Islamic Fintech Research: Systematic Review Using Mainstream Databases

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| <i>JEL Classification:</i> F65 Z12 | Abstract The number of Islamic financial technology (fintech) study grows along with technological advancement and fintech itself. This study aims to review the studies on Islamic fintech published | | |
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| Received: 02 February 2022 | in the journals indexed by Scopus and Web of Science using a systematic literature review approach. As shown in the framework | | |
| Revised: 27 March 2022 | proposed in this study, we found five elements of the entire observed papers. The customer has been the most discussed | | |
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INTRODUCTION

Financial technology (fintech) is believed to had been existed in the past 150 years ago, and it was the new era of fintech that developed right after the financial crisis in 2008 (Arner et al., 2016). Fintech emerged since the incumbent financial services providers were deemed less adaptive in catering to the changing needs of the market, primarily the young customers. Besides, the advancement in financial products offering better convenience and massive use of mobile smartphones have made it even possible for fintech to flourish worldwide (Hornuf, 2016; Leong et al., 2017). Islamic fintech, the utilization of technology in solving financial needs or problems through Islamic rules or principles (sharia), is expected to boost digital transformation and create sustainability in Islamic finance (Awotunde et al., 2021). Many Islamic fintech startups were established in various countries as the market size of Islamic fintech keeps expanding, and its future is believed to be promising (Firmansyah & Anwar, 2019; Rusydiana, 2018).

Studies on Islamic fintech have grown in the past few years, discussing various themes, such as the determinants for adopting the services offered by Islamic fintech firms (Ali et al., 2018; Darmansyah et al., 2020), prospects and challenges of Islamic fintech firms (Firmansyah & Anwar, 2019) and the review on the Islamic fintech studies (Hasan et al., 2020; Rabbani et al., 2020). However, even though the studies tend to grow in number, as they can be accessed through various indexes such as Google Scholar, Web of Science, and Scopus, few of them focus on evaluating the current studies of Islamic fintech using two mainstream databases popular among researchers, namely, the Web of Science (WoS) and Scopus. Therefore, this present study aims to evaluate the research in Islamic fintech using those two indexes. To the best of our knowledge, this present study is among the first literature review research on Islamic financial technology using WoS and Scopus indexes, which are the primary databases for research in academia.

Understanding the Islamic fintech research indexed in these two databases will enhance our understanding of the current state of the art of Islamic fintech research globally because the high-quality papers in Islamic fintech study must have been published by outlets indexed by these two mainstream databases. The structured measures were undertaken in selecting the papers to be reviewed. We outlined the steps in this research in the Methods section (see Figure 1). This study adopts the steps of data collection and retrieval from the studies conducted previously (Akomea-Frimpong et al., 2021; Carolina Rezende de Carvalho Ferreira et al., 2016).

This study proposes a framework, which is one novelty of this study, to fully comprehend the current literature on Islamic fintech by referring to DinarStandard & Elipses (2021). This framework consolidates various elements in one framework, including consumer aspects, Islamic fintech services, the enabling technologies, its operations, and Ecosystem enablers. This framework is different from others that are more specific in investigating Islamic Fintech, for example, customer intentions to adopt Islamic Fintech (Ali et al., 2021), rationale and driving factors (Oseni et al., 2019), iFintech acceptance (Shaikh, 2021), or customer retention (Baber, 2020b). The comprehensive model from

DinarStandard & Elipses (2021) has an advantage in providing stakeholders a framework to understand Islamic fintech holistically, both technological and managerial side, as well as internal operations and external ecosystems. As for other models that are more specific in nature, it is rather challenging to provide an overall picture of Islamic Fintech. However, these specific models have advantages in terms of testing and deeper analysis of the aspects analyzed.

This present study is outlined in the following order. This section is the introduction, where we present the study's background, purpose, and research gap. The following section discusses the methods and data collection, followed by results and discussion, and conclusion sections.

METHODS

This study employs a literature review analysis using two mainstream databases, namely, Scopus and Web of Science (WoS). The literature review technique is commonly used to investigate recent trends, such as the Covid-19 case (Irawan & Alamsyah, 2021) and crypto currencies (Rejeb et al., 2021). This present research aims to review the current literature on Islamic financial technology published in various journals. Since Islamic financial technology itself is relatively new, the papers on Islamic financial technology are primarily published in the last few years, from 2018 to 2021. The data collection and retrieval mechanisms conducted in this study are as follows.

We first searched literature from Scopus using the terms "Islamic financial technology" and "Islamic fintech." The search was conducted on February 2nd, 2021, with some exclusions of conference proceedings, editorial notes, non-English documents, and reports, thus resulting in 117 journal articles from Scopus and 87 articles from WoS. Those articles are both in open access and non-open access categories. This study only employs journal articles since they are the ones with the highest academic rank in terms of the scientific outcome of researchers. Therefore, we expect to produce the most relevant and current portrayal of Islamic fintech literature. For WoS, we conducted further filtering since we still found books (B) and book chapters (S) categorized as articles. Thus, we finally obtained 78 journal articles (J) from WoS. Thus, we had 195 research papers in total to be processed.

Furthermore, since there is duplicity, meaning that both WoS and Scopus can index a paper, so we merged the two databases. We only selected the same papers from either WoS or Scopus database. This process resulted in 150 journal articles. In this stage, we used several Scopus fields as the basis for data collection. We also filled in the blank in WoS, such as publication year information. To do this, we looked for them manually from the publisher websites. While filtering for a duplicate in Microsoft Excel, we omitted 45 articles, leaving 150 journal articles out of 195 papers from Scopus and WoS databases. Of those 150 journal articles, we still saw the non-journal articles categorized as journal articles. So, we removed them, leaving out 145 journal articles.

We further read the title, abstract, and keywords of those 145 journal articles to

check those papers' relevance to our research purposes. The considerations or criteria that we used are as follows. First, the articles explicitly state any of the following words: "Islamic fintech," "Islamic financial technology," and "Islamic crowdfunding" in their title, keywords, and or abstract fields. Second, the grey articles and articles from non-business and management journals were excluded. In this step, we still saw the items determined as journal articles; they are the book. So, we omitted them as well. Third, if the words such as "Islam" and "technology," appeared in the article's title and keywords, we further read the abstracts to ensure that the articles outside the Islamic fintech topics were excluded.

Those three steps resulted in 21 journal articles from WoS and Scopus, selected for the analysis and review. We conducted a content analysis to gain insight and produce the results. The steps undertaken in resulting in the 21 journal articles are shown in Figure 1.

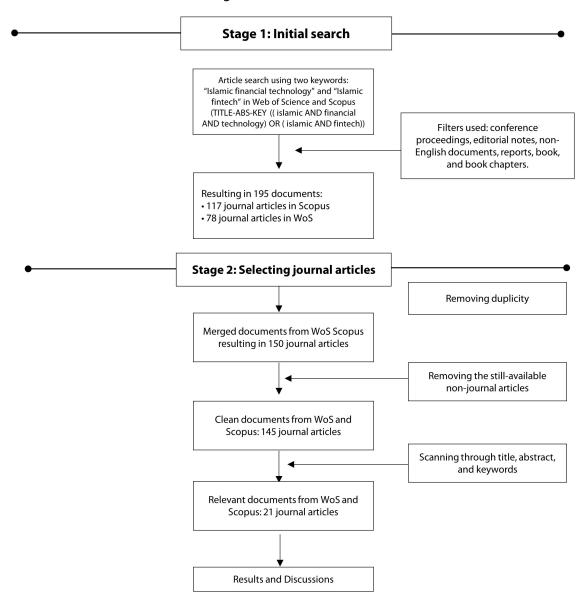


Figure 1. Research Process

RESULTS AND DISCUSSION

The first result of this study is the attributes of the selected papers, consisting of the publication years, the publication journals, publication contexts, and publication methods. Understanding these attributes will provide insight into the characteristics of Islamic fintech research authored by Islamic fintech scholars published in various outlets. The followings are the results of each attribute.

Compared to other Islamic finance topics, such as Islamic banking, which is the core of the advancement of Islamic finance (Ghlamallah et al., 2021), the research in Islamic financial technology is somewhat newer. Therefore, the studies in Islamic fintech have only appeared within the last few years. In this study, we evaluated 21 final journal articles published between 2018 and 2021 by various publishers in several countries. We found that most of the papers (62 percent or 13 papers) were published in 2020, followed by 2019 with 24 percent (five papers). Since we conducted the research in early 2021, we only employed two papers published in 2021. Figure 2 summarizes the results of our findings regarding years of publication.

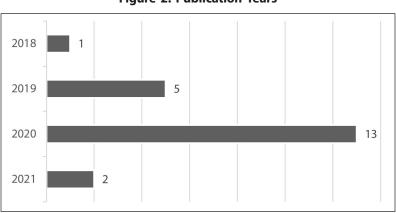


Figure 2. Publication Years

Of the 21 selected papers investigated in this study, it can be revealed that most of the papers (three papers) were published by the Journal of Islamic Marketing (JIM), followed by the Journal of Islamic Accounting and Business Research (JIABR) and Qualitative Research in Financial Markets (QRFM) with two papers each. Other journals only contributed to one paper, as shown in Table 1. The first two journals standing at the top (JIM and JIABR) are specific journals in the Islamic business field. Thus, they are considered appropriate to be the publication slot of Islamic fintech scholars. In addition to the number, we can note that the fields of the journal are pretty diverse, such as business, information and technology, social, and Islamic finance journals. We also observed that none of the journals in the table is too dominant as there are 17 journals.

The research context is diverse, covering more than ten countries, most of which are on the Asian continent (Table 3). The most studied context was Indonesia (7 studies), followed by Malaysia (6 studies), then Saudi Arabia and Pakistan (two each). Meanwhile, there are also studies that do not have a particular context (5 studies) which are theoretical or conceptual studies.

| No. | Journal | Frequency |
|-----|--|-----------|
| 1 | Journal of Islamic Marketing | 3 |
| 2 | Journal of Islamic Accounting and Business Research | 2 |
| 3 | Qualitative Research in Financial Markets | 2 |
| 4 | 3C TIC: Cuadernos de desarrollo aplicados a las TIC | 1 |
| 5 | Al-Shajarah | 1 |
| 6 | Foresight | 1 |
| 7 | GEOGRAFIA Malaysian Journal of Society and Space | 1 |
| 8 | International Journal of Advanced Computer Science and Applications | 1 |
| 9 | International Journal of Business and Systems Research | 1 |
| 10 | International Journal of Advanced Science and Technology | 1 |
| 11 | International Journal of Innovation, Creativity and Change | 1 |
| 12 | International Journal of Innovative Technology and Exploring Engineering | 1 |
| 13 | International Journal of Islamic and Middle Eastern Finance and Management | 1 |
| 14 | Islāmiyyāt | 1 |
| 15 | Opcion | 1 |
| 16 | Pertanika Journal of Social Sciences and Humanities | 1 |
| 17 | Vision | 1 |
| | Total | 21 |

| Table | 1. | Publication | Journals |
|-------|----|-------------|----------|
|-------|----|-------------|----------|

Indonesia and Malaysia are interesting contexts to study because these two allied countries have unique characteristics in the perspective of Islamic fintech. Indonesia is a country with the largest Muslim population globally, which represents a sizeable Islamic fintech market potential. Malaysia has long been known as a hub for Islamic finance, so it has historically had a strong base for the development of Islamic fintech.

| Table 2. Publication Context | | | | |
|---|-----------|--|--|--|
| Country | Frequency | | | |
| Indonesia | 7 | | | |
| Malaysia | 6 | | | |
| Saudi Arabia | 2 | | | |
| Pakistan | 2 | | | |
| UEA, Iran, Kuwait, Bahrain, Bangladesh, Turkey, Jordan, Nigeria, Finland | 1 (each) | | | |
| Not specified | 5 | | | |

Table 2. Publication Context

Some studies are single focus contexts (12 studies), while some are multiple or mixed contexts (3 studies). The multiple contexts with the most coverage are the comparison of 10 contexts from Baber (2020a) using data from the Global Islamic Finance Report and the World Bank. Studies with multiple contexts allow comparisons to be made from one context to another.

The most used methods are quantitative and theoretical/conceptual (each consisting of

8 studies), followed by mixed methods (3 studies) and qualitative (2 studies). Quantitative studies are generally used to determine the factors that influence consumers to use Islamic fintech services (Darmansyah et al., 2020; Kazaure et al., 2020) or to investigate the relationship between relevant variables, for example, between the use of Islamic fintech and customer retention (Baber, 2020c).

Theoretical or conceptual studies, for example, explore the behavior of crowd funders with specific trust criteria (Nor & Hashim, 2020) or analysis of Sharia-compliant regulations to govern Islamic fintech (Razak et al., 2021). A mixed-method study, for example, was conducted by Bulatova et al. (2019), analyzing numerical data statistically and combined with insights from the literature. For qualitative studies, the method used is a case study (Abdeen et al., 2019) or interview/focus group discussion (Hendratmi et al., 2019). Figure 3 illustrates our findings regarding the publication methods of the 21 papers being studied.

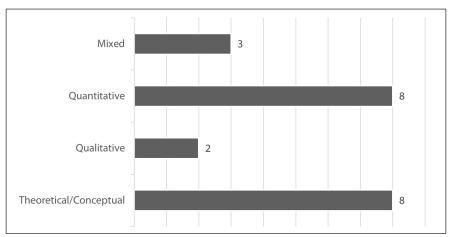


Figure 3. The Method Used in the Reviewed Studies

The second result of this paper is elements for Islamic fintech papers published in the outlets indexed in WoS and Scopus. In order to gain some insights from the Islamic fintech studies totaling 21 papers, we attempt to group all of those papers into five elements. This categorization is partly in line with the segmentation of financial services and the landscape of fintech, as proposed by Alam et al. (2019).

Element 1: Customers

Based on our observation, most Islamic fintech studies take the element of customers (48 percent or ten papers). This dominant result element aligns with the number of Islamic fintech startups where most of them deal with customer or peer-to-peer financing and others, such as zakat management and deposit and transfer (Alam et al., 2019). The intention to use Islamic fintech products is the most researched topic in the papers we are investigating (Ali et al., 2018; Baber, 2020b; Darmansyah et al., 2020; Kazaure et al., 2021; I. M. Shaikh et al., 2020). Some research papers focus on the intention to use Islamic fintech products by individual customers, while some focus on business entities such as small and medium enterprises (SMEs).

To understand product adoption by Islamic fintech customers, many researchers utilized popular models, namely, the theory of planned behavior (TPB), the technology acceptance model (TAM), and the unified theory of acceptance and use of technology (UTAUT). Understanding the factors that are considered by customers in selecting Islamic fintech products will provide a guideline for policy-making bodies for developing Islamic fintech and boosting financial inclusion, which is the core of the fintech itself.

Element 2: Services

The second element of the Islamic fintech articles investigated in this study deals with the services provided by Islamic fintech companies. Four papers, or 19 percent, were found in this category. Hudaefi (2020) found that the services of Islamic fintech firms have been in line with the sustainable development goals (SDGs). For instance, Islamic fintech companies have assisted SMEs and less-developed agricultural sectors in obtaining funding for their operations. In his study, the selected firms have been promoting the SDG of ending poverty (SDG 1) and hunger (SDG 2) and reducing inequalities (SDG 10).

Sa'ad et al. (2019), in their paper, attempted to develop new peer-to-peer financing underlain by the *Mushārakah* Smart Contract Model. They argued that this *Mushārakah* contract in the peer-to-peer agreement would become more practical for investors and entrepreneurs because the service is transparent, fast, and less complicated in terms of paper works.

Element 3: Technology

The third element we found in our analysis focuses on technology that becomes the foundation of Islamic fintech itself. Using the case study in the Kingdom of Saudi Arabia, Abdeen et al. (2019) attempted to produce a framework for implementing blockchain technology in a *takaful* scheme following Islamic principles. They argued that the framework for developing takaful insurance using blockchain technology is a feasible and more appropriate solution because it provides transparency to the parties involved in *takaful* transactions.

Another framework from a slightly different angle, namely, Islamic crowdfunding using a website platform for startup firms, was proposed by Hendratmi et al. (2019). By performing focus group discussion (FGD) with 16 startup CEOs and interviews with two crowdfunding providers, *fiqh* expert and a technology expert, they maintained that the Islamic crowdfunding model based on a website platform plays a significant role in the innovative acceleration for providing alternative funding for startup companies, primarily in East Java – Indonesia.

Element 4: Regulations

Regulation is an element that in previously published works was included in ecosystem enablers (DinarStandard & Elipses, 2021). A study on regulation, for example, was conducted by Imaniyati et al. (2019), who analyzed the contracts used in Islamic fintech. Another study concerns the need for sharia-compliant regulation to regulate

Islamic fintech because existing regulations are considered inadequate to regulate the Islamic fintech industry (Razak et al., 2020).

An interesting study was conducted by Selim (2020), who investigated the possibility of a global network system to eliminate *riba* in foreign currency. By using mathematical modeling based on economic and international trade using aggregate expenditure and aggregate output, models are developed that allow us to eliminate *riba* from the difference in rates between buying and selling in different currencies. Studies related to regulation are necessary because regulation is a crucial ecosystem enabler for developing Islamic fintech.

Element 5: Performances

Studies on performance are still rarely found in models of Islamic fintech in previous publications. There are two studies in this review that examine performance. The first study is from Baber (2020a), which compares performance at the country level using a different test to identify the difference between countries with Islamic and conventional financial systems.

The second study was conducted by Bulatova et al. (2019), which examines the effect of multiple independent variables on the performance of Islamic fintech. The independent variables include total investment activity in the form of capital invested and deal count, global venture capital activity in the form of capital invested and deal count, and global private investment in blockchain & crypto currency, both capitals invested and deal count (Bulatova et al., 2019). As with other research areas in economics and business, the study of future performance is likely to be an element that obtains great attention as more data becomes available.

The objective of the present study is to evaluate the current studies of Islamic fintech in the academic literature. In addition to the paper attributes outlined earlier, this research results reveal that most Islamic fintech studies focus on the customer element; nearly half of studies focus on the intention to use both for individual or business customers. It is in line with the result in Table 2, where the journal publishing the most documents investigated in this study is the Journal of Islamic Marketing. The next element that received considerable attention is Islamic fintech services related to contracts or schemes offered to customers. Other elements found in the literature are regulation, performance, and technology.

The dominant Islamic fintech studies on the customer is probably because Islamic fintech is still in the infant development stage, which may possess limitations as in any Islamic-based developments, such as the measurement of Islamic banking performance (Setiawan et al., 2020). Thus, the focus of many researchers is on the customer side, which seems to be more feasible to be explored and investigated. It is not the case for Islamic banking, where the industry has been more mature, and the research on this topic has been conducted more extensively and more advanced in terms of research focus. For instance, the research in Islamic banking has more focus beyond the customer, including Islamic banking efficiency, Islamic bank profitability, and performance comparison with the conventional counterpart (Ghlamallah et al., 2021).

As mentioned in the literature review, most of the elements found in the present study have been discussed in previous models regarding Islamic fintech. This study confirms the model from the grey literature of DinarStandard & Elipses (2021), although some parts are not fully aligned. One interesting finding is that no element of Islamic fintech operations is found in the present study, and there is a lack of discussion about the Islamic fintech ecosystem. This finding is somewhat surprising because the operation is one of the cores of the business that should receive immediate attention from practitioners and researchers (Heizer et al., 2017).

The operations element, for example, is about the role of the back office and middle office in Islamic fintech, as well as how business intelligence is used to develop Islamic fintech (DinarStandard & Elipses, 2021). This area is missing because Islamic fintech is still in its early development, so Islamic finance researchers focus on more fundamental things such as customers, business models, and technology. Therefore, the operations element is a very open area for future research because this element is less researched and important for Islamic fintech to operate efficiently and reliably.

In addition, it seems that there is also a need for increased attention to the ecosystem because it is an essential enabler for the growth of Islamic fintech. The research on the Islamic fintech ecosystem has not been widely discussed in the literature. Islamic fintech ecosystem covering topics such as regulations from policymakers can ensure fintech operations comply with Islamic provisions and do not harm the parties involved. The ecosystem can also discuss supporting institutions, including technology firms and educational institutions that can contribute to Islamic fintech development in the future.

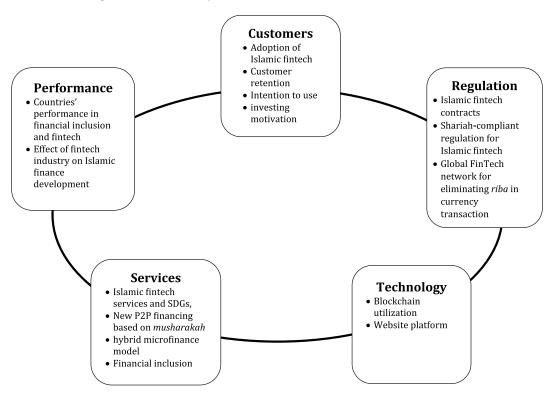


Figure 4. The Conceptual Framework of Islamic Fintech Studies

To the best of our investigation, our findings have not previously been described or explored by former researchers of Islamic fintech. Therefore, this study is unique by investigating a specific aspect of Islamic finance, namely Islamic fintech studies in the two world's most well known scientific databases for academia. Therefore, based on the findings of our study, we propose the following conceptual framework, as shown in Figure 4, regarding the studies of Islamic fintech consisting of the five elements and their sub-elements. This conceptual framework is the novelty of this study that may enhance our understanding of the current state of the art of Islamic fintech studies indexed by the journals published in two reputable indexing bodies.

CONCLUSION

This research aims to produce the landscape of Islamic fintech research in two databases, namely Web of Science and Scopus. We conducted a systematic literature review on the 21 journal articles indexed in those two databases. Our finding shows five identified elements, i.e., customers, services, regulation, performances, and technology. Among those five elements, the element of the customer is the one researched the most by researchers of Islamic finance. It is due to Islamic fintech research is still in the infant stage, at least when this present paper is composed. The research contributes to the Islamic fintech literature by providing an up-to-date review and is among the first reviews on this subject using the major academic databases (Scopus and WoS), offering a more holistic framework than previous studies.

This research is not free from limitations. First, it is limited to using two indexes, namely Web of Science and Scopus. Thus, the results obtained in our study might not represent the whole phenomenon of Islamic fintech research. It implies that further studies may be conducted by utilizing other databases, such as Google Scholar or DOAJ, which are also well known among researchers. Second, we do not limit the country or regions and do not make any segregation or categorization based on region. Thus, the results might be too general if one pursues more specific results, such as country results.

Further studies may limit the research results by the specific region. Further works could also discuss topics still missing in the literature, such as operations management or the roles and relationships of various components in the Islamic fintech ecosystem. Discussion of these topics is needed and would be an essential contribution to the literature and the development of Islamic fintech practices.

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