

models; (3) Investment management activity, which involves Robo-advice, social trading, and automated advice models; (4) Distributed ledger technology activity, which encompasses digital currency and blockchain models; (5) Banking infrastructure activity, which focuses on user interface and open banking models; (6) Analytics activity; and (7) Insurance.

Given the consideration of the prior explanation, the selected key words for this study were identified by doing a pre-simulation to ensure that the keywords cover the majority of the previously published research on Islamic FinTech. This was done in light of the consideration of the preceding explanation. In addition, the choice of keywords also made reference to earlier scientometric research conducted by a variety of researchers who attempted to cluster the knowledge in this area. For instance, Liu et al. (2020), suggested including the words "P2P," "crowdfunding," "blockchain," "crypto- currency," "robo-advisors," and "mobile payment," as they are related to FinTech business model. This research was conducted by various researchers.

In accordance with prior scholarly works, the present study utilised a range of significant search terms, namely "Fintech" OR "Financial Technologies" OR "Financial Technology" OR "finance technology" OR "Islamic Fintech" OR "Blockchain" OR "Digital Finance" OR "P2P" OR "P2P Lending" OR "Credit Scoring" OR "Robo Advisor" OR "Insurenctech" OR "Smart Contract*" OR "Bitcoin" OR "Crowdfunding" OR "Crypto*" OR "Financial Inclusion" within the Article Title, Abstract, and Keyword sections. The aforementioned key terms were subsequently amalgamated with an additional set of keywords, specifically "Islam*" OR "Shariah" OR "Shari'ah," in order to encompass the domain of Islamic FinTech. As a result, during the initial round of data curation, a total of 265 documents were obtained. Furthermore, this study aims to examine the existing literature on Fin-Tech from an Islamic perspective. To achieve this objective, we conducted an additional data search using the keywords "Financial Inclusion" in the Article Title, Abstract, and Keyword fields. We then combined this search with the keywords "Islam*" OR "Shariah" OR "Shari'ah" in one search field, and "fintech" OR "finance technology" OR "financial technologies" OR "digital finance" in another search field, to gather relevant a Therefore, during the second round of data curation, a total of 11 documents were acquired. The data for this study was obtained from the Scopus database in February 2022, yielding a total of 276 papers.

The subsequent phase involves the process of data screening. The articles chosen in the preceding stage are subjected to a filtration process that adheres to the criteria outlined in Figure 1. Therefore, a total of 159 documents out of the initial pool of 276 were deemed ineligible based on our screening criteria. Consequently, this screening process resulted in the identification of 117 studies that may meet the requirements for relevance. Previous systematic literature review (SLR) studies on the topic of Islamic banking and finance, conducted by scholars such as Narayan and Phan (2019), Khan et al. (2020), and Foglie and Panetta (2020), have recommended the inclusion of articles published in highly reputable peer-reviewed journals. These journals are typically assessed based on their A and A* ranking as indexed by the ABDC journal list, or their two-star and above rating on the ABS list. However, due to the limited availability of articles specifically focused on Islamic FinTech in these esteemed outlets, the present study has relied solely on the Scopus database for the selection of relevant documents.

The third phase involves evaluating the papers to ensure their suitability for inclusion in the review, which entails thoroughly examining the complete text of each publication. The criterion employed in this stage pertains to the substance of the article, wherein we adhered to Lundberg

et al.'s (2006) approach of concealing the article's identity, including the names of journals and authors, to mitigate subjectivity in the manual refinement process. Additionally, we employed the following inclusion criterion: The research encompasses three main areas: (1) Investigations pertaining to Islamic FinTech; (2) Analyses examining the significance and influence of Islamic FinTech in many domains such as business, Islamic economics, philanthropy, banking, stock market, and the halal industry; and (3) Inquiries exploring a specific business model within the realm of Islamic FinTech. The exclusion criteria for this study are as follows: (1) Studies that primarily focus on themes other than Islamic FinTech, with just a minor emphasis on this subject matter; and (2) Studies that do not provide significant and meaningful insights into the field of Islamic FinTech. A total of 32 papers have been removed from the analysis, resulting in a remaining 85 articles for the final evaluation. The ultimate stage involves the classification and synthesis of literature findings. In this phase, we have extracted the significant findings from prior research and have subsequently presented them in tabular form for analysis and discussion. Furthermore, we conduct an analysis of the existing research gaps and limits in the field of fintech and Islamic fintech, with a focus on early career researchers. Additionally, we want to propose potential avenues for future study in this area.

3. Results

The Bibliometrics study is used to address RO1 and RO2 questions on Islamic FinTech publications. The publication trend is widely used to demonstrate a discipline's current progress and scientific output (Liu et al., 2020). The general performance analysis is offered to handle RO1, while RO2 is addressed by using co-occurrence author keyword and co-word analysis on the title and abstract of the publication. Our data suggests that the first publication about Islamic financial technology occurred in the year 2017. In the time since then, a total of 52 journals have published 85 articles. In addition, there have been 205 authors who have contributed to FinTech-related studies. Ten of these authors worked on their articles on their own, while the other 195 individuals worked together on the research. At 2.83 points, the collaboration index is significantly higher than average. Therefore, the high percentage of multi-authored papers and the collaboration index are related with the interdisciplinary character of Islamic FinTech with other disciplines such as business and economics, finance, law, shariah, and information technology. Consequently, this is the reason for the high percentage of documents with multiple authors.

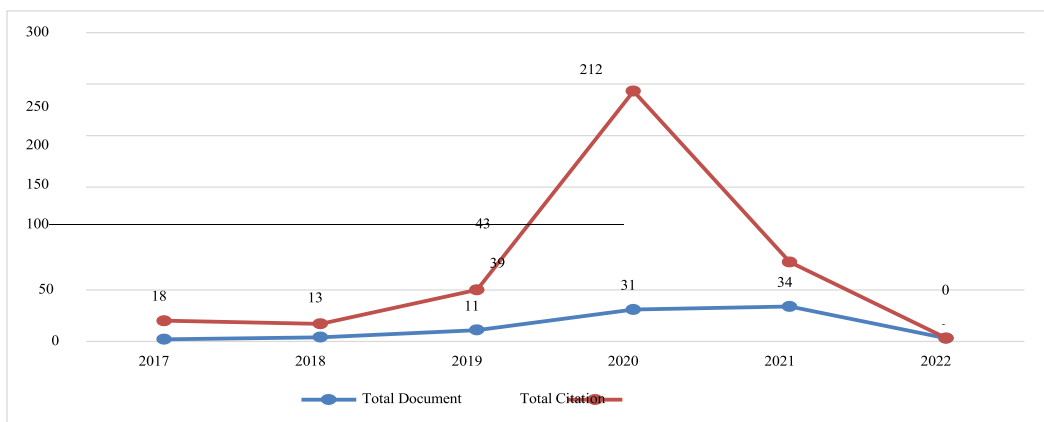


Figure 2. The Increasing Numbers of Published Articles and Citations, as well as the General Trend.

The annual trend of Islamic FinTech articles and citations from 2017 to 2022 is depicted in Figure 2. During the years 2017–2019, there was no discernible shift in the pattern of citation performance; a total of 332 references were made to Islamic FinTech's 85 published papers. Given the increasing moving average trend and the large escalation of Islamic FinTech in terms of asset and performance, this study predicts that the total publishing and citation of Islamic FinTech will significantly increase in the following five years. In conclusion, this analysis forecasts that this increase will take place. According to Paltrinieri et al.'s (2020) findings, determining the co-authorship analysis will assist researchers in developing their research partnership, which will ultimately result in articles of a higher quality. It presents a view that is both comprehensive and international in scope. According to Van Eck and Waltman (2014), the linkage between the countries is represented by the distance between the nodes in the network; the closer the nodes are to one another, the stronger the connectivity and the more closely related the countries are.

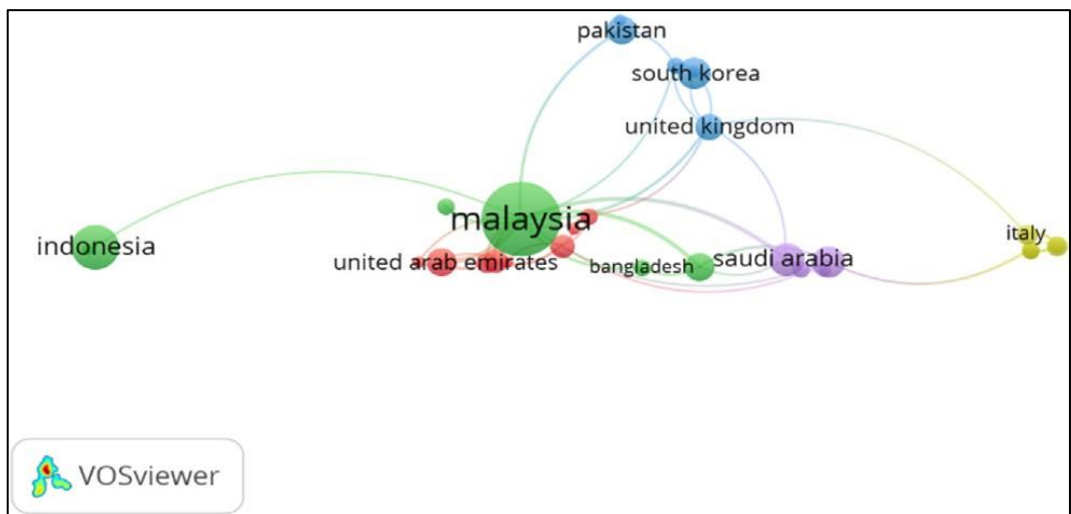


Figure 3. A Map Showing the Nations Included in the Collaboration Network.

The scientific collaboration between countries on interdisciplinary FinTech is outlined in Figure 3, which includes countries that have produced at least one paper in this area. In addition to this, it demonstrates how the national collaboration network was structured into five distinct groups. It has been suggested that Malaysia serves as the hub for the research relationship between the United States of America, Indonesia, Bangladesh, Japan, and Finland that is associated with the green cluster. This result suggests that these countries have published a topic of debate on Islamic financial technology that is comparable to the one in question. In addition, the fact that the distance between the nodes connecting Malaysia and the United Arab Emirates (UAE) is quite low (the red cluster), suggests that these nations frequently collaborate on research projects. It should also be noted that Malaysia and the United Kingdom are present among the closer nodes. Therefore, the network of collaboration that exists between these two countries is one that possesses a relative degree of strength.

In addition, the nations of France, India, Oman, Palestine, Luxemburg, the Russian Federation, and the United Arab Emirates are included in the red cluster. These nations share interests in a variety of subject areas. In addition to that, the countries of Australia, China, Pakistan, South Korea, the United Kingdom, and Vietnam were located in the blue cluster. These nations have a robust relationship with Malaysia, Saudi Arabia, and Italy as their research partners, and the

connection is very strong. In addition, the countries that fall into the yellow cluster—Canada, Greece, Italy, Malta, and Morocco—tend to be conducting research on the same subject. The final countries to be discovered in the purple cluster were Saudi Arabia, Kuwait, Tunisia, and Bahrain. In conclusion, research relating to FinTech and the Islamic banking business has extended around the world and attracted academics from a variety of countries, including some countries where the majority of the population is not Muslim.

3.1 The Primary Focus of this Research Revolves around the Central Theme

An examination of keyword co-occurrence is used to present Islamic FinTech study on the subjects that have received the greatest attention. (Baker et al., 2020) The mapping analysis provides a visual representation of the topic that arises most frequently based on the co-occurrences of keywords.

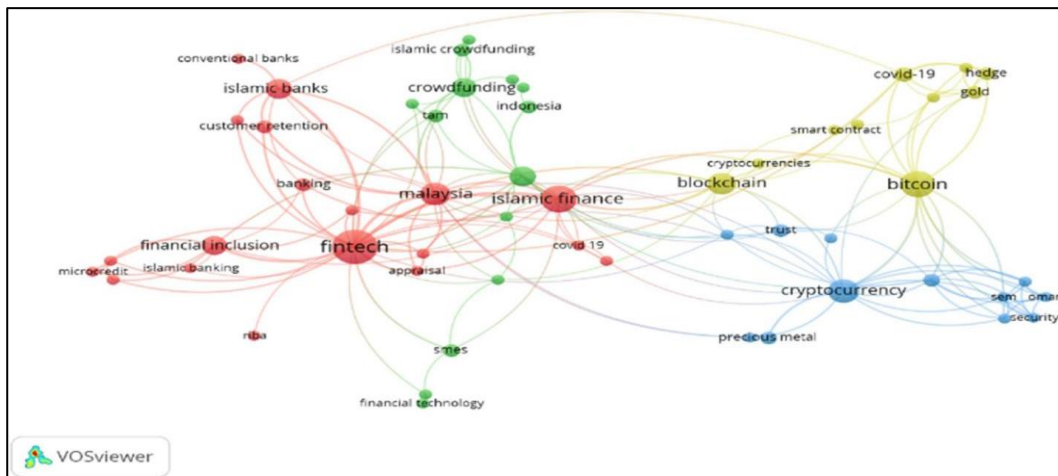


Figure 4. Analysis of the Keywords.

Figure 4 provides a description of the following keyword occurrence: author essential words by establishing the requirement that the term must appear a minimum of twice. According to the figure, this investigation substantiates the existence of four distinct clusters. The terms "FinTech," "Islamic finance," "Islamic bank," "financial inclusion," "riba," and "customer retention" are the ones that appear in the red cluster the most frequently. While this is going on, the phrases bitcoin, cryptocurrencies, blockchain, gold, Malaysia, smart contract, and COVID-19 are the ones that are used the most frequently in the yellow cluster. Within the blue cluster, the most often used keywords are bitcoin, shariah compliance, trust, precious metal, security, system and technology, and SEM. Last but not least, the keywords crowdfunding, Islamic crowdfunding, Indonesia, TAM, and SME appear the most frequently in the green cluster. On the basis of the occurrence of the keyword, the red cluster is associated with the incorporation of FinTech in Islamic financial institutions, whereas the yellow cluster focuses mostly on analysing the association between FinTech's products and the Islamic stock market. Both of these clusters are based on the research that was conducted. The research that falls under the blue cluster includes studies on topics such as shariah compliance and the faith that customers place in FinTech. In conclusion, we will discuss the green cluster analysis of the acceptability of FinTech technologies in SMEs.

This study also provides an examination of the themes that have become increasingly popular over the years. According to Van Eck and Waltman (2014), a co-word analysis on an article's

title and abstract may be produced and visualised to identify the research primary theme clusters based on research subject similarities. They emphasised that this analysis can be done. The older topics are represented by the nodes and links that are darker. As can be seen in Figure 4, an analysis of the keywords reveals that the oldest issues in Islamic FinTech are those that deal with the concept of financing and payment. Although the most recent themes on Islamic FinTech encompass research on topics such as financial inclusion, social consequence, role, intention, and benefit, COVID-19 is not one of them. In addition, intention, ease, sample, factor, and determinant were the most prominent concepts in the most recent discussion. As a result, one can get the following conclusion: study examining the impact of FinTech and the aim to implement FinTech in the Islamic finance business has become a topic that is being discussed more frequently recently.

3.2 An Examination of the Content of Islamic Financial Technology Publications

This section is subdivided into two sections. The initial section of the paper discusses the RO3 framework, which classifies the existing literature into four distinct streams.

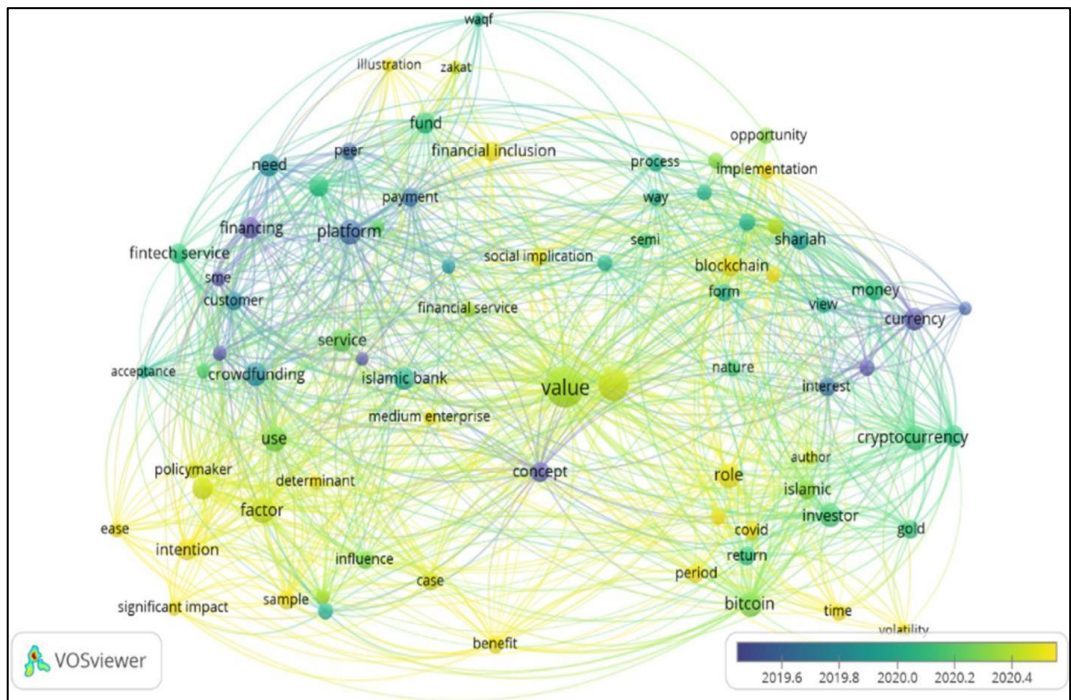


Figure 5. The Issues that have been of Concern During the Previous Few Years.

Figure 5 visually represents the issues that have been a focal point in recent years, categorized into distinct streams. These streams encompass financial technology with sub-streams like customer perception on Islamic FinTech and the current development of Islamic FinTech impacting Islamic finance institutions. Another stream involves Islamic FinTech and distributed ledger technology, including sub-streams such as cryptocurrency and blockchain. Financial inclusion forms a separate stream, and finally, there is a stream on Islamic FinTech and deposit-lending, with sub-streams covering peer-to-peer lending and crowdfunding. This classification provides a structured overview of the key concerns in the Islamic FinTech sector. The subsequent section of the study addresses the existing research gap, aiming to shed light on the fourth research objective (RO4) by providing recommendations for future research

endeavors. This integration emphasizes the importance of understanding the identified issues and directing future research efforts towards addressing the gaps in knowledge within the Islamic FinTech landscape.

A. Stream 1: The Field of Financial Technology

This stream comprises a collection of 20 articles that can be categorised into two distinct sub-streams. The first sub-stream focuses on the customer perspective of Islamic FinTech, including its ongoing development and the subsequent influence it has on Islamic finance institutions. The initial sub-stream pertains to the perception of customers. The majority of research endeavours in the field of Islamic FinTech evaluate customer perception by examining various factors such as customer intention to use Islamic FinTech (Darmansyah et al., 2020; Oladapo et al., 2021), customer acceptance (Shaikh et al., 2020), customer satisfaction (Baber, 2019), customer retention (Baber, 2020b, 2020c), and customer trust (M. Ali et al., 2021). According to Baber (2020b), Islamic finance institutions offer a range of services in the field of FinTech, including payments, crowdsourcing, consulting, financing, and compliance. Previous research have identified several significant aspects that influence customers' inclination to utilise Islamic FinTech.

Firstly, the concept of shariah compliance. The question of whether religiosity influences customers' adoption of Islamic banking is a topic of ongoing discussion among scholars and practitioners. However, recent studies conducted by Baber (2020b) and Marzuki and Nurdin (2020) have provided evidence that clients of Islamic banking exhibit a significant interest in the shariah-compliance of FinTech products. Furthermore, Baber (2019) asserts that the adherence to shariah principles in FinTech services is a significant determinant of client happiness. In order to ensure client loyalty and happiness, it is imperative that there is a significant improvement in the quality and performance of Islamic banking, particularly in the realm of mobile banking. Therefore, the findings of these research highlight the need to strengthen the responsibilities of the shariah monitoring board in order to ensure that the services provided adhere to Islamic principles.

Additionally, another important factor to consider is the level of user-friendliness. Darmansyah et al. (2020) conducted a noteworthy study which asserts that the technological acceptance model emerges as the primary determinant influencing customers' inclination to use FinTech, specifically in the context of peer-to-peer (P2P) services. I. M. Shaikh et al. (2020) conducted a comprehensive investigation and determined that the perceived simplicity of use and utility of a product or service significantly influence customer intention. Similarly, Baber (2019) posited that the design of applications has significantly enhanced customer satisfaction in the use of Islamic FinTech. Furthermore, the study conducted by M. Ali et al. (2021) highlights the role of safe Islamic FinTech applications and operations in enhancing client confidence while engaging with Islamic FinTech services. Therefore, a significant conclusion that can be derived from these studies is the crucial role of user experience in the utilisation of Islamic FinTech. Therefore, it is imperative for FinTech providers to prioritise the enhancement of the quality of their FinTech applications and websites, taking into account the requirements of customers and the latest advancements in the field.

Thirdly, an important aspect to consider is the level of client knowledge. According to the findings of Oladapo et al. (2021), there exists a considerable relationship between customers' awareness of Islamic FinTech and their inclination to adopt FinTech services. Furthermore, the findings are corroborated by Baber (2020c), who asserts that the provision of

comprehensive information pertaining to Islamic values has a positive impact on consumer satisfaction. These studies highlight the importance of continuous professional development for banking practitioners and operators in order to enhance their ability to provide consumers with complete information in the field of FinTech. This can be achieved through regular attendance at training sessions, seminars, and conferences.

The absence of comprehensive legislative frameworks from policymakers poses a significant challenge to the advancement of Islamic FinTech, notwithstanding its substantial expansion. According to a study conducted by Nurhasanah and Rahmatullah (2020) in Indonesia, it was found that Islamic FinTech providers lag behind their conventional counterparts in terms of regulatory frameworks, legal considerations, and operational guidelines. The lack of clarity surrounding the legal framework governing Islamic FinTech has contributed to the inadequate protection of clients' data and the proliferation of illicit FinTech activities. Furthermore, the lack of effectiveness exhibited by shariah supervisors in their capacity as regulatory authorities has emerged as the principal obstacle impeding the progress of FinTech start-ups (Ilyas et al., 2020; Tajudin et al., 2020). In the context of Malaysia, the government has established a precise objective to digitise the financial sector. This objective encompasses the liberalisation of distinct domains, such as insurance, trading help, Robo-advisory, and peer-to-peer financing. This paper examines the growth of FinTech start-ups in Malaysia and Finland, highlighting the necessity of dedicated committees and regulatory frameworks to facilitate the advancement of Islamic FinTech.

B. The Second Stream of Discussion Focuses on the Intersection between Islamic Finance and Distributed Ledger Technologies

This stream is comprised of 33 articles and can be further subdivided into two substreams: Blockchain (eight entries), and Cryptocurrency (twenty-five articles). Table 3 contains a list of all of the articles that are included in this stream. The first sub-stream is focused on the cryptocurrency literature, and it mostly analyses the function of cryptocurrencies from the viewpoint of shariah, as well as the risk-reward tradeoff associated with cryptocurrencies. (Ajouz and colleagues, 2020; Hammad, 2018; Lietaer, 2017; Oziev and Yandie, 2018; Saleh and colleagues, 2020; Siswantoro and colleagues, 2020; Virgana and colleagues, 2019; M. Abubakar and colleagues, 2019; N. Khan and colleagues, 2020; Lahmiri and Bekiros, 2019; Lahmiri and colleagues, 2020; Mensi and colleagues, 2020; Rehman and colleagues, 2020). In Islamic finance, money is not seen as a commodity that can be bought and sold; rather, it is seen as a medium of exchange. However, the advent of digital currencies has reignited the discussion on the nature and dynamics of money, particularly as it relates to digital currencies, also known as cryptocurrencies. This is particularly true in the context of digital currencies. In this context, Oziev and Yandie (2018) extensively analysed the nature and features of bitcoin and found no contradiction between Islamic law and bitcoin. Since the publication of Nakamoto's key work in 2008 (Figuera and Tortorella Esposito, 2019; Mohamad and Sifat, 2017; Oberauer, 2018), a great deal of literature has been produced discussing the current state of money and the role it plays in the economy as a whole.

Despite this, cryptocurrencies have received a lot of backlash for the way in which its functionality is perceived (Abozaid, 2020; Y. S. Abubakar et al., 2018). The following are the primary reasons for this. To begin, all of the goods that fall under the name of cryptocurrencies are the result of financial engineering rather than being backed by real economic assets. As a result, Islamic finance cannot accommodate this kind of finance in any way. The concept of Islamic finance provides a system of financial intermediation that is founded on actual, physical

assets, which, by their very nature, reinforce the economy and make it more resistant to economic upheaval. Second, according to M. K. Hassan and his colleagues (2019), Islamic finance does not permit transactions that are based on interest or speculation. Recent research indicates that cryptocurrencies exhibit inefficiency (Bariviera, 2017; Nadarajah and Chu, 2017; Tiwari et al., 2018), high volatility, and speculative behavior (Cheah and Fry, 2015; Elsayed et al., 2020; Katsiampa, 2017). Furthermore, they are found to be highly sensitive to macroeconomic factors (Demir et al., 2018; P. Wang et al., 2020) and lack flexibility and acceptability (Hanif, 2020). Consequently, due to their speculative nature (Baur et al., 2018), cryptocurrencies are deemed unsuitable as a medium of exchange in practical applications. Furthermore, it has been seen that crypto-currencies are utilized in illicit practices, including money laundering and the acquisition of narcotics and weaponry (Hammad, 2018). Cryptocurrencies are a form of digital currencies that typically lack asset-backing or central bank issuance, therefore distinguishing them from fiat money in terms of their inherent characteristics. Lastly and significantly, as a result of the issues outlined above, cryptocurrencies lack direct backing from any nation or regulatory authority, in contrast to fiat currency, which has ramifications for monetary policy. Furthermore, Mohd Nor et al. (2021) asserted that enhancing the use of blockchain technology in Islamic social finance, particularly in the context of zakat, may be achieved by effective community engagement and educational initiatives aimed at raising awareness about the substantial benefits and convenience associated with its utilization. It is anticipated that this endeavor will result in a significant enhancement in the collecting and allocation of zakat for the betterment of society. Furthermore, Abdeen et al. (2019) have highlighted the crucial need for a certification issued by a recognized legal authority that delineates the specific responsibilities of investors, entrepreneurs, and operators. This certification is of utmost importance in effectively managing and ensuring the safety and compliance with shariah principles in blockchain transactions, which is expected to significantly enhance the involvement in Islamic finance. The research conducted suggest that the implementation of blockchain technology will have a positive impact on client engagement within the Islamic finance sector (Abdeen et al., 2019). As a result, it facilitates the enhancement of the economic growth through the promotion of the Islamic finance instrument. Numerous studies have also investigated the relationship between blockchain technology and the capital market.

C. The 3 Streams on Financial Inclusion

This dataset comprises a total of 13 research projects, as outlined in Table 4. The focus of these studies is to examine the impact and significance of Islamic FinTech in promoting financial inclusion. This article presents a debate on several significant academic papers. Islamic social finance instruments, including zakat, sadaqah, waqf, Islamic microfinance, and micro takaful models, have been identified as contributing factors to the achievement of financial inclusion (Macchiavello, 2017; Zauro et al., 2020). The utilization of Islamic social finance instruments has been found to have a favorable influence on the promotion of financial inclusion. According to Zulkhibri (2016), the widespread utilization of Islamic social finance instruments contributes to a reduction in economic inequality among nations that adhere to the Islamic faith. The utilization of financial technology has expanded the accessibility of Islamic financial institutions to individuals at the end of the line, through the implementation of social finance mechanisms such as zakat, waqf, and Islamic microfinance (H. Ahmed and Salleh, 2016). This assertion is further substantiated by the study conducted by Aziz et al. (2021), which examined the relationship between digital banking and financial inclusion. The findings of their research indicate a positive association between digital banking and financial inclusion. Furthermore,

Ezzahid and Elouaourti (2021) elucidated that digital banking assumes a significant role in diminishing the population of individuals without access to traditional banking services by offering convenient and competitively priced financial access.

There exists a significant potential for Islamic FinTech to address this need by facilitating the provision of financial services to this specific demographic and instilling trust in the financial system through technological means. The integration of technology with Islamic finance is a viable approach to attaining financial inclusion, as suggested by Kim et al. (2018). Islamic FinTech emerges as a promising avenue for advancing this objective. Nawaz (2017) has conducted studies examining the role of Islamic finance in comparison to conventional finance in facilitating financial inclusion. According to the findings of Albaity et al. (2019), Islamic FinTech is predicated upon ethical and moral principles, rendering it particularly suitable for facilitating financial inclusion.

According to Khan et al. (2019), is emphasized that Islamic finance encompasses several financial services, such as zakat, which inherently contribute to the achievement of financial inclusion. The assertion made in the statement is further supported by the research conducted by Sain et al. (2018), whose findings suggest that the integration of Islamic financial services with technology has the potential to promote financial inclusion. However, it is important to note that there exists reputable research, such as the one conducted by Baber (2020a), which have reached the conclusion that there is no discernible correlation between the use of Financial Technology (FinTech) and the promotion of financial inclusion. Extensive research has demonstrated that the incorporation of Financial Technology (FinTech) has the potential to increase the proportion of individuals with access to banking services and enhance the performance of Islamic finance.

Despite the prevalence of certain challenges, the limited access to quality education, particularly among women and older individuals, hindering their effective utilization of FinTech; the existence of risks such as network disruptions and account security concerns; the relatively lower number of smartphone users; and the absence of robust regulatory frameworks pertaining to FinTech, emerge as significant barriers impeding the widespread adoption of FinTech in the domains of Islamic economics, finance, and banking. Hence, the conclusions drawn from previous research indicate that it is imperative for stakeholders to initiate a significant endeavor aimed at fostering a favorable atmosphere for the integration of FinTech in Islamic social-economic and financial institutions. The implementation of regular seminars, campaigns, workshops, and training sessions aimed at enhancing digital financial literacy has been found to enhance the efficacy of mobile banking utilization, particularly among marginalized groups such as the unbanked community, small business owners, individuals with limited education, women, and elderly individuals (Banna et al., 2021; Ezzahid and Elouaourti, 2021). It is of utmost importance to establish a comprehensive framework for regulating Islamic FinTech at both national and international levels. This regulatory standard is crucial for enhancing the collaboration between FinTech and Islamic financial institutions, as well as for enhancing the proficiency of shariah board members, specifically in technological domains. The objective is to ensure that the regulation of FinTech within the Islamic finance sector aligns with the principles of shariah, as highlighted by Razak et al. (2020).

D. The 4 Streams: Islamic Financial Technology and the Lending of Deposits

There has been a total of 19 prior studies conducted on this particular subject matter, which may be categorized into two distinct subcategories: peer-to-peer (P2P) lending, consisting of 4

publications, and crowdfunding, consisting of 15 papers. Previous research has focused on the examination of the challenges and potential advancements associated with Islamic peer-to-peer (P2P) lending. This sub-stream primarily focuses on the present state of development in Islamic peer-to-peer (P2P) platforms. The initial sub-theme pertains to peer-to-peer lending. Peer-to-peer (P2P) lending refers to an online platform that facilitates the provision of funds from lenders to borrowers (Rosavina et al., 2019). The conventional understanding of peer-to-peer (P2P) lending diverges from the Islamic understanding due to the prohibition of interest-based lending in Islamic finance. Consequently, P2P financing in an Islamic context might be considered a form of peer-to-peer financing that adheres to Shariah principles, although being commonly referred to as lending. Peer-to-peer (P2P) lending is a financial service offered by the financial technology (FinTech) industry. It is anticipated to emerge as the most convenient financial platform for those who do not have access to traditional banking services. In their study, Rosavina et al. (2019) examine many aspects that influence the utilization of the Islamic P2P platform. This study aimed to determine the impact of rejection from banking institutions on customers' search for alternative financing options. These alternatives include peer-to-peer lending, which provides a longer repayment time, as well as shariah-based loans and profit loss sharing schemes.

According to Sa'ad et al. (2019), the P2P lending platform is anticipated to emerge as a novel financial service, offering several advantages such as enhanced speed, efficiency, and superior channels compared to traditional banks. A noteworthy study conducted by W. Ali et al. (2018) presents a conceptual framework that offers predictions on the inclination of Small and Medium Enterprises (SMEs) to use Financial Technology (FinTech) in the context of Peer-to-Business (P2B) financing platforms. This study examines two significant aspects that could impact the adoption of the P2B platform. The internal elements encompass cost, brand, security, perceived ease of use, and usefulness, while the external factors encompass social influence and facilitating conditions. Furthermore, it is worth noting that the examination of SMEs' intention to embrace P2P and P2B platforms from an Islamic perspective remains insufficiently explored in existing research. Hence, this study posits that there is a pressing need for comprehensive research to elucidate the determinants that influence the adoption of FinTech platforms by small and medium-sized enterprises (SMEs).

The subsequent sub-theme explored within this discourse pertains to the concept of crowdfunding. Crowdfunding is a comprehensive notion that originates from crowdsourcing, with the objective of gathering financial support from numerous individuals for various types of projects, including those with social, profitable, or artistic purposes (Mollick, 2014). Crowdfunding, as defined in the literature, refers to an open solicitation made primarily through the Internet to acquire financial resources. These resources can be obtained either through donations or in exchange for rewards and voting rights. The purpose of crowdfunding is to provide support for projects that are driven by social, profitable, or cultural motives. This definition is supported by the works of Mollick (2014) and Schwienbacher and Larralde (2010). The inception of crowdfunding-based initiatives may be traced back to the year 1800, when the funding for the pedestal of the Statue of Liberty was first launched. In the year 2000, the development of a website called Arist-Share was initiated with the primary objective of establishing a digital platform that facilitates artists in their endeavors to get financial resources. According to the World Bank (2013), crowdfunding may be classified into four primary categories. Donation-based crowdfunding operates solely on the principles of philanthropy and voluntary contributions, without offering any kind of remuneration to the individuals or entities providing the financial support. Furthermore, debt-based crowdfunding operates based

on contractual agreements centered around debt. The crowd lender offers financial support to small enterprises or startups and in return, receives a predetermined fixed interest and principal payment within a specified timeframe. Thirdly, reward-based crowdfunding refers to a scenario in which the individual or entity providing financial resources is reciprocated with a token of gratitude or recognition, typically in the form of a gift or acknowledgment, for their contribution towards the advancement of the project. Equity-based crowdfunding mostly operates on a profit and loss sharing model of financing, making it closely aligned with the principles of venture capital.

In light of the remarkable expansion observed in the crowdfunding industry, it is important to acknowledge that this domain is not exempt from certain constraints, particularly when viewed through the lens of Islamic law. One of the primary and significant factors hindering its expansion is the presence of regulatory obstacles. One potential solution to mitigate credit risk in the context of credit insurance is the implementation of a crowdfunding model. The adherence to the legal framework of a country is a subject of concern when considering the profit distribution method in Islamic equity crowdfunding, which is rooted in the *mudharabah* paradigm. According to Saiti, Musito, et al. (2018), Islamic crowdfunding is exclusively permitted for businesses that are considered legitimate in Islam and are prohibited from adopting a conventional lending technique, which involves the inclusion of interest. In conclusion, the presence of fraudulent activities and scams poses significant challenges to the establishment of a secure and reliable crowdfunding market, irrespective of its specific structure and strategy (Ishak & Rahman, 2021). Moreover, from the standpoint of business owners, engaging in an online crowdfunding platform increases the likelihood of their business ideas being replicated. Consequently, individuals exhibit hesitancy in disclosing comprehensive personal information on the internet. Consequently, individuals exhibit an increased inclination towards reluctance in seeking financial support through online crowdfunding platforms (Rahman et al., 2020). Hence, it is imperative to foster knowledge among all relevant parties and institutionalize this understanding at a broader level, which include the establishment of shariah regulations for crowdfunding platforms (Shofiyah et al., 2019; Baber, 2021).

E. 4. The Future Studies

This part addresses the research gap identified through bibliometrics and content analysis in previous studies, delving into the general characteristics of the literature revealed by these methods. The content analysis evaluated a total of 85 documents, categorizing them into five distinct streams. The most frequently discussed issues, comprising 39% of the total discussion (33 out of 85 papers), revolved around the specifics of Islamic FinTech and deposit-lending, encompassing sub-streams related to cryptocurrencies and blockchain technology. A comprehensive examination of the broader FinTech issue and the theme of financial inclusion attracted approximately 23% of the audience, while Islamic FinTech linked to deposit and loan, with sub-streams of P2P lending and crowdfunding, garnered around 22% of the audience. Financial inclusion emerged as the least popular issue among scholars, evident in the Scopus database containing only 13 papers, representing 15%. Notably, P2P lending stood out as the subtheme with the least research, with only four publications in this field. In the subsequent presentation, Table 1 outlines the areas for future studies in Islamic FinTech, providing a structured guide for directing research efforts in this dynamic and evolving field.

Table 1. Future Studies in Islamic Fintech.

Main Topic	Sub-Topic
FinTech	1. Does Islamic FinTech have a similar impact on Islamic and conventional banking performance?
	2. A comparative study on banking performance that provides and does not provide FinTech services.
	3. How does the theory of planned behavior contribute to Islamic FinTech services adoption?
	4. Problems, solutions, and a strategic priority for Islamic FinTech: Analytic Network Process approach.
FinTech	5. How does Islamic FinTech promote Sustainable Development Goals? Empirical evidence
Cryptocurrency: Islamic perspective, Development, and Performance	1. Is there a contagion effect between Islamic and conventional cryptocurrencies?
	2. What are the social impacts of Sukuk tokenization?
	3. The predicting factors of customers' behavioral intention to adopt bitcoin technology: SEM-PLS approach.
	4. Comparison of the adoption rate of cryptocurrency in a country introducing digital fiat money
Financial inclusion	1. What are the challenges of financial inclusion beyond the adoption of financial technology by the masses?
	2. How does financial inclusion affect the financial well-being of a society and the economic growth of a country?
	3. How Qardh-Al-Hasan, zakat, waqf, and Islamic microfinance affect the economic growth of a poor and vulnerable section of society and its role in financial inclusion?
	4. How FinTech-based Qardh-Al-Hasan, zakat, waqf, and Islamic microfinance can be utilized to help COVID-19 affected poor and help in financial inclusion?
	5. How do the theory of planned behavior and the theory of production function contribute to financial inclusion?
	6. Impact and role of Islamic banking in achieving financial inclusion.
	7. Financial inclusion and financial growth; are they related?
	8. What role Islamic microfinance institutions can play in achieving the objective of financial inclusion?
	9. Zakat and financial inclusion nexus: Empirical evidence from Muslim countries around the world.
	10. Role of Islamic Microcredit and Microfinance in the financial inclusion of the poor.
Blockchain	1. What is the risk-return trade-off between blockchain-based Sukuk and traditional Sukuk?
	2. What are the future challenges of blockchain adoption in Islamic finance institutions.
	3. How to integrate Blockchain into various Islamic finance business models.
Crowdfunding & P2P Lending	1. Factors influencing the adoption of P2P lending: evidence based on TAM theory.
	2. P2P lending: a competitor or collaborator for the banking industry?
	3. The intention to adopt crowdfunding amongst the youth entrepreneur with the role of social media as the moderating factor.
	4. Factors determining behavioral intention to use Islamic P2P lending: Empirical evidence
	5. Evaluating the opportunities and challenges in implementing crowdfunding.
	6. Qualitative research based on Focus Group Discussion on "What are the determinants of Islamic P2P lending potential failure?"
	7. Credit risk assessment on Islamic P2P lending platforms that adopted blockchain technology: A conceptual model

Industry 4.0, automation, and artificial intelligence, particularly Robo advisers in finance, have exhibited exceptional growth with the possibility of replacing human resources (Wang et al., 2021). This growth has occurred during the disruptive age. Nevertheless, Islamic investing has specific requirements that should follow shariah compliance, which is why attention should be drawn to this subject. Second, most of the research that went into the development of Islamic financial technology was carried out in nations in Asia with Muslim populations. These nations include Malaysia, Indonesia, Pakistan, and Nigeria. As a result, it has been proposed that research on these subjects could be broadened to include additional Muslim nations in the MENA region, in addition to certain other nations with a majority population that is not Muslim. And finally, the methodology of the research. Much of the prior research on crowdfunding, peer-to-peer lending, blockchain technology, and financial inclusion was qualitative. These financial instruments are in the beginning stages of incorporating elements of Islamic finance into their operations. Because of this, additional quantitative and conceptual analysis pertaining to the models and shariah compliance was required. On the other hand, most of the current research on the FinTech stream focused on discussing quantitative methodologies that were founded on secondary or primary data. In addition, in recent years, the previous studies on this stream of research have explored the determinant variables of intention in the use of FinTech.

5. Conclusion

In this study, a thorough literature development on interdisciplinary FinTech was portrayed using data obtained from the Scopus databases. The time span covered by this study ranged from 2017 to 2022. Based on the findings of a content analysis carried out using the SLR-PRISMA methodology, the research found that four distinct currents predominated in the debate of Islamic financial technology literature. In greater detail, the topics of financial technology (customer perception towards Islamic FinTech, 8 articles; Islamic FinTech development and its impact on Islamic Finance Institutions, 12 articles); Islamic FinTech and distributed ledger technology (Cryptocurrency, 25 articles; Blockchain, 8 articles); financial inclusion (13 articles); and Islamic FinTech and deposit-lending (P2P Lending, 4 articles; and Crowdfunding, 15 articles).

By conducting a content analysis on each stream, we were able to determine that the cointegration of FinTech and Islamic finance possesses significant potential in elevating socio-economic development. This is true in particular for the underdeveloped population, unbanked people, and small-medium sized firms. In addition, the implementation of FinTech in Islamic finance will assist the government in improving financial inclusion, overcoming financial crises (like the crisis brought on by COVID-19), and fulfilling the Sustainable Development Goals (SDGs) for the purpose of creating a sustainable nation. Nevertheless, the lack of rules and legal norms, as well as a lower level of financial literacy, become the key impediments that limit the development of FinTech in Islamic finance. In addition, this study highlighted that the shariah compliance of crypto-currency and blockchain is still equivocal, with a tendency toward rejection of cryptocurrencies as a medium of trade. These findings are based on the findings of earlier research, which were used to inform this study.

The fact that this research only used papers that were indexed by Scopus is a limitation that should be noted in addition to the study's theoretical and practical consequences.

References

- Abdeen, M., Jan, S., Khan, S., Ali, T., 2019. Employing Takaful islamic banking through state of the art blockchain: a case study. *Int. J. Adv. Comput. Sci. Appl.* 10 (12), 648–654.
- Abdullah, S., Oseni, U.A., 2017. Towards a sharī'ah compliant equity-based crowdfunding for the halal industry in Malaysia. *Int. J. Bus. Society* 18 (S1), 223–240.
- Abozaid, A., 2020. Does Shariah Recognize Cryptocurrencies as Valid Currencies?. In: *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability*. IGI Global, pp. 174–191.
- Abubakar, M., Hassan, M.K., Haruna, M.A., 2019. Cryptocurrency tide and islamic finance development: any issue? *Int. Finance Rev.* 20 (October), 189–200.
- Abubakar, Y.S., Ogunbado, A.F., Saidi, M.A., 2018. Bitcoin and its legality from shariah point of view. *SEISENSE J. Manag.* 1 (4), 13–21.
- Abubecker, F., Waheed, K., Nomani, A., Salman, T., 2019. Impact of financial inclusion in the development of MFI and SHG: a case study of Allahabad district. *Int. J. Adv. Sci. Technol.*
- Adewale, A.A., Haron, R., 2017. Democracy and socio-economic inclusion in Nigeria: reducing the mutual exclusivity through Islamic microfinance. *Al-Shajarah, Special Issue: Islam. banking and Finance* 1–26.
- Afroz, R., Tudin, R., Morshed, M.N., Duasa, J., Muhibbullah, M., 2019. Developing a shariah-compliant equity-based crowdfunding model towards a malaysian low-carbon consumer society. *Malaysian J. Consum. Family Econ.* 22s2 (November), 185–202.
- Agbo, F.J., Oyelere, S.S., Suhonen, J., Tukiainen, M., 2021. Scientific production and thematic breakthroughs in smart learning environments: a bibliometric analysis. *Smart Learn. Environ.* 8 (1), 1–25.
- Ahmed, H., Salleh, A., 2016. Inclusive Islamic financial planning: a conceptual framework. *Int. J. Islam. Middle E Finance Manag.* 9 (2), 170–189. M. H. A. P. M.
- Ahmed, W.M.A., 2021. How do Islamic equity markets respond to good and bad volatility of cryptocurrencies? The case of Bitcoin. *Pac. Basin Finance J.* 70 (January), 101667.
- Ajouz, M., Abdullah, A., Kassim, S., 2020a. Acceptance of Sharī'ah-compliant precious metal-backed cryptocurrency as an alternative currency: an empirical validation of adoption of innovation theory. *Thunderbird Int. Bus. Rev.* 62 (2), 171–181.
- Ajouz, M., Abdullah, A., Kassim, S., 2020b. Developing a shariah-compliant precious metal backed cryptocurrency. *JKAU: Islamic Econ* 33 (1), 101–116.
- Ajouz, M., Abdullah, A., Kassim, S., 2022. Shari'ah oriented precious metal backed cryptocurrency: from shari'ah advisors' and financial experts' perceptions. *Singapore Econ. Rev.* 67 (1), 439–458.
- Al-Sakran, H., Al-Shamaileh, O., 2021. P2P islamic investments using blockchain, smart contract and E-negotiation. *J. Theor. Appl. Inf. Technol.* 99 (1), 59–74.
- Al-Sartawi, A., Al-Okaily, M., Hannon, A., Khalid, A.A., 2022. Financial technology: literature review paper. In: A.M, M.A.-S. (Ed.), *International Conference on Global Economic Revolutions, ICGER 2021*, 423. Springer Science and Business Media Deutschland GmbH. LNNS (pp. 194–200).
- Alaeddin, O., Dakash, M. Al, Azrak, T., 2021. Implementing the blockchain technology in islamic financial industry: opportunities and challenges. *J. Inf. Technol. Manag.* 13 (3), 99–115.
- Albaity, M., Mallek, R.S., Noman, A.H.M., 2019. Competition and bank stability in the MENA region: the moderating effect of Islamic versus conventional banks. *Emerg. Mark. Rev.*
- Aldoseri, M., Worthington, A.C., 2017. Credit, liquidity and operational risk management in Islamic banking. In: *Banking: Services, Opportunities and Risks*. Nova Science Publishers, Inc, pp. 115–156.

- Ali, A.E.E.S., 2017. The challenges facing poverty alleviation and financial inclusion in North-East Kenya Province (NEKP). *Int. J. Soc. Econ.* 44 (12), 2208–2223.
- Ali, M.H., Chung, L., Kumar, A., Zailani, S., Tan, K.H., 2021a. A sustainable Blockchain framework for the halal food supply chain: lessons from Malaysia. *Technol. Forecast. Soc. Change* 170, 120870.
- Ali, M., Raza, S.A., Khamis, B., Puah, C.H., Amin, H., 2021b. How perceived risk, benefit and trust determine user Fintech adoption: a new dimension for Islamic finance. *Foresight* 23 (4), 403–420.
- 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. *Int. J. Innovative Technol. Explor. Eng.* 8 (2 Special Issue 2), 407–412.
- Almulla, D., Aljughaiman, A.A., 2021. Does financial technology matter? Evidence from an alternative banking system. *Cogent Econ. Finance* 9 (1).
- Aloui, C., Hamida, H. ben, Yarovaya, L., 2021. Are Islamic gold-backed cryptocurrencies different? *Finance Res. Lett.* 39 (March 2020), 101615.
- Alshater, Muneer M., Hassan, M.K., Khan, A., Saba, I., 2020. Influential and intellectual structure of Islamic finance: a bibliometric review. *Int. J. Islam. Middle E Finance Manag.* 14 (2), 339–365.
- Alshater, Muneer Maher, Othman, A.H.A., 2020. Financial technology developments and their effect on islamic finance education. *J. King Abdulaziz Univ. - Islam. Econ.* 33 (3), 161–187.
- Altwijry, O.I., Mohammed, M.O., Hassan, M.K., Selim, M., 2021. Developing a Shari’ah based FinTech money creation free [SFMCF] model for Islamic banking. *Int. J. Islam. Middle E Finance Manag.*
- Aminah, Soewito, Erisna, N., Tarmizi, R., Redaputri, A.P., 2020. The role of fintech and shariah banking industries in increasing economics inclusion in Indonesia. *Int. J. Sci. Technol. Res.* 9 (2), 979–982.
- Aprita, S., Adhitya, R., 2020. Shariah peer-to-peer lending for small and medium enterprise. *Talent Dev. Excel.* 12 (1), 1258–1263. <http://search.ebscohost.com/login.aspx?direct=true&db=s3h&AN=144307235&lang=ja&site=ehost-live>.
- Arsyianti, L.D., Kassim, S., 2018. Financial prudence through financial education: a conceptual framework for financial inclusion. *J. King Abdulaziz Univ. - Islam. Econ.* 31 (1), 151–166.
- Aydin, A.N., Iqbal, Z., 2017. Islamic Finance Approach to Financial Inclusion to Enhance Shared-prosperity. In: *Financial Inclusion for Poverty Alleviation: Issues and Case Studies for Sustainable Development*.
- Aziz, M.R.A., Jali, M.Z., Noor, M.N.M., Sulaiman, S., Harun, M.S., Mustafar, M.Z.I., 2021. Bibliometric Analysis of Literatures on Digital Banking and Financial Inclusion between 2014–2020. *Library Philosophy and Practice*, pp. 1–31.
- Baber, H., 2019. Relevance of e-SERVQUAL for determining the quality of FinTech services. *Int. J. Electron. Finance* 9 (4), 257–267.
- Baber, H., 2020a. Financial inclusion and FinTech: a comparative study of countries following Islamic finance and conventional finance. *Qual. Res. Financial Markets* 12 (1), 24–42.
- Baber, H., 2020b. FinTech, crowdfunding and customer retention in islamic banks. *Vision* 24 (3), 260–268.
- Baber, H., 2020c. Impact of FinTech on customer retention in Islamic banks of Malaysia. *Int. J. Bus. Syst. Res.* 14 (2), 217–227.
- Baber, H., 2021. Examining the intentions to use crowdfunding platform – an extended technology acceptance model. *Int. J. Serv. Econ. Manag.* 12 (2).

- Bahloul, S., Mroua, M., Naifar, N., Naifar, Nader., 2021. Are Islamic indexes, Bitcoin and gold, still “safe-haven” assets during the COVID-19 pandemic crisis? *Int. J. Islam. Middle E Finance Manag.*
- Baker, H.K., Kumar, S., Pattnaik, D., 2020. Twenty-five years of review of financial economics: a bibliometric overview. *Rev. Financ. Econ.* 38 (1), 3–23.
- Banna, H., Alam, M.R., Ahmad, R., Sari, N.M., 2020. Does financial inclusion drive the Islamic banking efficiency? A post-financial crisis analysis. *Singapore Econ. Rev.*
- Banna, H., Hassan, M.K., Ahmad, R., Alam, M.R., 2021. Islamic banking stability amidst the COVID-19 pandemic: the role of digital financial inclusion. *Int. J. Islam. Middle E Finance Manag.*
- Bariviera, A.F., 2017. The inefficiency of Bitcoin revisited: a dynamic approach. *Econ. Lett.* 161 (2017), 1–4.
- Baur, D.G., Hong, K.H., Lee, A.D., 2018. Bitcoin: medium of exchange or speculative assets? *J. Int. Financ. Mark. Inst. Money* 54, 177–189.
- Brekke, T., 2018. Halal money: financial inclusion and demand for Islamic banking in Norway. *Res. Polit.* 5 (1).
- Busari, S.A., Aminu, S.O., 2021. Application of blockchain information technology in Şukuk trade. *J. Islam. Account. Bus. Res.* ahead-of-p(ahead-of-print).
- Cheah, E.T., Fry, J., 2015. Speculative bubbles in Bitcoin markets? An empirical investigation into the fundamental value of Bitcoin. *Econ. Lett.* 130, 32–36.
- Chkili, W., Ben Rejeb, A., Arfaoui, M., 2021. Does bitcoin provide hedge to Islamic stock markets for pre- and during COVID-19 outbreak? A comparative analysis with gold. *Resour. Pol.* 74 (August), 102407.
- Chong, F.H.L., 2021. Enhancing trust through digital Islamic finance and blockchain technology. *Qual. Res. Financial Markets* 13 (3), 328–341.
- Consumer International, 2017. Annual Report of the Trustees and Financial Statements. <https://www.consumersinternational.org/media/155200/full-report-2017-final.pdf>.
- Darmansyah, D., Fianto, B.A., Hendratmi, A., Aziz, P.F., 2020. Factors determining behavioral intentions to use Islamic financial technology: three competing models. *J. Islam. Marketing.*
- Delle Foglie, A., Panetta, I.C., Boukrami, E., Vento, G., 2021. The impact of the Blockchain technology on the global Sukuk industry: smart contracts and asset tokenisation. *Technol. Anal. Strat. Manag.* 1–15.
- Demir, E., Gozgor, G., Lau, C.K.M., Vigne, S.A., 2018. Does economic policy uncertainty predict the Bitcoin returns? An empirical investigation. *Finance Res. Lett.* 26, 145–149.
- Donthu, N., Kumar, S., Pattnaik, D., Lim, W.M., 2021. A bibliometric retrospection of marketing from the lens of psychology: insights from Psychology & Marketing. *Psychol. Market.* 38 (5), 834–865.
- Echchabi, A., Omar, M.M.S., Ayedh, A.M., 2021. Factors influencing Bitcoin investment intention: the case of Oman. *Int. J. Internet Technol. Secur. Trans.* 11 (1), 1–15.
- Elsayed, A.H., Gozgor, G., Lau, C.K.M., 2020. Causality and dynamic spillovers among cryptocurrencies and currency markets. *Int. J. Finance Econ.* June, 1–15.
- Ezzahid, E., Elouaourt, Z., 2021. Financial inclusion, mobile banking, informal finance and financial exclusion: micro-level evidence from Morocco. *Int. J. Soc. Econ.* 48 (7), 1060–1086.
- Figuera, S., Tortorella Esposito, G., 2019. Ethics and the economy: food for thought from the medieval debate on money. *J. Econ. Issues* 53 (3), 703–725.
- Financial Stability Board, 2019. FSB Financial Statements. <https://www.fsb.org/wp-content/uploads/R240820.pdf>.

- Fogle, A.D., Panetta, I.C., 2020. Islamic stock market versus conventional: are islamic investing a 'Safe Haven' for investors? A systematic literature review. *Pac. Basin Finance J.*
- Guckenbiehl, P., Corral de Zubielqui, G., Lindsay, N., 2021. Knowledge and innovation in start-up ventures: a systematic literature review and research agenda. *Technol. Forecast. Soc. Change* 172, 121026.
- Haider, M., Khan, S., Rabbani, M.R., Thalassinou, 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. *Int. J. Econ. Bus. Adm.* 8 (2), 351–364.
- Hammad, F., 2018. Is bitcoin mining halal? Investigating the shariah compliance of bitcoin mining. 2018 International Conference on Innovation and Intelligence for Informatics. *Comput. Technol. 3ICT* (2018), 1–4.
- Hanif, M., 2020. Developing a fair currency system. *ISRA Int. J. Islam. Finance* 12 (3), 325–345.
- Hapsari, M.I., Bin Mohd Thas Thaker, M.A., Mohammed, M.O., Duasa, J., 2022. A qualitative investigation into crowdfunding framework as a source of financing for waqf land development. *J. Islam. Account. Bus. Res.* 13 (3), 425–443.
- Hasan, M.B., Hassan, M.K., Karim, Z.A., Rashid, M.M., 2021. Exploring the hedge and safe haven properties of cryptocurrency in policy uncertainty. *Finance Res. Lett.*, 102272
- Hassan, A., 2015. Financial inclusion of the poor: from microcredit to islamic microfinancial services. *Humanomics* 31 (3), 354–371.
- Hassan, M.K., Khan, A., Paltrinieri, A., 2019. Liquidity risk, credit risk and stability in Islamic and conventional banks. *Res. Int. Bus. Finance* 48 (November 2018), 17–31.
- Hassan, M.K., Aliyu, S., Saiti, B., Abdul Halim, Z., 2020a. A review of Islamic stock market, growth and real-estate finance literature. *Int. J. Emerg. Mark.*
- Hassan, M.K., Karim, M.S., Muneezac, A., 2020b. A conventional and Sharī'ah analysis of bitcoin. *Arab Law Q.* 35 (1–2), 155–189.
- Hassan, M.K., Rabbani, M.R., Asad, M., Ali, M., 2020c. Challenges for the Islamic Finance and banking in post COVID era and the role of Fintech. *J. Econ. Cooperat. Dev.* 41 (3), 93–116.
- Hendratmi, A., Ryandono, M.N.H., Sukmaningrum, P.S., 2020. Developing Islamic crowdfunding website platform for startup companies in Indonesia. *J. Islam. Marketing* 11 (5), 1041–1053.
- Hudaefi, F.A., 2020. How does Islamic fintech promote the SDGs? Qualitative evidence from Indonesia. *Qual. Res. Financial Markets* 12 (4), 353–366.
- Ishak, M.S.I., Kamaruddin, M.H., Aderemi, A.M.R., 2021. Mudharabah based crowdfunding as an alternative source of funding book publications in Malaysia. *J. Islam. Marketing.*
- Ishak, M.S.I., Rahman, M.H., 2021. Equity-based Islamic crowdfunding in Malaysia: a potential application for mudharabah. *Qual. Res. Financial Markets* 13 (2), 183–198.
- Islamic Finance Development Report, 2019. Shifting Islamic Finance Development, pp. 1–68.
- Jan, S., Khan, Z., Karimullah, 2018. Institutionalising justice in Islamic finance. *J. Islam. Econ. Banking and Finance* 14 (1), 205–216.
- Kannaiah, D., Maswood, Y., Choudary, Y.L., 2017. Growth of Islamic banking in India: discriminant analysis approach. *Banks Bank Syst.* 12 (4), 175–188.
- Katsiampa, P., 2017. Volatility estimation for Bitcoin: a comparison of GARCH models. *Econ. Lett.* 158, 3–6.
- Kazaure, M.A., Abdullah, A.R., Zawawi, D.B., Hamzah, A., 2021. Determinants of SMEs intention to adopt Islamic crowdfunding model in Northwestern Nigeria. *J. Islam. Account. Bus. Res.* 12 (2), 204–217.

- Khan, A., Rizvi, S.A.R., Ali, M., Haroon, O., 2020. A survey of Islamic finance research influences and influencers. *Pac. Basin Finance J.*, 101437
- Khan, N., Kchouri, B., Yattoo, N.A., Krčausl, Z., Patel, A., State, R., 2022. Tokenization of sukuk: ethereum case study. *Global Finance J.* 51.
- Khan, S., Sheikh, A.E., Abu Bakar, M., Abidullah, 2019. Zakat - financial inclusion nexus: empirical evidence from Pakistan. *Int. J. Innovat. Creativ. Change* 8 (9), 18–30.
- Khmous, D.F., Besim, M., 2020. Impact of Islamic banking share on financial inclusion: evidence from MENA. *Int. J. Islam. Middle E Finance Manag.* 13 (4), 655–673.
- Kim, D.W., Yu, J.S., Hassan, M.K., 2018. Financial inclusion and economic growth in OIC countries. *Res. Int. Bus. Finance* 43 (July 2017), 1–14.
- Kirchner, I.K.F., 2021. Are cryptocurrencies halāl? On the shariah-compliance of blockchain-based fintech. *Islam Law Soc.* 28 (1–2), 76–112.
- Lahmiri, S., Bekiros, S., 2019. Decomposing the persistence structure of Islamic and green crypto currencies with nonlinear stepwise filtering. *Chaos, Solit. Fractals* 127, 334–341.
- Lahmiri, S., Bekiros, S., Bezzina, F., 2020. Multi-fluctuation nonlinear patterns of European financial markets based on adaptive filtering with application to family business, green, Islamic, common stocks, and comparison with Bitcoin, NASDAQ, and VIX. *Phys. Stat. Mech. Appl.* 538, 122858.
- Laidroo, L., Koroleva, E., Kliber, A., Rupeika-Apoga, R., Grigaliuniene, Z., 2021. Business models of FinTechs – difference in similarity? *Electron. Commer. Res. Appl.* 46 (January), 101034.
- Lee, D.K.C., Teo, E.G.S., 2015. Emergence of fintech and the lasic principles. *SSRN Electron. J.*
- Lee, I., Shin, Y.J., 2018. Fintech: ecosystem, business models, investment decisions, and challenges. *Bus. Horiz.* 61 (1), 35–46.
- Li, B., Xu, Z., 2021. Insights into financial technology (FinTech): a bibliometric and visual study. *Financial Innovat.* 7 (1).
- Lietaer, B., 2017. Possibly Shariah-Compatible global currency to stabilize the monetary system. *J. King Abdulaziz Univ. - Islam. Econ.* 30 (2), 47–58.
- Liu, J., Li, X., Wang, S., 2020. What have we learnt from 10 years of fintech research? a scientometric analysis. *Technol. Forecast. Soc. Change* 155 (March), 120022.
- Lundberg, J., Fransson, A., Brommels, M., Skår, J., Lundkvist, I., 2006. Is it better or just the same? Article identification strategies impact bibliometric assessments. *Scientometrics* 66 (1), 183–197.
- Macchiavello, E., 2017. Microfinance and Financial Inclusion: the challenge of Regulating Alternative Forms of Finance. In: *Microfinance and Financial Inclusion: the Challenge of Regulating Alternative Forms of Finance.*
- Marzuki, M., Nurdin, N., 2020. The influence of halal product expectation, social environment, and fiqh knowledge on intention to use shariah financial technology products. *Int. J. Innovat., Creativ. Change* 13 (1), 171–193.
- Mensi, W., Ur Rehman, M., Maitra, D., Hamed Al-Yahyaee, K., Sensoy, A., 2020. Does bitcoin co-move and share risk with Sukuk and world and regional Islamic stock markets? Evidence using a time-frequency approach. *Res. Int. Bus. Finance* 53 (March), 101230.
- Mohamad, A., Sifat, I.M., 2017. Gold vis-à-vis money in Islam: the case against dinarist movement. *Int. J. Law Manag.* 59 (6), 977–992.
- Mohd Nor, S., Abdul-Majid, M., Esrati, S.N., 2021. The Role of Blockchain Technology in Enhancing Islamic Social Finance: the Case of Zakah Management in Malaysia, pp. 509–527. *Foresight, ahead-of-p*(ahead-of-print).

- Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., Altman, D., Antes, G., Atkins, D., Barbour, V., Barrowman, N., Berlin, J.A., Clark, J., Clarke, M., Cook, D., D'Amico, R., Deeks, J.J., Devereaux, P.J., Dickersin, K., Egger, M., Ernst, E., et al., 2009. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 6 (7).
- Mollick, E., 2014. The dynamics of crowdfunding: an exploratory study. *J. Bus. Ventur.* 29 (1), 1–16.
- Muhammad, R., Fakhrunnas, F., Hanun, A.K., 2021. The determinants of potential failure of Islamic peer-to-peer lending: perceptions of stakeholders in Indonesia. *J. Asian Finance, Econ. Bus.* 8 (2), 981–992.
- Muryanto, Y.T., Kharisma, D.B., Nugraheni, A.S.C., 2021. Prospects and Challenges of Islamic Fintech in Indonesia: a Legal Viewpoint.
- Nabi, G., Islam, A., Bakar, R., Nabi, R., 2017. Islamic microfinance as a tool of financial inclusion in Bangladesh. *J. Islam. Econ. Banking Finance* 13 (1), 24–51.
- Nadarajah, S., Chu, J., 2017. On the inefficiency of Bitcoin. *Econ. Lett.* 150 (August 2010), 6–9.
- Nakamoto, S., 2008. Bitcoin: A Peer-To-Peer Electronic Cash System. <https://bitcoin.org/bitcoin.pdf>.
- Narayan, P.K., Phan, D.H.B., 2019. A survey of Islamic banking and finance literature: issues, challenges and future directions. *Pac. Basin Finance J.* 53, 484–496.
- Nastiti, N.D., Kasri, R.A., 2019. The role of banking regulation in the development of Islamic banking financing in Indonesia. *Int. J. Islam. Middle E Finance Manag.* 12 (5), 643–662.
- Nawaz, T., 2017. Conventional vs. Islamic banks in dual-banking systems: business model, outlay stratagems and economic performance. *Int. J. Bus. Govern. Ethics* 12 (4), 330–348.
- Nugroho, B.A., 2021. Spillovers and bivariate portfolios of gold-backed cryptocurrencies and gold during the COVID-19 outbreak. *J. Islam. Account. Bus. Res.*
- Nurhasanah, Rahmatullah, I., 2020. The legal protection of shariah financial technology in Indonesia (Analysis of regulation, structure and law enforcement). *Int. J. Adv. Sci. Technol.* 29 (3), 3086–3097.
- Oberauer, N., 2018. Money in classical Islam: legal theory and economic practice. *Islam Law Soc.* 25 (4), 427–466.
- Oladapo, I.A., Hamoudah, M.M., Alam, M.M., Olaopa, O.R., Muda, R., 2021. Customers' perceptions of FinTech adaptability in the Islamic banking sector: comparative study on Malaysia and Saudi Arabia. *J. Model. Manag. ahead-of-p*(ahead-of-print).
- Ozиеv, G., Yandіe, M., 2018. Cryptocurrency from a shari'ah perspective. *Al-Shajarah* 23 (2), 315–337.
- Palmi'e, M., Wincent, J., Parida, V., Caglar, U., 2020. The evolution of the financial technology ecosystem: an introduction and agenda for future research on disruptive innovations in ecosystems. *Technol. Forecast. Soc. Change* 151 (November 2019), 119779.
- Paltrinieri, A., Hassan, M.K., Bahoo, S., Khan, A., 2020. A Bibliometric Review of Sukuk Literature. *International Review of Economics and Finance*, September 2018.
- Paul, J., Criado, A.R., 2020. The art of writing literature review: what do we know and what do we need to know? *Int. Bus. Rev.* 29 (4), 101717.
- Pg Md Salleh, A.M.H.A., 2015. Integrating financial inclusion and saving motives into institutional zakat practices: a case study on Brunei. *Int. J. Islam. Middle E Finance Manag.* 8 (2), 150–170.
- Rabbani, M.R., Ali, M.A.M., Rahiman, H.U., Atif, M., Zulfikar, Z., Naseem, Y., 2021a. The response of Islamic financial service to the Covid-19 pandemic: the open social innovation of the financial system. *J. Open Innovat.: Technol. Market Complex.* 7 (1).

- Rabbani, M.R., Bashar, A., Nawaz, N., Karim, S., Ali, M.A.M., Rahiman, H.U., Alam, M.S., 2021b. Exploring the role of islamic fintech in combating the aftershocks of Covid-19: the open social innovation of the islamic financial system. *J. Open Innovat.: Technol., Market, and Complex.* 7 (2).
- Rabbani, M.R., Khan, S., 2020. Agility and fintech is the future of islamic finance: a study from islamic banks in Bahrain. *Int. J. Sci. Technol. Res.* 9 (3), 6955–6957.
- Rabbani, M.R., Khan, S., Thalassinou, E.I., 2020. FinTech, blockchain and Islamic finance: an extensive literature review. *Int. J. Econ. Bus. Adm.* 8 (2), 65–86.
- Rahman, M.P., Mohd Thas Thaker, M.A., Duasa, J., 2020. Developing a Sharī‘ah-compliant equity-based crowdfunding framework for entrepreneurship development in Malaysia. *ISRA Int. J. Islam. Finance* 12 (2), 239–252.
- Razak, M.I.A., Dali, N.A.M., Dhillon, G., Manaf, A.W.A., 2020. Fintech in Malaysia: an appraisal to the need of shariah-compliant regulation. *Soc. Sci. Humanit.* 28 (4), 3223–3233.
- Rehman, M.U., Asghar, N., Kang, S.H., 2020. Do Islamic indices provide diversification to bitcoin? A time-varying copulas and value at risk application. *Pac. Basin Finance J.* 61 (April), 101326.
- Rosavina, M., Rahadi, R.A., Kitri, M.L., Nuraeni, S., Mayangsari, L., 2019. P2P lending adoption by SMEs in Indonesia. *Qual. Res. Financial Market.* 11 (2), 260–279.
- Sa’ad, A.A., Ahmad, K., Saleh, A.O.H., 2019. P2p Islamic Fintech Investment Innovation. A Proposal of MushArakah Smart Contract Model for SMEs Financing and Social Development. *Al-Shajarah*, pp. 169–184 (Special Issue Islamic Banking and Finance 2019).
- Sain, M.R.M., Rahman, M.M., Khanam, R., 2018. Financial exclusion and the role of islamic finance in Australia: a case study in Queensland. *Australas. Account. Bus. Finance J.* 12 (4), 43–59.
- Saiti, B., Afghan, M., Noordin, N.H., 2018a. Financing agricultural activities in Afghanistan: a proposed salam-based crowdfunding structure. *ISRA Int. J. Islam. Finance* 10 (1), 52–61.
- Saiti, B., Musito, M.H., Yucel, E., 2018b. Islamic crowdfunding: fundamentals, developments and challenges. *Islam Q.* 62 (3), 469–485.
- Saleh, A.H.A.I., Ibrahim, A.A., Noordin, M.F., Mohd Mohadis, H., 2020. Islamic approach toward purification of transaction with cryptocurrency. *J. Theor. Appl. Inf. Technol.* 98 (6), 1050–1067.
- Salim, M., Kassim, S., Thaker, M.A.M.T., 2021. Factors influencing the acceptance of islamic crowdfunding in Malaysia: a study of youth entrepreneurs. *Pakistan J. Commer. Soc. Sci.* 15 (3), 443–475.
- Sangwan, V., Harshita, Prakash P., Singh, S., 2020. Financial technology: a review of extant literature. *Stud. Econ. Finance* 37 (1), 71–88.
- Schwiebacher, A., Larralde, B., 2010. Crowdfunding of small entrepreneurial ventures. *SSRN Electron. J.* April.
- Selim, M., 2020. The effects of eliminating Riba in foreign currency transactions by introducing global FinTech network. *Int. J. Islam. Middle E Finance Manag.* 14 (3), 506–523.
- 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.
- Shaikh, S.A., 2021. Using fintech in scaling up islamic microfinance. *J. Islam. Account. Bus. Res.* 12 (2), 186–203.
- Shinkafi, A.A., Yahaya, S., Sani, T.A., 2020. Realising financial inclusion in Islamic finance. *J. Islam. Market.* 11 (1), 143–160.

- Shofiyyah, M., Aisyah, A.R., Shifa, M.N., 2019. Awareness and motivation in crowdfunding for Islamic banking and finance research. *Global J. Al-Thaqafah* 7–18.
- Siswanto, D., Handika, R., Mita, A.F., 2020. The requirements of cryptocurrency for money, an Islamic view. *Heliyon* 6 (1), e03235.
- Suryono, R.R., Budi, I., Purwandari, B., 2020. Challenges and trends of financial technology (Fintech): a systematic literature review. *Information* 11 (12), 1–20.
- Tajudin, M., Omar, R., Smedlund, A., Aziz, R.P., 2020. Financing with heart and intelligence: augmenting intimacy and sustainability through Islamic fintech. *Int. J. Adv. Sci. Technol.* 29 (9 Special Issue), 1638–1664.
- Thakor, A.V., 2020. Fintech and banking: what do we know? *J. Financ. Intermediation* 41. August 2019.
- Tiwari, A.K., Jana, R.K., Das, D., Roubaud, D., 2018. Informational efficiency of Bitcoin—an extension. *Econ. Lett.* 163, 106–109.
- Uddin, M.A., Ali, M.H., Masih, M., 2020. Bitcoin—a hype or digital gold? Global evidence. *Aust. Econ. Pap.* 59 (3), 215–231.
- Utami, A.F., Ekaputra, I.A., Japutra, A., 2021. Adoption of FinTech products: a systematic literature review. *J. Creativ. Commun.* 16 (3), 233–248.
- Van Eck, N.J., Waltman, L., 2014. Visualizing Bibliometric Networks. In: *Measuring Scholarly Impact*.
- Virgana, R.A.E., Saudi, M.H.M., Sinaga, O., 2019. Conceptual research: shariah-based cryptocurrency. *J. Adv. Res. Dyn. Control Syst.* 11 (3 Special Issue), 138–143.
- Wang, P., Li, X., Shen, D., Zhang, W., 2020. How does economic policy uncertainty affect the bitcoin market? *Res. Int. Bus. Finance* 53 (March), 101234.
- Wang, X., Sadiq, R., Khan, T.M., Wang, R., 2021. Industry 4.0 and intellectual capital in the age of FinTech. *Technol. Forecast. Soc. Change* 166 (February), 120598.
- World Bank, 2013. Crowdfunding’s potential for the developing world. In: *Finance and Private Sector Development Department*. <https://documents1.worldbank.org/curated/en/409841468327411701/pdf/840000WP0Box380crowdfunding0study00.pdf>.
- Zain, N.R.M., Mahadi, N.F., Noor, A.M., 2019. The Potential in Reviving Waqf through Crowdfunding Technology: the Case Study of Thailand. *Al-Shajarah*, 2019 (Special Issue Islamic Banking and Finance 2019), 89–106.
- Zauro, N.A., Saad, R.A.J., Sawandi, N., 2016. The moderating effects of financial inclusion on Qardhul Hassan financing acceptance in Nigeria: a proposed framework. *Int. J. Econ. Financ. Issues*.
- Zauro, N.A., Saad, R.A.J., Sawandi, N., 2020. Enhancing socio-economic justice and financial inclusion in Nigeria: the role of zakat, Sadaqah and Qardhul Hassan. *J. Islam. Account. Bus. Res.* 11 (3), 555–572.
- Ziegler, T., Shneor, R., Zhang, B.Z., 2020. The Global Status of the Crowdfunding Industry BT - *Advances in Crowdfunding: Research and Practice* (R. Shneor, L. Zhao, & B.-T. Flåten (eds.); pp. 43–61). Springer International Publishing.
- Zulkhibri, M., 2016. Financial inclusion, financial inclusion policy and Islamic finance. *Macrocon. Finance Emerg. Market Econ.* 9 (3), 303–320.