

# Islamic Fintech Ecosystem Development in Pakistan: A Meta Analysis

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## Abstract

*In this era of rapid technological advancement, from blockchain to AI, the financial services industry is undergoing profound change. The concept of "Islamic finance" follows suit, and a growing number of Shariah-compliant financial technology companies are springing up across the globe. The financial technology sector is transforming the global financial services market. Fintech companies are making it possible for traditional financial institutions to serve their consumers in unique ways, which subsequently enables these organizations to offer services of more excellent quality at cheaper costs. The purpose of this research is to look at the crucial parts of the Islamic FinTech ecosystem. This study employs text analytics techniques to examine the progress and growth of the Islamic fintech ecosystem in Pakistan. By analyzing relevant textual data, including scholarly articles, reports, and industry publications, the study aims to provide insights into the current state of Islamic fintech in Pakistan, identify key trends and challenges, and offer recommendations for further development. This study integrates the application of data analytics in text mining with the qualitative investigation of human intelligence through a two-step process and Bibliometric analysis using the Scopus database. This study presents the latest information on the present state of Islamic finance technology, especially focused on Pakistan. Based on the findings of the Global Islamic Fintech Index (GIFT), Pakistan occupies the ninth position among a total of 64 countries. It is anticipated that the market size of Pakistan's Islamic fintech sector will reach \$2.8 billion by the year 2025. The study findings can guide training and educational institutions related to Islamic finance technology. To provide recommendations in the upcoming period of this particular field, the paper offers an outline of the distinctive environment of Islamic Financial technologies and the challenges encountered. The discipline of Islamic finance technology is a developing field and, therefore, requires greater awareness globally.*

**Keywords:** Data Analytics, Fintech Ecosystem, Islamic Fintech, Bibliometric Analysis.

## Introduction

Islamic financial technology (FinTech) is a unique idea that combines the principles of the Islamic financial technology ecosystem with modern technology, providing an innovative approach to promoting financial literacy in developing countries. There is a growing debate about financial technology (Fintech) within the academic community, industry experts, and regulatory bodies on a worldwide level. The efficiency of financial services has been influenced by several

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technological advances in the field of financial technology (Fintech), including the utilization of blockchain, mobile payments, smart contracts, and robo-advisory (Firmansyah et al., 2022; Nguyen et al., 2021).

The emergence of financial technology (Fintech) has presented substantial opportunities for the worldwide Islamic financial technology ecosystem industry, as well as for advancing financial inclusivity in developing economies such as Pakistan (Hudaefi, 2020). Pakistan's advantageous location within the global Islamic fintech market necessitates an examination of its existing Islamic fintech ecosystem. The examination of this topic is crucial from a theoretical standpoint in order to comprehend significant inquiries that require academic investigation.

Fintech possesses the capacity to facilitate financial inclusion by means of secure digital payment systems, financing options, Insure Tech services, and investment opportunities such as crowdfunding and peer-to-peer lending. These methods can effectively respond to the needs of neglected startups, enterprises, and particular portions of the population. Fintech leverages cutting-edge technology, including cloud computing, big data analytics, blockchain, the Internet of Things, and artificial intelligence, to deliver financial services and solutions that prioritize enhanced security, instant accessibility, user-friendliness, affordability, and, ultimately, a customer-centric approach. In order to enhance Islamic financial inclusion, Fintech needs to incorporate Shariah-compliant features inside its applications (Ali & Abdullah, 2020). The available empirical evidence indicates that Pakistan exhibits a significant degree of financial exclusivity. This report is a comprehensive examination of the current state of digital finances and the inclusion of finances in Pakistan. It consists of an analysis of the information and communication technologies (ICT) landscape and evaluates Pakistan's accomplishments in this domain. This research aims to inspect the possibilities of financial technology ecosystem applications. It suggests a practical approach to establishing a financial technology ecosystem that effectively promotes financial inclusion in Pakistan.

The field of financial technology, commonly referred to as Fintech, has experienced significant growth and expansion on a global scale, culminating in its peak in recent times. The trend in inquiry must be addressed by students in the Islamic banking and finance profession, requiring their awareness of this growing and innovative sector (Ali et al., 2018). Since Islamic FinTech meets the fundamental Shariah objectives for financial transactions, analyzing the dynamics of this emerging industry is of paramount importance (Thakor, 2020).

As a result of advancements in Fintech, commercial banks have seen increased profits, innovations, and better risk management (Wang, 2021). A comprehensive assessment of existing literature on Islamic Fintech can provide researchers with valuable insights into the future trajectory of its development (Unal, 2021).

Financial technology innovations and their implementations in Islamic banking examine the distinct research conducted on the effects and execution of financial technology (Fintech) inside Pakistan's Islamic banking sector. The research analyzed the annual outlines of Islamic Banks to collect data, employing advanced estimate techniques. The results indicate that Pakistani Islamic banks have substantially adopted Fintech advancements from 2006 to 2020. These advancements encompass various technologies such as digital wallets, biometrics, and smart contracts. In addition, banks are currently witnessing the emergence of fintech trends encompassing distributed databases and machine learning technologies. The findings hold significance for regulatory entities, Islamic financial institutions, and policymakers, underscoring the necessity of incorporating financial innovations inside their respective organizations (Karim et al., 2022).

Fintech has led to a lot of new financial services around the world in the past few years. This is the start of the fourth industrial revolution. As an initiator, the COVID-19 pandemic led to amazing new ideas in the global financial sector. Younger, technologically proficient individuals are leading this change, and it has made companies respond. Over 15,000 startups were working in this area by 2020, and they were involved in over \$6.308 billion worth of Fintech-based deals around the world. Notably, the Islamic financial technology ecosystem sector has also grown very quickly, in part because more money is being put into Fintech-driven financial services. Blockchain technology and crowdfunding stand out as two areas of Islamic banking that are growing very quickly. This review of the literature gives a more in-depth look at Islamic Fintech, specifically how blockchain and crowdfunding are used in Islamic banking right now. It also lists possible chances for Islamic financial organizations and gives them a compact plan for how to take advantage of these changes (Hassan et al., 2022).

The rise of Fintech is causing big changes in the world of Islamic banking in Pakistan. Not only is Fintech changing how people use financial services, but it is also changing how established financial institutions provide those services. Also, governing bodies need help keeping an eye on new technologies. Large, well-known financial institutions seem ready for this change. However, Islamic financial institutions, which tend to be smaller and focus on local business, are finding Fintech to be a new challenge.

Many articles and books have been written about how Fintech has affected Islamic banks, but only a few have been written about Islamic financial institutions in general. In order to fill this gap, this study looks at how Islamic banks and other similar organizations are handling the world of Fintech (Abdeljawad et al., 2022).

The International Monetary Fund (IMF) discusses 12 key points, and the Bali Fintech Agenda Paper issued in 2018 by the World Bank to subsidize Fintech ecosystems suggests that countries should accept FinTech's sayings. The paper specified the main role countries have to play in enhancing financial inclusion. The 12 elements are below:

**Figure 1: Key points of Fintech agenda**



<sup>10</sup> <https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/10/11/pp101118-bali-fintech-agenda>

It is too imprecise to what extent Pakistan's Islamic financial technologies ecosystem has been investigated in educational works that could provide pertinent responses to these queries. This work provides valuable contributions to both the academic community and industry personnel. The establishment of the chief element of the Islamic financial technologies ecosystem, as theoretically proposed in this work, has the potential to provide novel insights into the existing body of literature on Islamic finance. Furthermore, conducting an inquiry into the development of Fintech in Pakistan could prove beneficial for individuals involved in the country's financial technology sector. This endeavor would provide them with valuable insights into the advancements made and challenges faced in the ecosystem's development inside the nation. This study examines Islamic fintech ecosystem evolution in Pakistan by conducting bibliometric Analysis regarding Islamic Financial Technologies research.

## **Literature Review**

### **Financial Technology**

The terminology "FinTech" is a combination of the words "finance" and "technology" to ascertain the incorporation of innovative technologies, namely those associated with the internet, such as cloud computing and mobile internet, into conventional financial services like lending and banking. FinTech generally pertains to innovative companies operating within the financial industry that utilize the extensive connectivity of the internet and automated data processing. These organizations are introducing innovative business models that promise enhanced security, adaptability, efficiency, and prospects compared to traditional finance services. The emergence of financial technology is becoming increasingly significant in the financial sector of Pakistan (Lee, 2015).

### **Islamic Fintech (I-Fintech)**

In the field of finance, Islamic Fintech arises as a distinctive classification driven by the basic principles of Islamic Shariah law. Islamic and conventional banks in Pakistan actively offer financial services that align with ethical standards, serving many different customers. The mentioned approach is experiencing increasing momentum on a global level, as evidenced by the commitment of significant financial resources by governmental entities such as Dubai's DIFC and Bahrain's regulatory sandbox to encourage the development of Fintech. Additionally, private projects exist, such as the partnership between Al Barakah Bank in Turkey and Singapore, which are committed to fostering and strengthening the Islamic Fintech ecosystem. These collective endeavors contribute to the advancement and progress of Islamic Fintech, also referred to as Fintech, by aligning financial services with the values and principles of Islamic finance (Tarique & Ahmed, 2019). The utilization of technology in Islamic Fintech, aimed at resolving financial matters in compliance with Islamic law (sharia), is expected to expedite digital transformation and promote continuous reliability within the Islamic finance industry (Awotunde, 2021).

### **Ecosystem Growth**

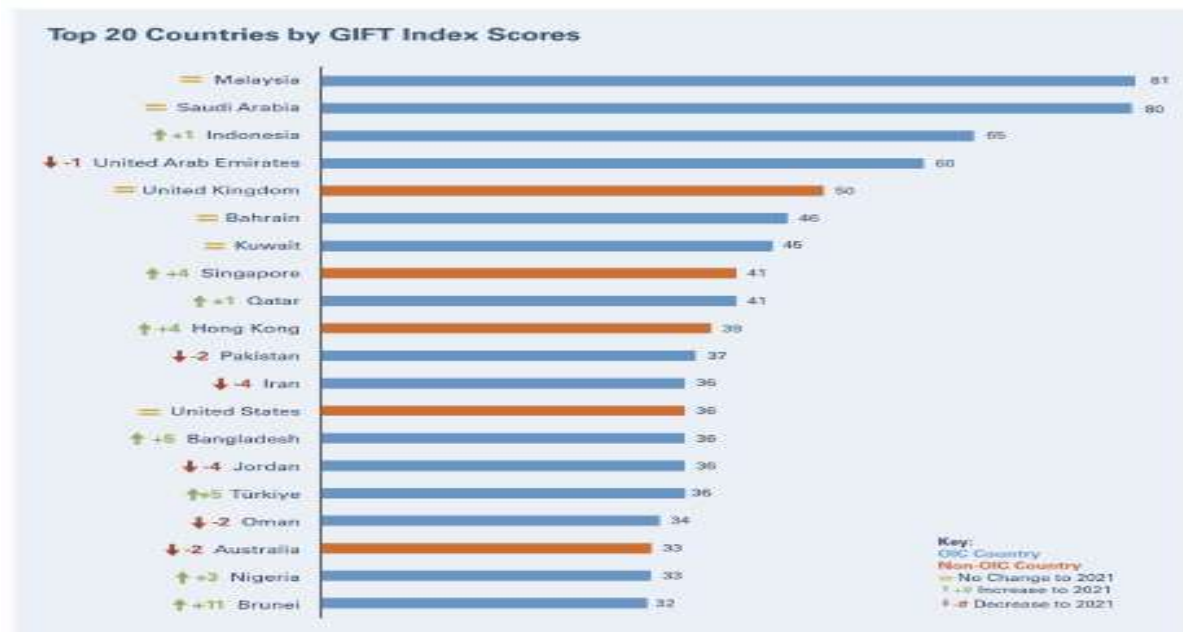
The Islamic Finance Development Indicator (IFDI) is affected by the asset growth of Sukuk, Islamic Funds, Other Islamic Financial Institutions, and Takaful. Governance, Sustainability, Knowledge, and Awareness are included in the IFDI to provide a complete industry indicator. Malaysia excels everywhere except one.

This year, the IFDI incorporated the FinTech Sandbox statistic into the Governance indicator, aligning with the ongoing advancements in the field. Regulations play a crucial role in governing

Islamic finance, with particular emphasis on Islamic banking, which receives extensive coverage. Shariah Governance is widely regarded as a prominent aspect of regulatory frameworks, ranking second in strength only to Regulations. This is mostly due to the presence of centralized Shariah boards in numerous countries, as well as the representation of Islamic financial institutions by Shariah experts. The Sustainability indicator of the IFDI takes into account the allocation of CSR money and the implementation of environmental, social, and governance (ESG) practices across various industries and asset classes within Islamic finance. This particular metric serves as a significant gauge to monitor the ongoing enhancement of environmental, social, and governance (ESG) practices inside the global financial sector. Saudi Arabia, Jordan, Singapore, South Africa, and Malaysia are among the leading Islamic financial countries. Within the broader context of sustainability, significant Islamic finance markets are actively strengthening their standards and regulations. In October 2021, significant attention was directed towards the newly introduced environmental, social, and governance disclosure standards for Saudi Arabia's stock exchange, encompassing a comprehensive group of over 200 firms. Indonesia surpasses Malaysia in the Knowledge index, securing the top position due to its extensive endeavours in the domains of Education and Research.

### **Global Perspective of Islamic Fintech (I-Fintech)**

The global Islamic Fintech sector is predicted to expand 18% yearly to \$179 billion by 2026 from \$79 billion in transaction volume (2021). Islamic Fintech transactions are highest in Saudi Arabia, Iran, Malaysia, UAE, Turkey, and Indonesia. The top 6 markets make up 81% of the OIC Islamic Fintech market, showing two regional centers for the sector. The GIFT index examined the favorable conditions of 64 country regions for Islamic Fintech, highlighting Malaysia and Saudi Arabia as notable regimes. Additionally, Indonesia, the UAE, and the UK were identified as the top five countries in this regard. The GIFT index utilized a comprehensive set of 19 variables, spanning across five distinct categories, to assess the performance of all 64 countries. The five categories encompassed in this framework are as follows: Infrastructure, Regulation, Talent, Ecosystem, Islamic Financial technologies Market & Capital. The areas are assigned weights to calculate a comprehensive count, with a greater emphasis placed on the Islamic Fintech Market & Ecosystem categories. This is because these categories provide the most significant insights into a country's level of support for Islamic Fintech (Reem, 2023).

**Figure 2: Countries by GIFT index score**

Source: GIFT Report – GIFT Index 2022

There are several important factors to consider when looking at the growth of Islamic financial technology (i-fintech) in Pakistan. These reasons include the strengths of traditional Islamic banks, the progress made in computer and information technology, the changing nature of business, the popularity and reach of Islamic finance, and the moral side of financial services. All of these factors affect how the I-fintech environment in the country changes. The IFN study published in 2022 emphasized the dynamic nature of Fintech companies and their contribution to the global environment. It also highlighted the rise of the Islamic Digital Economy, as depicted. Examining Islamic Fintech's role has attracted significant interest from both the academic and industrial sectors. It is worth noting that the research conducted by Oseni and Nazim (2019) indicates that the advances made by academia in this particular field are less advanced than the advancements observed in industry. The 2018 IFN study states that in order to be recognized as Islamic Fintech enterprises, Fintech firms must satisfy three essential criteria. Initially, it is recommended that they provide financial services using internet platforms or mobile applications.

Additionally, it is imperative that their financial services strictly conform to the norms of Islamic Shariah. Finally, these organizations must have well-established businesses or are actively engaged in the development of a minimum viable product (MVP) (Hakro et al., 2022).

### Fintech in Pakistan

Pakistan is experiencing a gradual expansion in financial technology, also referred to as Fintech, as it adopts and incorporates various technical innovations. The introduction of debit cards, automated teller machines (ATMs), and credit cards into the domain of commercial banking underscores the dynamic character of financial services in reaction to technological advancements. According to the findings of Rizvi et al. (2018), Pakistan has experienced a notable technological revolution, resulting in the emergence of sophisticated financial solutions. The use of this technical advancement has greatly improved the operational effectiveness and output of the financial industry (Rizvi et al., 2018).

The fintech landscape in Pakistan can be classified into two distinct classifications: conventional and emerging Fintech. Traditional Fintech is signalized by its attachment to accomplishing finance theories and products, whereas developing Fintech is focused on pioneering technology-driven solutions. Traditional fintech companies engage in extensive collaboration with established participants in the financial industry while developing fintech companies actively establish alliances with banks and other firms. The contradiction, as mentioned above, illustrates the progression of the financial technology sector in Pakistan, where established models uphold traditional processes while emerging fintech companies propel innovation through advanced technology (Hakro et al., 2022). Within the Islamic financial technology ecosystem and technology in Pakistan, there is a growing awareness of the potential advantages associated with the use of Artificial Intelligence (AI) and big data analytics in many different aspects of economic operations. These technologies hold the potential to improve operational efficiency and overall effectiveness. The possible enhancement of Islamic trade financing through the deployment of distributed database technology can reduce non-compliance with Sharia standards.

Artificial intelligence (AI) offers the potential to streamline wealth management procedures, enhancing their accessibility and user-friendliness. Additionally, there is a pressing need for innovation and increased focus within the Takaful industry, which encompasses Islamic insurance, to penetrate the significant Muslim insurance market effectively. Based on the findings of the Global Islamic Fintech Index (GIFT), Pakistan occupies the ninth position among a total of 64 countries. It is anticipated that the market size of Pakistan's Islamic fintech sector will reach \$2.8 billion by the year 2025. However, a limited number of entities self-identify as Islamic Fintech or incorporate the term inside their branding.

It is evident that numerous prominent companies within the industry mainly consist of payment providers, particularly digital wallets, which implies their adherence to Sharia principles. Out of the total of 27 companies that have received funding and are engaged in the development of loan or investment products, merely nine explicitly classify their offerings as adhering to Sharia principles. Three companies on the list assert themselves as Pakistan's inaugural Islamic Buy-Now Pay-Later (BNPL) providers, although they fail to provide any substantial evidence to support their claims (Dawn,2022).

### **Current Islamic Finance Assets in Pakistan**

Pakistan is ranked seventh globally in terms of takaful holdings, with a value of \$1 billion. Pakistan is ranked ninth among the top countries in terms of outstanding sukuk value in 2021, in billions of US dollars, with a holding of US \$11 billion. Pakistan aims to enhance the proportion of Islamic instruments within its Government Securities Portfolio to a minimum of 10% by the conclusion of fiscal year 2022-23. This strategic objective may result in an escalation of sukuk issuances by the country. Considering the prevailing political instability and substantial current account deficit in Pakistan, the government may find sukuk issuances to be a more appealing option. However, it remains unclear if investors will be inclined towards riskier sukuk unless they are offered a substantial premium in terms of pricing. In Islamic Funds AuM, Pakistan lies in eighth position among the top ten countries in the growth of Islamic Funds AuM with US \$2 billion. Pakistan lies in fifth position among the top ten countries in the number of Islamic Funds AuM with 183 Islamic funds. Pakistan has seen a considerable increase in Islamic pension funds. The Roshan Pension Plan for Pakistanis abroad was soft-launched by the State Bank of Pakistan on August 15. Local banks and asset managers, especially Islamic ones, will gain. Nine million Pakistanis in the worldwide community will benefit from the pension plan, which will boost the local economy.

Among the top ten countries based on Shariah scholars, Pakistan is in fourth position with 90 Shariah scholars.

### **Research Methodology**

The present study employed a mixed-methods research technique, using quantitative and qualitative approaches, to investigate the research aims. This approach is considered appropriate since examining a particular issue in a research study while considering the factors that still need to be discovered is essential. The study uses a combination of bibliometric analysis and content analysis approaches to examine the research topic. Further inquiry is necessary to analyze the ecosystem of Islamic financial technology and its most recent advancements in Pakistan. Hence, the utilization of the mixed technique coincides proficiently with the fundamental characteristics of this investigation. The first stage was applying a text mining method to ascertain the key elements of Islamic Fintech. The next step involves employing human reasoning to analyze the most recent developments in Pakistan's Islamic fintech sector. Moreover, a quantitative bibliometric study objectively assesses the growth of the Islamic fintech ecosystem in Pakistan compared to the worldwide publishing trend.

Fintech is a reasonably new idea in Pakistan when it comes to the Islamic financial technology ecosystem and technology, and there needs to be more study on how it fits into the Islamic financial technology ecosystem landscape. That is why we have decided to thoroughly review how Fintech solutions can make Islamic financial technology ecosystem products more appealing while still following Shari'ah rules. This literature work framework submitted by Guenther and Stechemesser (2012) will help us with our review. It has three main steps (Stechemesser & Guenther, 2012).

At the beginning of our research, we set a clear objective to investigate the field of Islamic financial technology (Fintech) within the unique context of Pakistan. We began by gathering relevant academic publications from several databases to achieve this goal. The findings on the integration of Islamic principles with Fintech were quite noteworthy. We did a comprehensive literature survey encompassing theoretical and conceptual studies.

The primary purpose of this article is to establish an overarching research route that investigates the feasibility of incorporating Fintech solutions into the Islamic financial sector. We utilized diverse terms to explore the complicated landscape while doing our database searches. These keywords included significant terms such as "Fintech," "Bitcoin," "Blockchain," "Islamic Finance," and "Shari'ah."



**Table 1: Keywords for search**

<b>Search Stages</b>	<b>Keywords for Search</b>	<b>Search Output (Documents Number)</b>
Stage 1	TITLE-ABS-KEY ( Islamic AND Fintech )	<b>238</b>
Stage 2	TITLE-ABS-KEY ( islamic AND fintech ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "ECON" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) )	<b>207</b>
Stage 3	TITLE-ABS-KEY ( islamic AND fintech ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "ECON" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) )	<b>100</b>
Stage 3	TITLE-ABS-KEY ( islamic AND fintech ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "ECON" ) OR LIMIT-TO ( SUBJAREA , "SOCI" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )	<b>98</b>

*Source:* Scopus Database.

In the search for knowledge, extensive searches were conducted across several databases such as Emerald, Scopus, and Google Scholar. Our investigation's preliminary stage resulted in obtaining a set of relevant scholarly articles. The articles mentioned earlier provide the basis for our exploration of the potential opportunities and obstacles associated with integrating Fintech advancements and Islamic financial technology ecosystem principles, specifically within the context of Pakistan.

A bibliometric analysis study is a systematic methodology applied to examine global research tendencies in a specific field by investigating the outputs of academic literature databases. This approach differentiates a bibliometric analysis paper from a review paper, as the latter primarily emphasizes examining the existing scholarly literature's patterns, trends, and features. In contrast, the latter focuses on discussing current challenges, developments, and future directions within a particular subject area. While a review paper provides a comprehensive overview and critical analysis of the subject matter, a bibliometric analysis paper utilizes quantitative methods to explore patterns, relationships, and characteristics of research publications within a given field. Table I shows the data mining process, Search stages, keywords used, and search output. We conducted searches by utilizing the Scopus database.

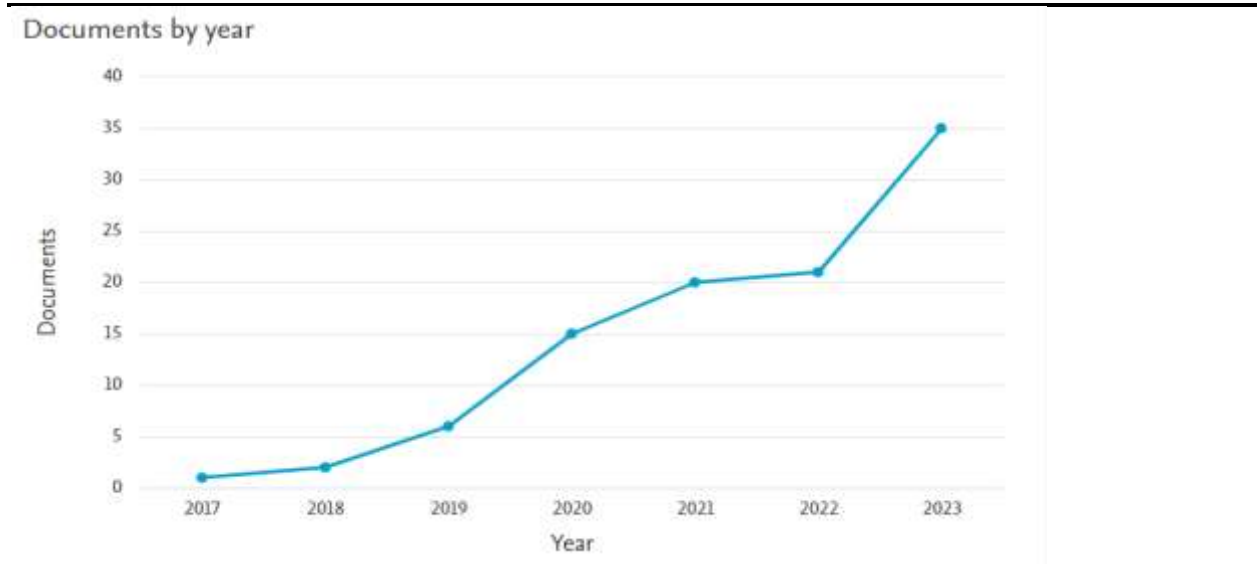
The study utilized data from the widely recognized and comprehensive Scopus database, encompassing various social fields, including business and finance (Guckenbiehl, 2021). Data was analyzed by using VOS viewer and NVivo software. The VOS viewer software can import and export data from many sources, hence facilitating data integration. Additionally, the software offers exceptional visualization capabilities, enhancing the presentation and interpretation of the data (Van Eck, 2011).

## Results and Discussion

### Islamic financial technology ecosystem publishing trends

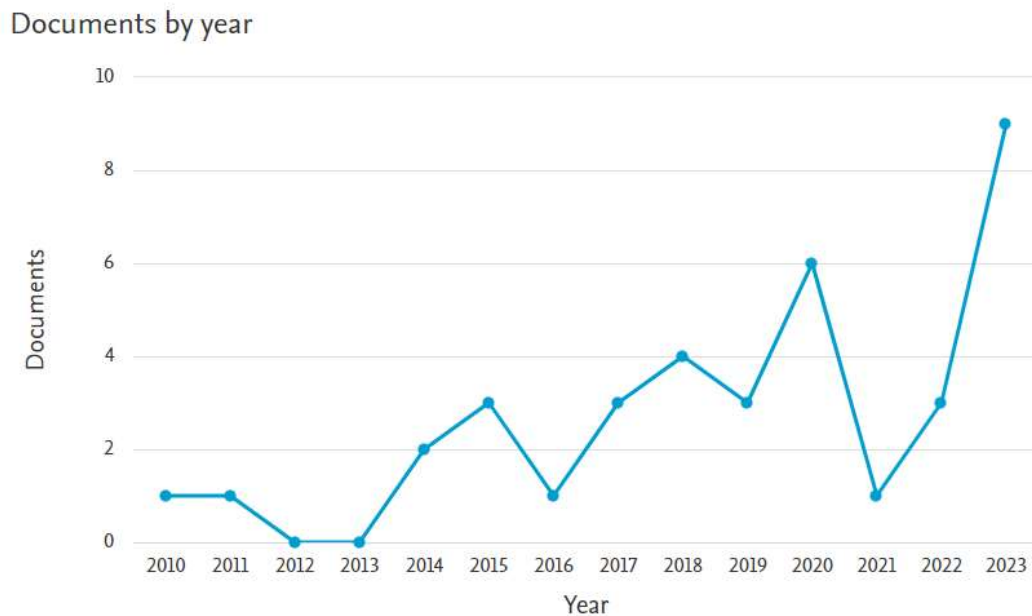
The development of the ecosystem for Islamic financial technology has been the subject of a great number of publications that have been published. The supportive atmosphere that has been maintained by the Directorate of Malaysia and research-oriented organizations is one of the likely explanations for this tendency. As a consequence of this environment, numerous publications have been produced by the universities in Malaysia. In the top ten papers on Islamic finance technology, nine of the articles were published between the years 2022 and 2023, which is an indication that the topic is developing. Previous research that highlighted the expansion of Islamic financial technology ecosystem development literature was established by this study, which verified those findings.

**Figure 3: Worldwide publication trend**



*Source:* Scopus Database

Figure 3 shows the publication trend year-wise and worldwide. The number of Islamic financial technology ecosystem publications has increased significantly in the past five years. During these particular time spans, it is of high consideration that the publication rate related to the Islamic financial technology ecosystem has been enlarged, especially during the years 2022 and 2023.

**Figure 4: Publication trend in Pakistan**

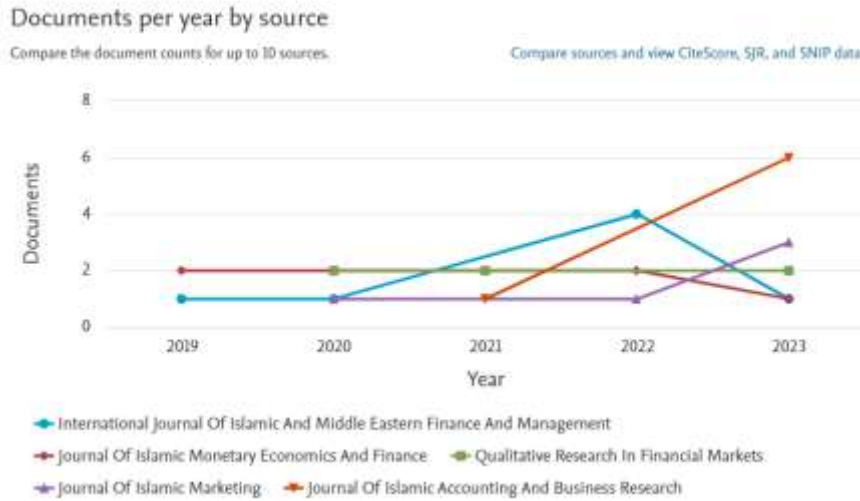
Source: Scopus Database

In Figure 4, a graphical depiction of the content that is being published in Pakistan about Islamic financial technology demonstrates the upward trend that has been seen over the course of the previous years. In the past three years, there has been a significant increase in the number of innovations that have been made in the literature of Islamic financial technology. The most significant increase in the number of publications of Islamic financial technology is expected to occur in the year 2023.

#### **Journals with Most Published Articles Regarding Islamic Fintech Ecosystem**

The primary purpose of the current study is to examine which academic journals are the most influential in publishing scholarly articles related to the Islamic financial technology ecosystem. The findings show that the Islamic financial technology ecosystem literature has experienced exceptional growth. However, this growth is mainly concentrated in Malaysia due to favorable conditions for research in this area.

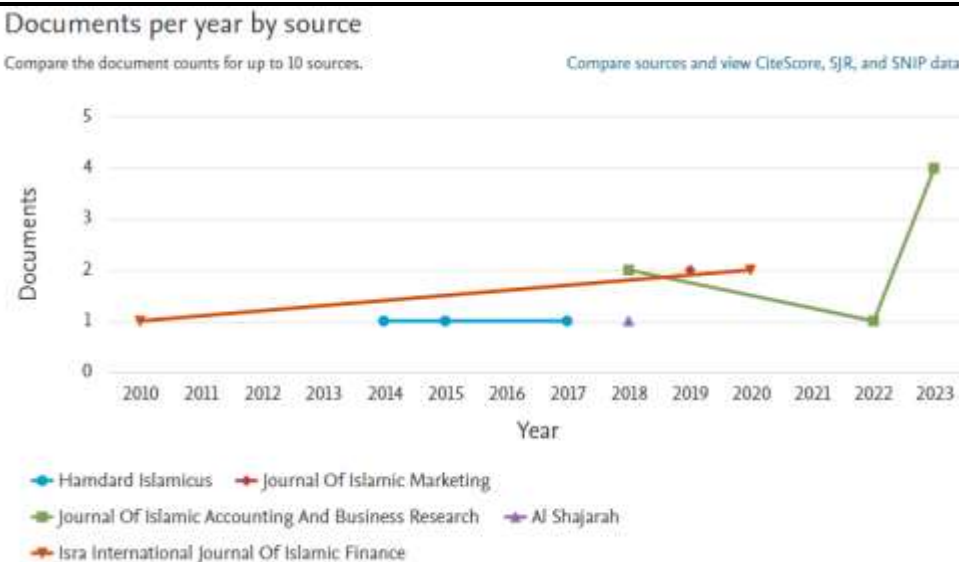
**Figure 5: Worldwide journals with most published articles regarding Islamic Fintech**



Source: Scopus Database

Based on the facts shown in Figure 5, it can be noticed that the "International Journal of Islamic and Middle Eastern Finance and Management" holds a significant place among the top four journals. From 2022 onward, the Journal of Islamic Monetary Economics and Finance has produced several noteworthy articles in this area. To be more specific, between the years 2020 and 2023. Financial technology is the subject of several qualitative research papers in financial markets. Between 2020 and 2022, the Journal of Islamic Marketing will publish a consistent body of content relevant to fintech, and then it will suddenly increase in 2023. Journal of Islamic Accounting and Business Research endures enhancement from 2021 to 2023.

**Figure 6: Journals with most published articles regarding Islamic Fintech in Pakistan**



Source: Scopus Database

Similarly, the trend of journals with most published articles regarding Islamic Fintech in Pakistan are being portrayed in Figure 6. It can be noticed that the "International Journal of Islamic Accounting and Business Research" on a prominent position within the top 04 journals.

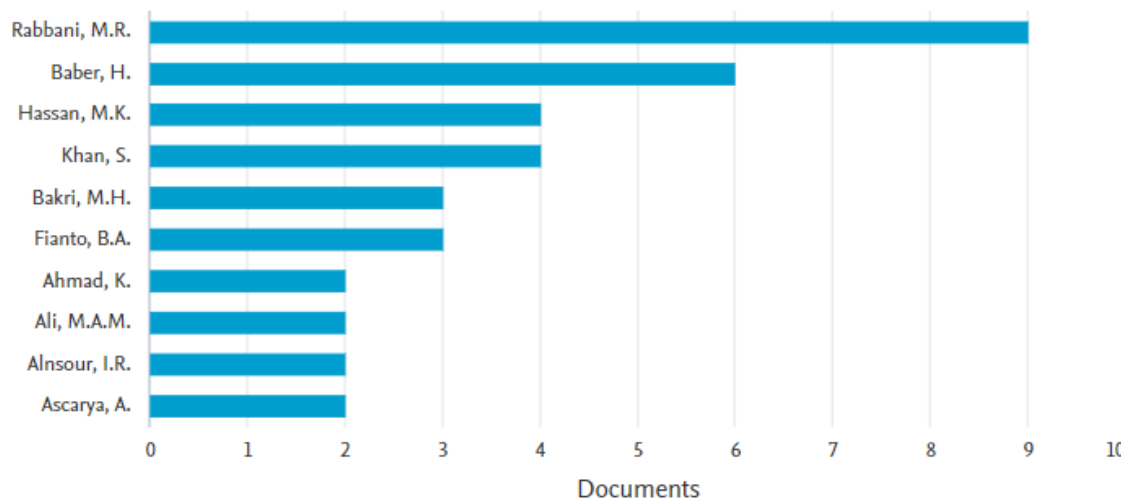
### Authors With the Highest Publications Regarding Islamic Fintech

The relevance of the author's analysis in bibliometric research lies in the fact that it allows for the examination of all the aspects that have an effect on and contribute to a particular study topic. In addition, the research endeavored to ascertain how famous writers within the ecosystem of Islamic financial technology had made major contributions to the subject.

**Figure 7: Authors with the highest publications globally**

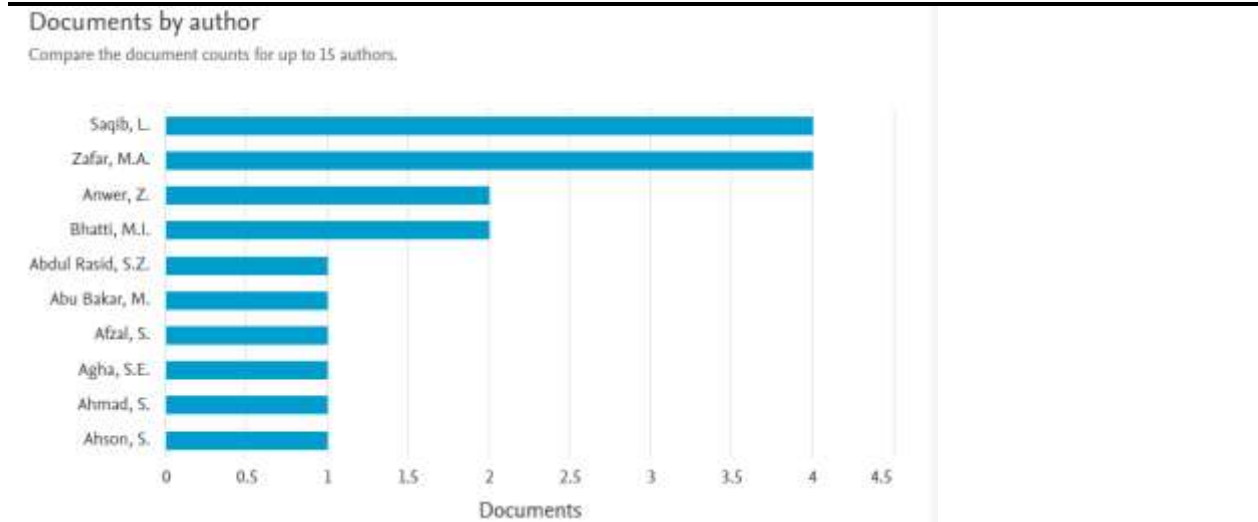
#### Documents by author

Compare the document counts for up to 15 authors.



*Source:* Scopus Database

Figures 7 depict counts of up to top 10 authors' publications related to this field worldwide. Rabbani secured a high ranking in the publications of a given area by doing 9 literature articles. Ascarya sanctified has a minimum number of publications on it.

**Figure 8: Authors with the highest publications in Pakistan**

Source: Scopus Database

Figure 8 depicts counts of up to top 10 authors' publications related to this field in Pakistan. In Pakistan, Saqib and Zafar include a high-rated number of publications. While Anwar and Bhatti meet the same quantity of literature related to fintech, the rest of the authors achieve 2 publications regarding this field. Overall, a significant hike can be noticed in the literature of the Islamic financial technology ecosystem worldwide and in Pakistan.

### Analysis of Geographical Origin

The country link strength indicates publications co-authored by two interlinked countries. On the other hand, the overall link strength shows the overall strength of a country's co-authorship ties with other countries. The presented Figure 9 provides evidence of country collaboration. It highlights the active collaborative networks and high production poles around the world in the field of Islamic financial technology trends, particularly in countries where the Muslim faith is predominant, mainly focused in Malaysia. Malaysia has 29 documents with 334 citations and 25 link strength with other countries. Bahrain occupies the second number, which consists of Fifteen documents with 406 citations and 17 link strength with other countries. United Arab Emirates secured third rank with 5 documents, 12 citations, and 11 link strength with other countries. Indonesia has a fourth number, having 29 documents with 243 citations and 9 link strength with other countries. India justifies the fifth number, comprising 6 documents with 126 citations and 8 link strength with other countries.

**Figure 9: Worldwide analysis of geographical origin**

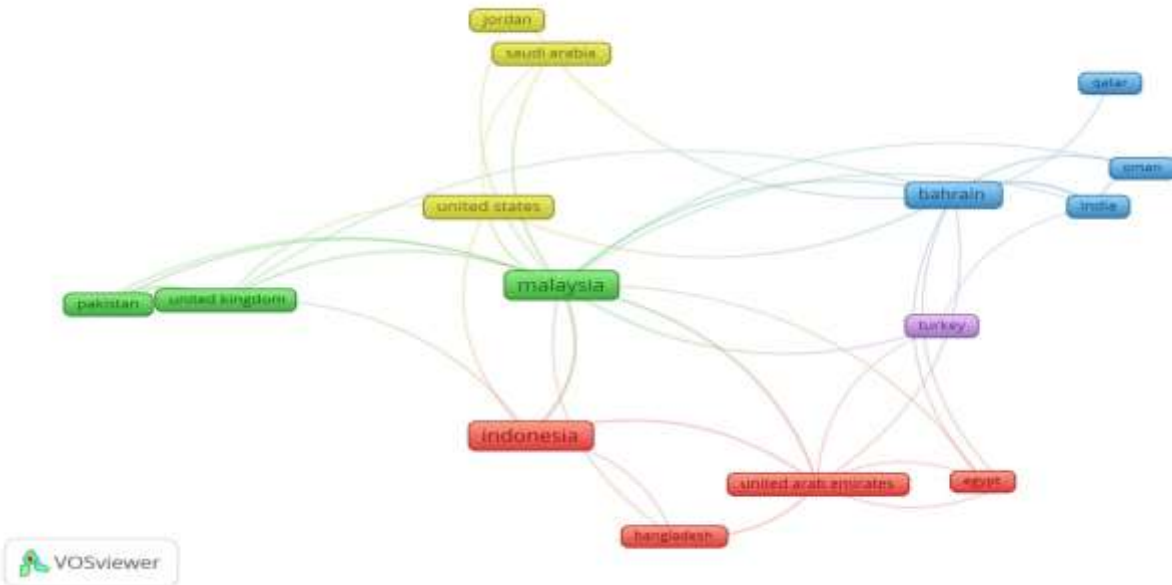
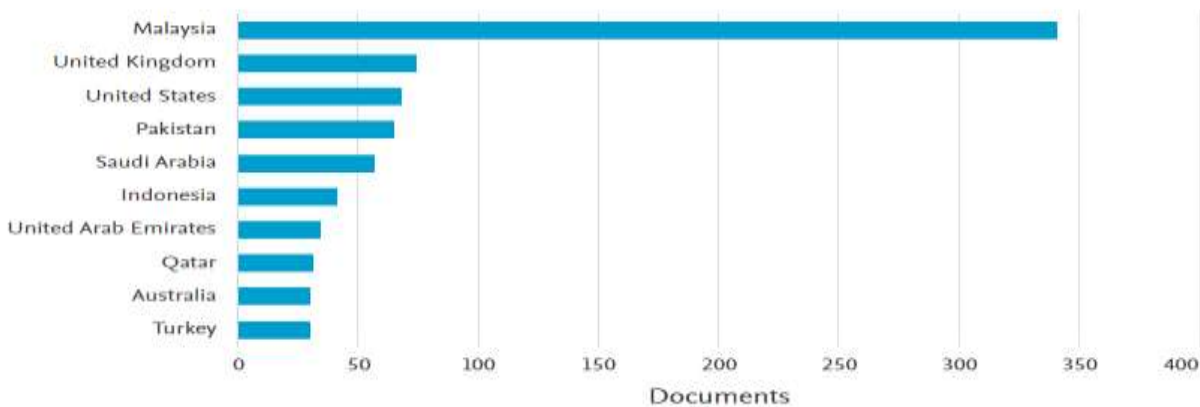


Figure 10 is the graphical representation of the documents up to 10 countries. Malaysia has the highest publication record with 334 publications, followed by Bahrain with 406 publications, the United Arab emirates with 12 publications, Indonesia with 243 publications, India with 126 publications, the United Kingdom with 47 publications, the United States 118 publications, Saudia Arabia with 93 publications, Oman 83 publications, and Pakistan 130 publications. This data illustrates an examination of documents based on their country of origin.

**Figure 10: Comparison of country wise document**

**Documents by country or territory**

Compare the document counts for up to 15 countries/territories.

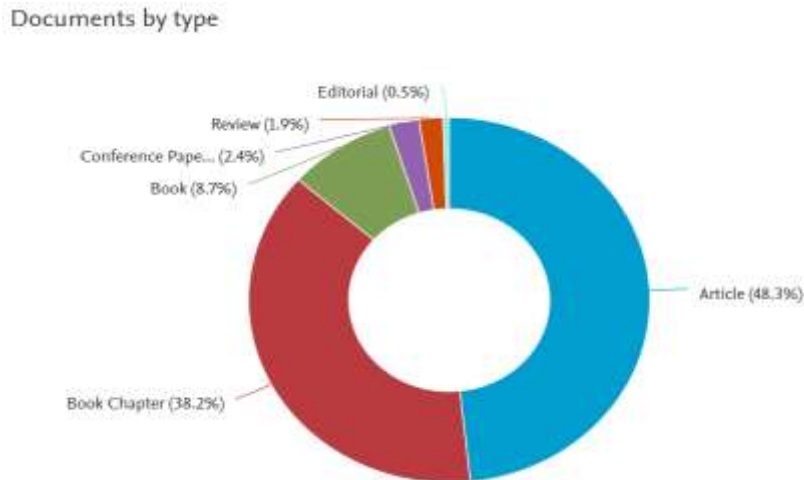


Source: Scopus Database

### Documents by Type Regarding Islamic Fintech

The pie chart entitled "Documents by Type" presents a graphical depiction of the allocation of publication types within the research corpus that was examined in this study. The provided chart presents a breakdown of the proportions of various document types, thereby providing valuable insights into the composition of the existing literature pertaining to the subject matter of Islamic Financial technologies ecosystem trends.

**Figure 11: Document by type**



*Source:* Scopus Database

Based on the data presented in the chart, it can be observed that articles comprise the predominant portion. Figure 11 accurately exhibits 48.3% of articles of the documents analyzed. This finding suggests that a significant proportion of publications within this particular domain consist of primary research articles, thereby exemplifying the extensive and diverse academic research focused on knowing and accelerating the field of Islamic Finance technology ecosystem trends worldwide as well as in Pakistan. The book chapter, which constitutes 38.2% of the documents, highlights extensive reviews of the literature that offer a critical analysis of the current knowledge, identify areas where research is lacking, and provide valuable insights into the recent advancements, challenges, and potential future directions within this field. The remaining part of the pie chart illustrates a diverse range of document types, including conference papers, editorials, notes, reviews, and other miscellaneous categories.

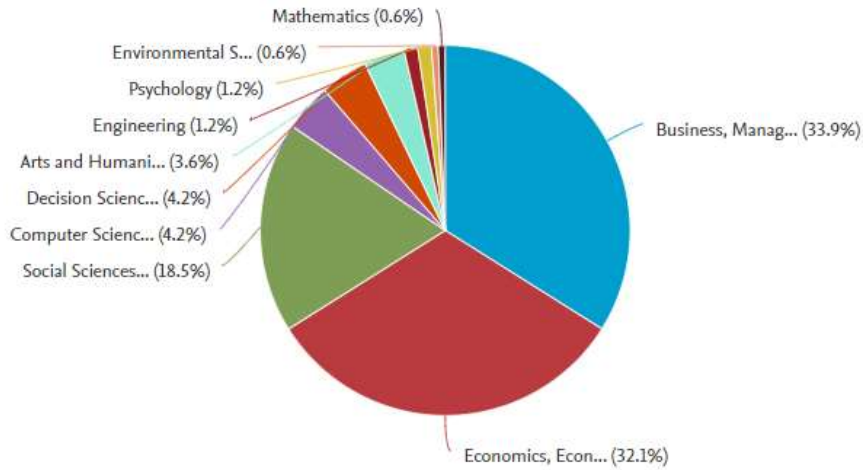
### Documents by Subject Regarding Islamic Fintech

By employing fundamental search terms related to the Islamic financial technology ecosystem and their corresponding synonyms, the initial phase of analyzing the Scopus database resulted in categorizing document distribution by subject type.



**Figure 12: Worldwide document distribution by subject type**

Documents by subject area

*Source: Scopus Database*

As depicted in Figure 12, management and business constitute approximately 33.9% of the global research on Islamic financial technology ecosystem trends. Finance, economics, and econometrics collectively rank second with a percentage of 32.1%, while social sciences follow closely behind with 18.5%. According to Figure 12, the remaining Islamic financial technology ecosystem development research is allocated to other domains.

**Figure 13: Document distribution by subject type in Pakistan**

Documents by subject area

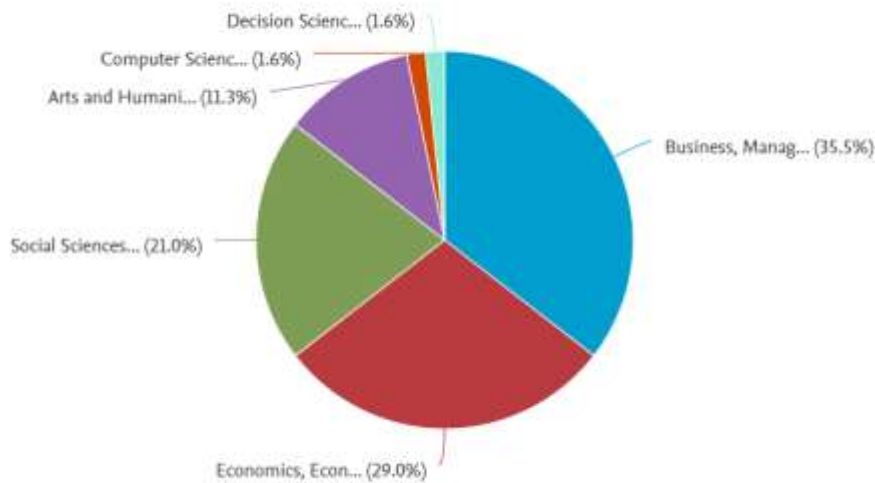
*Source: Scopus Database*

Figure 13 closely observes the document distribution by the subject trend in Pakistan, which shows that 35.5% of business management, 29.0% of econometrics and economics, and 21.0% of social sciences, while the remaining trend is followed up by arts (11.3%), computer science (1.6%), and decision science (1.6%).

### Co-occurrence Analysis of Keywords

The circle size surrounding each keyword reflects its frequency of use, with "Fintech" being the most commonly used keyword.

**Figure 14: Co-occurrence analysis of keywords**

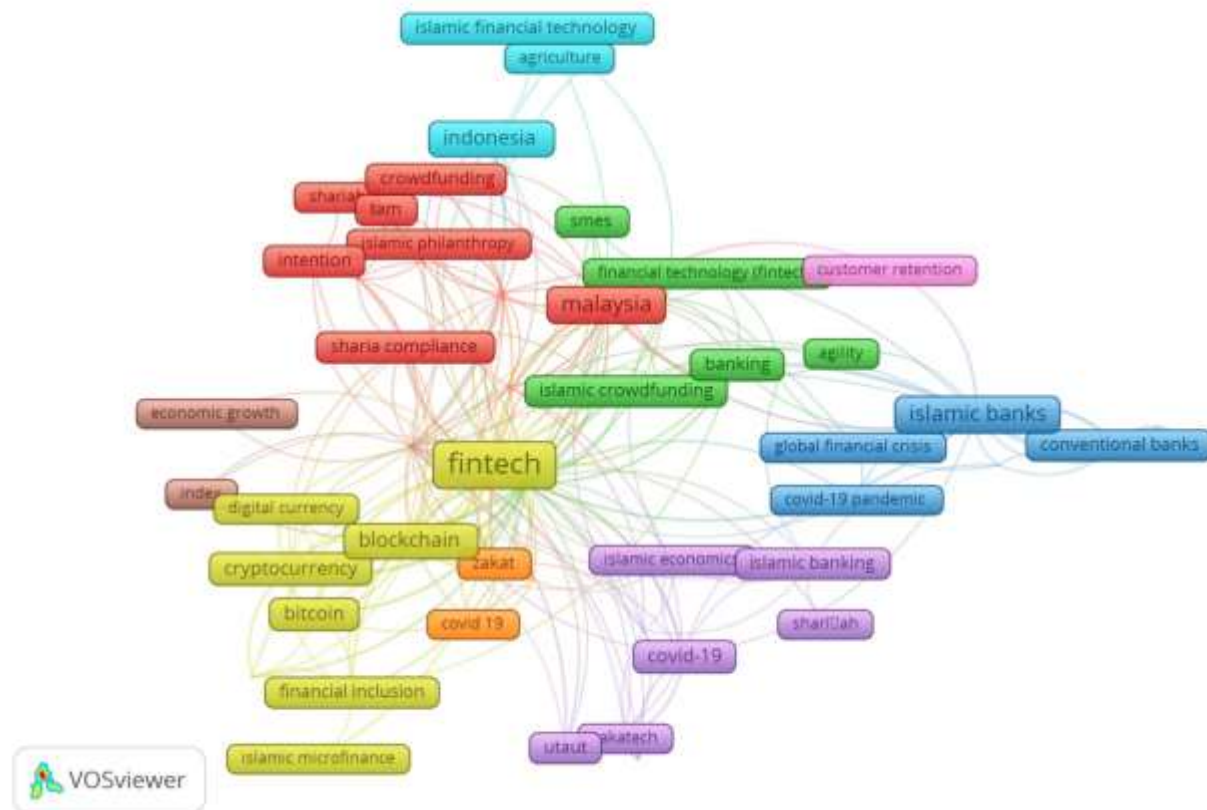


Figure 14 illustrates a concomitant analysis of central words within publications on fintech, utilizing keywords provided by the authors at the time of publication. There have been 42 occurrences of fintech, and the total link strength between these occurrences is 98, followed by the words "Islamic finance" occurrences of 26, link strength of 69, "Islamic fintech" occurrences of 22, link strength of 36 majorly prominent.

### Word Analysis

Word analysis requires the application of several strategies and procedures in order to comprehend and evaluate the words that are employed. The objective is to recognize themes that are currently popular and make those the primary focus. The key phrases that are frequently utilized in papers dealing with the topic of Islamic fintech are displayed in Figure 13. The phrases "Islamic fintech,"

"financial technology," "research," and "fintech companies" are just a few of the commonly used terms.

**Figure 15: Analysis of keywords**



*Source:* Nvivo14

## Discussions

This study examines the literature on articles in accordance with Islamic financial technology published in journals cataloged by Scopus bibliometrically and text analysis. The urge for accumulations in Islamic finance technology has commenced internationally with the emerging ground work in this field, specifically in some countries. The enlargement in the annual additions related to Islamic financials because of its sturdiness has increased tremendously (Sun, 2020). In theoretical working, it is exceedingly protected due to its center on risk-free boundaries on extensive risk activities. Several exciting things emerge from the analysis. There has been a significant increase in publications written about Islamic finance in the last five years (2019–2023) (Harande, 2008). There may be a correlation between the hike in the quantity of journals providing venues for such publishing and the dramatic increase in the volume of literature. It highlights that Malaysia has the highest publication records, followed by Bahrain, United Arab Emirates, Indonesia, India, United Kingdom, United States, Saudia Arabia, Oman, and Pakistan. This data illustrates an examination of documents based on their country of origin. Training and research institutes and the government worked to create a conducive environment in Malaysia, and this climate is one of the reasons why Malaysian universities produce such a large number of publications (Naqvi, 1977). The government's assistance has constantly been essential in fostering Malaysia's Islamic finance sector's expansion.

The current research paper's discussion part offers a thorough analysis of the data obtained through a bibliometric and text analysis investigation of Islamic finance technology literature that has been indexed in Scopus and Google Scholar. The research reveals a comprehensive viewpoint on the

development of Islamic finance technology, emphasizing notable patterns and measures of productivity. Over a period of time, research in the domain of Islamic finance, Islamic Fintech, has exhibited a dynamic progression characterized by changes in research priorities and the emergence of various subfields. Furthermore, our examination of word analysis utilizing data processing techniques revealed that studies pertaining to Islamic themes in Pakistan exhibit a notable prevalence of issues related to peer-to-peer lending (P2PL). P2PL refers to a digital platform that facilitates direct connections between borrowers and lenders, eliminating the need for intermediaries. This streamlined process enables borrowers to obtain loans in a more expedited manner compared to conventional systems (M A Afandi & Muta'ali, 2019; Abidat, 2019; Firdaus et al., 2022). Social interaction and customer issues (Wirani & Ibrahim, 2022) and danger (Firdaus et al., 2022; Khilfah & Faturohman, 2020; Muhammad et al., 2021) are just two of the many concerns raised about P2PL.

In contrast to Malaysia, which frequently brings up the topic of Islamic crowdfunding—a platform that supports fundraising for a wide range of projects and enterprises in accordance with Islam, including small company financing, infrastructure development, and so on the remaining of the world, this is a relatively new phenomenon (Abd Rashid, 2021).

The study of differing levels of academic output across geographical regions furnishes considerable insight into the worldwide distribution of intellectual contributions and research trends in Pakistan. The identification of prolific authors and significant institutions enables an examination of their respective contributions to the growth of the field. Furthermore, the analysis of subject matter includes the examination of prevailing themes and the identification of emergent research clusters. Citation analysis is a method that allows for the identification of influential publications, whereas collaborative trends serve to emphasize the significance of research interaction (Othman et al., 2009). This study acknowledges and addresses the constraints inherent in bibliometric evaluation, providing opportunities for further research and considering possible policy consequences. The current study offers important contributions to the field of Islamic finance technology research by enhancing our comprehension of its viewpoint, patterns, and scholarly output.

### **Top Islamic Fintech Market**

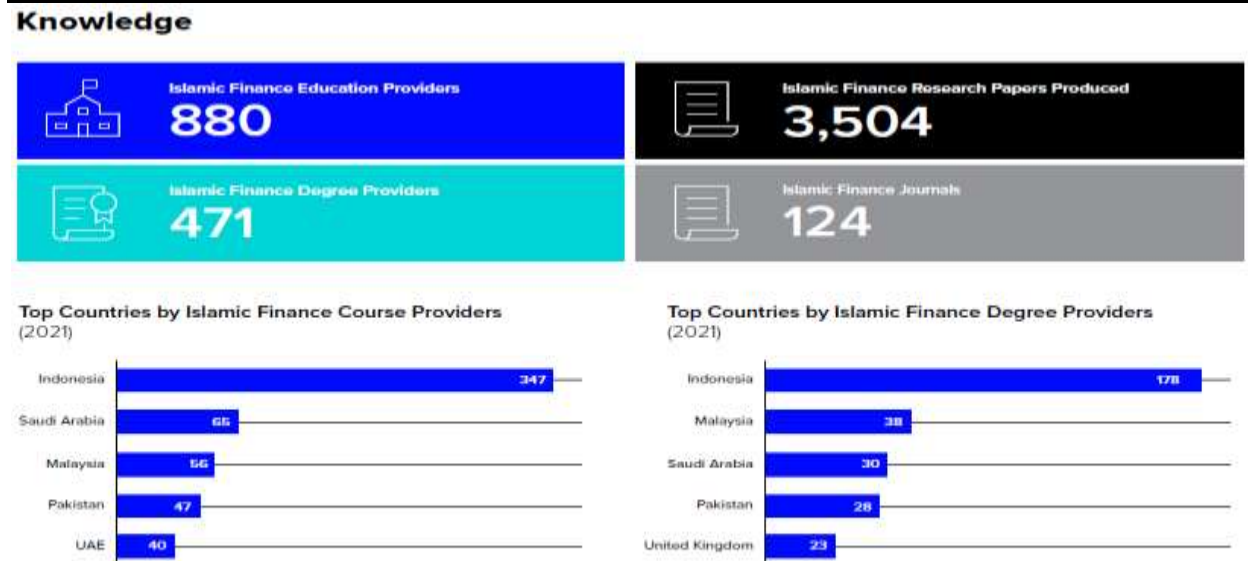
The Shariah perspective has been given increased attention in the examination of FinTech, leading to a growing interest in digital assets within prominent Islamic finance markets. The Covid-19 pandemic has expedited the growth of financial technology, commonly known as fintech, and the majority of regulatory efforts in this area encompass actions that are applicable to both conventional and Islamic financial institutions. According to the Annual Report 2021 of Pakistan's Securities and Exchange Commission (SECP), there is a plan to incorporate Shariah principles into certain FinTech advancements, including smart contracts and blockchain technology.

The emergence of a strong emphasis on digital assets inside prominent Islamic finance marketplaces is a highly promising advancement. In early September 2022, the Saudi Arabian Monetary Authority (SAMA) demonstrated its commitment to digital assets, Dubai established the Virtual Assets Regulatory Authority. In 2018, Abu Dhabi Global Market introduced a regulatory framework for the oversight of crypto assets. The emphasis placed by the government in Saudi Arabia and the United Arab Emirates on this particular sector has the potential to stimulate more participation from various industry stakeholders in the realm of digital assets, including Islamic enterprises. This also implies that an increased number of Shariah scholars will engage in a more comprehensive examination of these assets. Several resolutions have been proposed regarding the

asset class. One of the prominent Shariah decisions pertaining to digital assets, specifically digital currency, was issued by the Shariah Advisory Council of the Securities Commission of Malaysia in the year 2020.

The significance of Islamic finance education is increasing inside academic institutions globally. Malaysia, Saudi Arabia, Pakistan, the United Arab Emirates (UAE), and the United Kingdom (UK), collectively represented 45% of the overall suppliers of Islamic finance courses and 46% of the total providers of Islamic degree programs. Simultaneously, there are promising indications that the dissemination of Islamic finance education is expanding beyond the aforementioned five principal countries.

**Figure 16: Islamic finance education**



ICD – REFINITV ISLAMIC FINANCE DEVELOPMENT REPORT 2022: EMBRACING CHANGE

The study conducted by the Shariah Advisory Council (SAC) examined the potential classification of digital assets as both assets and currency. Subsequently, it aimed to ascertain Shariah's perspective on digital tokens. Pakistan produced 207 Islamic finance research papers, ranks 4th among the top 5 countries, has 5 Islamic finance journals, and ranks fourth among the top 5 countries.

### Circular Economy and Islamic Fintech

The current discourse encompasses emerging subjects like the circular economy and Islamic Fintech, while the production output continues to be predominantly centered among the top five countries. Circular economy, Islamic Fintech, and Jakarta Islamic index are emerging challenges. Indonesia's significance in the global Islamic economy and the growing importance of circular economy and Islamic Fintech will ensure that researchers continue to focus on these topics and their related concepts. Furthermore, it is worth noting that a small number of countries were responsible for the majority of research conducted in the field of Islamic finance. Specifically, researchers affiliated with Malaysia and Indonesia collectively contributed to 63% of studies in

the year 2021. Additionally, the top five countries in terms of research output, namely Indonesia, Malaysia, Pakistan, Saudi Arabia, and Turkey, accounted for a significant 77% of the total research conducted in this domain.

Regarding the methodologies employed, there was a notable prevalence of evidence-based studies and case study-focused articles. Additionally, bibliometric analyses and comparative analyses were frequently utilized in the research.

### **Current Islamic Finance Strategy in Pakistan:**

A proposed strategic plan for the Islamic banking industry spanning the years 2021 to 2025. The Plan encompasses six key strategies, namely enhancing the legal framework, enhancing the framework for managing liquidity, and increasing awareness. The Federal Shariat Court of Pakistan (FSC) is a judicial institution established under the Constitution of Pakistan. The FSC has officially ruled that *riba*, also known as interest, is illegal within the Islamic framework. Consequently, the FSC has issued a directive to the government, urging them to ensure that all transactions are converted to adhere to Shariah principles within five years.

### **Conclusion**

This study provides the most recent information that relates to the subject of Islamic financial technology across the globe and Pakistan's current status. Consequently, it aids Islamic finance organizations in shaping their policies. The study's findings help the Islamic finance sector by providing important information for shaping policy. Furthermore, the study underscores the importance of the industry's support for this type of research. Additionally, the study findings can be utilized as a source of guidance for training and educational institutions regarding Islamic finance technology. The discipline of Islamic finance technology is a progressing field and, therefore, requires greater awareness globally. Muslim-majority countries must teach about Islamic finance, Islamic finance journals associated with organized research institutions, and journals in *Arabic* listed in WoS and Scopus. While earlier research has examined the development of Islamic finance literature in the Scopus database, it has done so with a narrower focus on specific topics and periods than shown here.

This study reveals important information on the most recent condition of the literary work on Islamic finance technology, including publishing, prominent countries, trends, journals, authors, and prevalent central words in Islamic financial studies. According to the findings, the body of literature on Islamic finance technology has undergone significant expansion. As a consequence of this, it is essential for countries that have a Muslim majority to enhance knowledge about Islamic finance and Islamic finance technology, which compromises their educational curriculum and encourages more research to be done in a variety of languages, comprising regional languages and Arabic and in addition to English. This can be of assistance to residents in better comprehending the activities of Islamic financial institutions. These countries should also push the formation of other journals that are dedicated to Islamic finance, as this would provide additional opportunities for publishing research in this sector. This project will need government and academic assistance.

### **Islamic Fintech Hubs: Growth & FDI Opportunities**

Bahrain, Bangladesh, Egypt, Iran, Jordan, Kuwait, Nigeria, Oman, Pakistan, Qatar, and Turkey are experiencing a gradual development in terms of their receptiveness to Islamic Fintech. However, these countries demonstrate significant growth in their domestic market size.

Furthermore, according to the hubs study, Bahrain, Bangladesh, Egypt, Iran, Jordan, Kuwait, Nigeria, Oman, Pakistan, Qatar, and Türkiye are emerging ecosystems that are seeing tremendous growth.

Malaysia, the United Arab Emirates (UAE), and Indonesia are recognized as prominent Leader Hubs, while Saudi Arabia is transitioning from an emerging hub to a leader in its own right. Bahrain, Bangladesh, Egypt, Iran, Jordan, Kuwait, Nigeria, Oman, Pakistan, Qatar, and Turkey are experiencing a maturation process characterized by reduced levels of permissive conditions for Islamic Fintech. However, these countries demonstrate significant growth in their domestic market size.

### **Challenges of Islamic Fintech**

The financial sector has experienced a significant enhancement with the emergence of Fintech, a mixture of financial technology and services provided by financial institutions. Fintech companies are presenting challenges to traditional financial institutions through the provision of innovative services to a diverse range of users. In recent times, there have been notable disruptions in conventional banking and finance practices due to the emergence of innovative financial technology (Fintech) solutions. Fintech start-ups pose problems to Islamic financial institutions (IFIs) as well. The emergence of blockchain technology has given rise to alternative currencies, hence introducing complexities in the functioning of conventional financial institutions.

The integration of blockchain and other Fintech-based technology into their product offering holds substantial potential for the Islamic financial industry. Nevertheless, the successful amalgamation of Fintech with the Islamic banking sector needs enhanced surveillance to uphold the intricate interplay between agents and crucial stakeholders. The lack of such monitoring would result in the emergence of trust concerns, a phenomenon commonly observed with the introduction of novel technologies. Fintech solution suppliers face the hurdle of additional scrutiny from diverse governmental entities. One additional obstacle that hinders the coordination of Fintech with Islamic finance pertains to the limited comprehension among stakeholders, which can be ascribed to the conceptual character of Fintech-driven technology. The limited development of the ecosystem surrounding various Fintech infrastructures is impeding a thorough comprehension of their capabilities and hindering their advancement in the market.

Furthermore, it is important to note that Fintech solutions are subject to privacy and security problems. The primary obstacle to the effective incorporation of Fintech in Islamic Finance lies in the perspective held by many Shari'ah experts, who contend that Fintech advancements, including bitcoin and other cryptocurrencies, need to adhere to Shari'ah principles. Hence, the effective incorporation of Fintech technologies into the Islamic banking sector necessitates the establishment of a comprehensive framework of guidelines that may guarantee adherence to Shari'ah principles in the provision of financial products.

### **Future Recommendations**

To enhance the publication output of research and training centers specializing in Islamic finance and Islamic financial technology, it is important to encourage and support institutions in Islamic countries. Furthermore, it is crucial to include Islamic finance and Islamic finance technology in the curricula of students majoring in social and management sciences at the undergraduate level. This encompasses areas like economics, business administration, accounting, and finance. Coordination between leading Islamic finance journals like the ISRA International Journal of

Islamic Finance and indexing services like WoS and Scopus is also crucial. Working together like this would allow for the creation of a more robust environment for journals written in Arabic.

Most of the articles mentioned in Islamic finance technology were published during the past few years. This suggests that the field is truly starting to pick up speed. Everyone involved in this growing discipline must keep this momentum going. This goes to show how Islamic finance and Islamic finance technology are becoming more widely accepted in academic circles.

The findings highlighted in the third part of the study show a notable enhancement in the numerous papers recently appearing in the most highly respected journals. That being said, this research is a continuation and expansion of previous studies. It explores a broader range of topics and summarizes preceding literature in the field of Islamic finance technology.

Future studies might potentially prioritize the development of the areas that need to be addressed while simultaneously establishing standards and implementing efficient methods for monitoring Fintech transactions in order to strengthen stakeholder trust. Furthermore, it is crucial to examine the potential utilization of banking Technology (Fintech) within the domain of Islamic finance since this has the potential to enhance the competitiveness of Islamic finance products in comparison to those offered by the traditional banking sector. Furthermore, it is imperative for Islamic Fintech start-up enterprises to critically assess their internal and external governance structures in order to safeguard the enduring survival of their activities.

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