

# The Place of FinTech Applications in Islamic Finance: A Conceptual Evaluation

## İslami Finansta Fintek Uygulamalarının Yeri: Kavramsal Açıdan Değerlendirilmesi

Sevgi CENGİZ<sup>1</sup>   
Tuba ÖZKAN<sup>2</sup> 

<sup>1</sup>Department of Accounting and Tax, Kafkas University, Vocational School of Social Sciences, Kars, Turkey

<sup>2</sup>Department of Finance and Banking, Atatürk University, Oltu Faculty of Humanities and Social Sciences, Erzurum, Turkey



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Corresponding Author/Sorumlu Yazar:  
Tuba ÖZKAN  
E-mail: tuba.ozkan@atauni.edu.tr

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### ABSTRACT

The fact that digitalization and technology-supported systems, which are among the most basic applications of the 21st century, are an integrated and vital part of our lives, has increased the demand for financial technologies. It is seen that Islamic financial technology (Islamic FinTech) applications have an important place, especially with financial technology (FinTech). In this context, FinTech and Islamic FinTech applications are conceptually included in the study. By referring to the literature studies on these two concepts, the concept of Islamic finance is discussed from a religious perspective. In this study, basic conclusions were obtained that Islamic finance and FinTech concepts/applications are very up to date, their development and critical aspects are obvious, Islamic finance contains uncertainties in terms of jurisprudence, and that more innovation, diversity, breadth, equipment and time are needed in the applications of the Fintech system to meet the needs of Islamic finance applications.

**Keywords:** Finance, Islamic Finance, Technology, FinTech, Islamic FinTech.

### ÖZ

21. yüzyılın en temel uygulamaları içerisinde yer alan dijitalleşme ve teknoloji destekli sistemlerin, yaşamımızın bütünleştirilmiş ve hayati birer parçası olması, finansal teknolojilere duyulan talebi arttırmıştır. Özellikle mevcut talebin karşılanması noktasında, finansal teknoloji (Fintek) ile birlikte İslami finansal teknoloji (İslami Fintek) uygulamalarının da önemli yer edindiği görülmektedir. Bu kapsamda çalışmada, Fintek ve İslami Fintek uygulamalarına kavramsal açıdan yer verilmiş, söz konusu iki kavram ilişkin yapılan literatür çalışmalarına değinilerek İslami Finans kavramı dini açıdan ele alınmıştır. Çalışma sonucunda, İslami finans ve Fintek kavramlarının/uygulamalarının çok güncel olduğu, gelişme ve eleştirel yönünün açık olduğu, İslami finansın fihki açıdan belirsizlikler içerdiği, İslami finans uygulamalarının müşterilerin ihtiyacını karşılama noktasında Fintek uygulamalarında daha fazla yeniliğe, çeşitliliğe, genişliğe, donanım ve zamana gereksinim duyulduğu gibi temel sonuçlar elde edilmiştir.

**Anahtar Kelimeler:** Finans, İslami Finans, Teknoloji, Fintek, İslami Fintek.

### INTRODUCTION

Understanding the religion of Islam is essential to understanding Islamic finance. The religion of Islam is a divine religion that wants perfection in everything, always foresees change, development, and innovation, rejects stagnation, and has a dynamic structure.<sup>1</sup> Unlike other religions, Islam is a system that morally handles, standardizes, and implements economic issues and advocates social and economic equality. Economic growth, development, and social peace are of primary importance in Islam.

The fact that interest, which is the basis of the conventional (traditional) financial system, is illicit in Islam has caused the Muslim segment to create a separate financial system.<sup>2</sup> This system is called Islamic finance. In line with Islamic rules, it constantly grows with financial institutions and products in

1 Osman Okka – Hasan Kazak, *İslami Finansal Yönetim - Sistem ve Uygulama (Konvansiyonel Finansla Mukayeseli)* (Ankara: Nobel Yayınları, 2020), 5.  
2 *Faizsiz Finans Standartları* (TKBB: 2015), 11.

different segments, not only in Islamic countries but also in various parts of the world. Greater diversity within Islamic ethical principles is needed to accelerate this growth potential of Islamic finance.

The fact that digitalization and technology are inseparable parts of our lives day by day has increased the demand for financial technologies. One of the prominent developments, which is among the important reasons for the increase in demand for this demand, is Islamic finance applications. In an atmosphere where the largest catering company does not have a restaurant, the largest department store does not have a store, and the largest accommodation company does not own a hotel, it is seen that financial technology applications have developed by keeping pace with the change, transformation, and speed created by digitalization.

Since the Islamic finance system seriously needs FinTech applications and technologies, especially in the implementation phase, these two concepts were included in this study in terms of theoretical evaluation and definition, and studies on the subject were examined. As a result of the study, it was observed that "Islamic finance contains uncertainties in terms of Islamic law. Moreover, the FinTech system meets the needs sufficiently in terms of implementation, and participation banks are mostly used to represent Islamic finance"

## 1. LITERATURE RESEARCH

It is seen that the majority of the studies on FinTech and the FinTech concept and its applications are examined in terms of theoretical and historical development, and it is especially compatible with Islamic finance, which is used to represent participation banking.

A model was developed by Bucatinsky (1972)<sup>3</sup> in order to examine the current state of the FinTech system and its impact/contribution on banks. Four basic groups, such as credit and general bank analysis, portfolio program, and computer-aided problem solving, were categorized in the model developed on how to determine portfolio and how system design for the public sector should be made. It was determined that the model created as a result of the study contributed to FinTech applications.

Both positive and negative evaluations of cryptocurrencies were assessed in the study carried out by Kaya (2018)<sup>4</sup>, one of the FinTech applications, which was based on the Islamic examination of cryptocurrencies. Bitcoin and Ripple, which are among cryptocurrencies within the scope of FinTech from an Islamic point of view, were evaluated in the study. As a result of the study, it has been found that it is Islamically permissible to use cryptocurrencies as a medium of exchange, to store value, and to use them in money transfer. In addition, the use of cryptocurrencies for speculation, money laundering, and manipulation are shown as examples of illegal situations.

Ghazali and Yasuoka (2018)<sup>5</sup> stated in their study that crowdfunding and peer-to-peer (P2P) financing options of Islamic FinTech are alternative financing channels to support the future growth and expansion of small and medium enterprises and start-ups in Malaysia.

Ali et al. (2019)<sup>6</sup> investigated the potential impact of FinTech on the Islamic banking and finance sectors in Brunei and Malaysia. Using a semi-structured interview approach and content analysis, they stated that advanced technologies such as artificial intelligence (AI), blockchain, internet of things (IoT), and robotics have great potential impact on conventional and Islamic banking and finance sectors.

In the study conducted by Hasan, Hassan, and Aliyu (2020)<sup>7</sup> and examining the effect of FinTechs in Islamic finance, literature studies on the subject were examined. It was stated that at the end of the study that the Islamic FinTech applications did not grow enough, and the main reason for this was that they had to comply with the Islamic rules. It has been concluded in this study that Islamic FinTech applications can create some difficulties (efficiency, customer retention, transparency, and accountability, etc.) for Islamic Financial Institutions (IFIs).

Islamic FinTech applications in Bangladesh and Turkey were examined in a study by Ahmad & Mamun (2020)<sup>8</sup>, which described FinTech applications as the financial product of the 21st century. Turkey and Bangladesh, which are especially used to represent the two countries affected by the 2008 financial crisis, are among the countries that accelerated the use of FinTech applications by showing high compliance with the banking regulations that took place after the crisis. It has been observed that the use of Sharia-compliant Islamic FinTech applications is increasing day by day in these two countries.

The Islamic FinTech companies in Europe and their products were compared in the study conducted by Demirdöğen (2020)<sup>9</sup>. The fact that the number of Islamic FinTech startups is not high enough is considered to be the biggest obstacle in front of these initiatives in the relevant sector. As a result of the study, it was revealed that the UK, Gulf countries, and especially Malaysia are leading in the number of Islamic FinTechs and that there is not enough convincing information on the websites of companies with Muslim sensitivity in Europe.

Muryanto et al. (2022)<sup>10</sup> stated in their study that Indonesia has great potential to boost economic growth by utilizing Islamic FinTech. They also explained the various challenges to the development of Islamic FinTech. They proposed a comprehensive legal framework to overcome these challenges and promote the growth of the Islamic economy.

3 Julio Bucatinsky, "Management Science Roundup", *Interfaces* 2/4 (1972).

4 Süleyman Kaya, *Kripto Para Birimleri ve Fikhi Açısından Değerlendirilmesi* (Sakarya Üniversitesi: İslam Ekonomisi ve Finans Uygulama ve Araştırma Merkezi, 2018).

5 Nasrul Hakim Ghazali -Takashi Yasuoka, "Awareness and Perception Analysis of Small Medium Enterprise and Start-up Towards Fintech Instruments: Crowdfunding and Peer-to-Peer Lending in Malaysia", *International Journal of Finance and Banking Research* 4/1 (2018), 13-24.

6 Hassnain Ali et al., "Fintech and its potential impact on Islamic banking and finance industry: A case study of Brunei Darussalam and Malaysia", *International Journal of Islamic Economics and Finance (IJIEF)* 2/1 (2019), 73-108.

7 Rashedul Hasan et al., "Fintech and Islamic Finance: Literature Review and Research Agenda", *International Journal of Islamic Economics and Finance (IJIEF)* 3/1 (2020).

8 Syed Magfur Ahmad - Abdullah Al Mamun, "Opportunities of Islamic Fintech: The Case of Bangladesh and Turkey", *CenRaPS Journal of Social Sciences* 2/3 (2020).

9 Yavuz Demirdöğen, "Avrupa'daki İslami Fintek Ekosisteminin Analizi", *Journal of the Faculty of Economics and Administrative Sciences of Süleyman Demirel University* 25/4 (2020).

10 Yudho Taruno Muryanto et al., "Prospects and challenges of Islamic fintech in Indonesia: a legal viewpoint", *International Journal of Law and Management* 64/2 (2022), 239-252.

Rahim et al. (2023),<sup>11</sup> investigated the factors influencing the adoption of Islamic FinTech as part of the digital economy in Malaysia among millennials. As a result of the study, they stated that behavioral intention and facilitating conditions are factors that positively affect the adoption of Islamic FinTech services among millennials in Malaysia.

After reviewing the literature, it is believed that this study will contribute academically to this relatively new field of research by highlighting the potential of Islamic FinTech globally and the obstacles to its development, providing the necessary guidance to investors, regulators, institutions, and academicians.

## 2. ISLAMIC FINANCE

### 2.1. The Concept and Scope of Islamic Finance

Islam is a set of systems that includes the economy and finance subsystems. Being a part of this integrated system, mankind was created in need of each other in order to survive. The economic system has existed since the first human being. For this reason, the Islamic financial system is not a new discipline as it is thought, but a subsystem that has existed since the beginning of humanity.<sup>12</sup>

Islamic finance is a financial system that deals with the distribution of wealth and is considered a way of ensuring justice, equality, equity, and economic balance in society. Muslims in the Islamic financial system are encouraged to maximize their wealth as long as they do not create a situation that creates social distortions or violates Islamic norms of justice. Financial institutions, products and services, instruments, and contracts within Islamic rules are needed in this system. These Islamic financial products are not limited to the Muslim population but can be used by everyone.<sup>13</sup>

The main feature that distinguishes Islamic finance from conventional finance is the prohibition of the application of interest rates (more commonly known as "riba") on debt transactions and the adoption of the profit and loss sharing principle. It is stated in the Qur'an that interest (riba) is strictly prohibited in the following surahs:

"Those who put their money on interest wake up just like the person hit by the devil gets up from sleep. This is because they say, "Shopping is like interest." However, Allah has made trading permissible and has forbidden interest. Whoever receives an instruction from Allah, and the person who receives this instruction gives up interest, his previous treatment is valid for him, and the judgment about him belongs to Allah. Whoever puts money back on interest, they will go to hell and stay there forever."<sup>14</sup>

"Allah reduces the blessings of interest, and makes zakat and sadaqah profitable. Besides, Allah does not love anyone who goes forward in disbelief and persists in sin."<sup>15</sup>

"O you who believe! Fear Allah and leave the remaining interest if you are believers."<sup>16</sup>

"If you do not do so, know that you are fighting against Allah and his Messenger. If you repent of usury, you will have your reward. So that you neither do injustice nor be treated unfairly."<sup>17</sup>

"O you who believe! Do not pay interest by increasing it many times over. Beware of disobeying Allah so that you may prosper."<sup>18</sup>

"In short, the persecution that overflowed from those Jews was due to their forbidding people from the way of Allah, their taking interest even though it was forbidden to them, and their unfairly eating the people's property. We have forbidden some of the pure blessings that were made lawful for them before, and We have prepared a painful punishment for those who remain disbelievers among them."<sup>19</sup>

"Do not forget that even if the other people's money you give for interest increases, it will not increase in the sight of Allah. But the zakat that you give out of desiring Allah's pleasure will be blessed in His presence. Those who do this increase their rewards many times over."<sup>20</sup>

The main sources of the Islamic financial system are the Qur'an, hadith, and sunnah. Other resources are as follows:

- Consensus among religious scholars on issues that are not explicitly mentioned in either the Qur'an or the Sunnah (ijma),
- Drawing conclusions by making comparisons to express an opinion on a subject that is not mentioned in the Qur'an and the Sunnah. (qiyas),
- Independent judgments of fiqh scholars regarding the applicability of certain Islamic rules about situations not mentioned in the Qur'an and Sunnah (ijtihad).<sup>21</sup>

Islamic law, also called fiqh, emerged with the combination of the main sources such as the Qur'an, hadith, sunnah, and other sources such as ijma, qiyas, and ijtihad. Since Islamic law is open to possible interpretations and developments, Islamic finance has kept pace with all periods and will continue to do so.

11 Norafni @ Farlina Rahim et al., "Measurement and structural modelling on factors of Islamic Fintech adoption among millennials in Malaysia", *Journal of Islamic Marketing* 14/6 (2023), 1463-1487.

12 Hasan Kazak - Osman Okka. *İslami Finans Ekonomik Kalkınma ve Sosyal Barış* (Ankara: Nobel Yayınları, 2022), 7.

13 Paolo Pietro Biancone - Maha Radwan, "Sharia compliant 'Possibility for Italian SMEs'", *European Journal of Islamic Finance* 1 (2014), 2.

14 *Kur'an-ı Kerim ve Meâli*, çev. Hayrettin Karaman et al. (Ankara: Diyanet İşleri Başkanlığı Yayınları, 2016), al-Baqara 2/275.

15 al-Baqara 2/276.

16 al-Baqara 2/278.

17 al-Baqara 2/279.

18 Âl 'Imrân 3/130.

19 al-Nisâ' 4/160-161.

20 al-Rûm 30/39.

21 Alsadek H. Gait - Andrew. C. Worthington, *A Primer on Islamic Finance: Definitions, Sources, Principles and Methods* (University of Wollongong: School of Accounting and Finance Working Paper Series, 2007), 4.

The main thing in Islam is to ensure economic development through efficient and effective use of resources, to distribute income fairly according to everyone's contribution, to increase the welfare of the society, to protect the economically disadvantaged sections of the society with methods such as zakat, alms, loans, and other methods and foundations to support them with structures, and to improve the social and behavioral structure of the society in a positive way by ensuring social peace. The main objective of Islamic finance is the efficient use of community resources by companies at the macro level, ensuring economic development and social peace.<sup>22</sup>

## 2.2. Historical Development of Islamic Finance

It is accepted that the Islamic financial system started in the 7th century, when the last prophet of Islam, the Prophet Muhammad lived. Since then, Islamic finance has established a mutual harmonization process in coordinating all financial transactions between Muslims.<sup>23</sup> Since Muslims did not want to make transactions that are haram according to Islamic rules, they sought ways that fit Islam while making their investments. Therefore, the Islamic finance sector realized the preferences of non-Muslims as well as Muslims who wanted to obtain interest-free financing.<sup>24</sup> In this direction, Mit Ghamr Savings Bank, the first Islamic bank, was established in Egypt in 1963. Inspired by the working system of German savings banks, Mit Ghamr aimed to meet the agricultural and commercial needs of small savers in rural areas in Egypt. Although it had a good start, this practice could not be continued for political reasons.<sup>25</sup> This first attempt, however, showed that it was possible to operate within the framework of the principles of Islamic law and accelerated the work in this direction.<sup>26</sup>

The establishment of many large IFIs at the intersection of the rise of pan-Islamism and the oil crisis in the 1970s was considered the beginning of modern Islamic finance. Nasr Social Bank, which was established in Egypt in 1972 as a traditional social bank for the collection and distribution of zakat in the fight against poverty and unemployment and for financing the pilgrimage (to Mecca), was the first modern IFI.<sup>27</sup>

The Islamic Development Bank was established in 1974 to provide financial support to its member countries for their social and economic development. Commercial banking began in the 1970s with the establishment of Dubai Islamic Bank. Since then, IFIs have spread to many parts of the world, including the Middle East, South Asia, East Asia, North Africa, and Europe.<sup>28</sup>

The period between 1975 and 1990 was an important period in the development of the Islamic financial system. In this period, Islamic finance proved to be an alternative financial intermediation model by gaining prestige and reliability in terms of both theoretical developments and practical experiences. While many financial products compatible with Islam were developed, these products had good results in practice when used by Islamic banks. Important multinational banks started to offer Islamic financial products with these developments. In addition, the World Bank and the International Monetary Fund have also recognized Islamic financial products as a real financial intermediation tool and produced documents in this direction. The Islamic banking sector grew at an annual average rate of about 15 percent throughout the 1980s. The number of IFIs, which was two in 1975, exceeded 50 in 1990.<sup>29</sup>

The developing and growing Islamic financial system has necessitated the establishment of certain standards and regulations in this field. In order to meet this need, the "Accounting and Auditing Institution or Islamic Financial Institutions (AAOIFI)" was established in Bahrain in order to issue standards in accordance with Islamic rules required for IFIs.<sup>30</sup>

One of the important developments experienced in the 2000s was that Islamic finance also found an application area in the capital markets. The investors had the opportunity to invest in companies operating within the framework of Islamic finance principles with the worldwide giant institutions such as Dow Jones, FTSE, and S&P.<sup>31</sup>

The need for regulatory authority in the ever-evolving Islamic financial system continued. In this direction, many regulatory institutions, such as the Islamic Financial Services Board (IFSB), the Islamic International Rating Agency (IIRA), the International Islamic Financial Market (IIFM), Arbitration and Reconciliation Center for the Islamic Financial Institutions (ARCIFI), and the General Council of Islamic Banks and Financial Institutions (CIBAFI), have been established.<sup>32 33</sup>

Islamic finance has grown into a gigantic industry, with more than 1000 IFIs (Islamic Finance Institutions) in more than 80 countries with a total value of more than \$2 trillion. Iran, where the entire banking sector is Islamic, constitutes the largest share of its assets.<sup>34</sup>

The Islamic finance field has grown depending on all these efforts and has reached a significant volume by the end of 2021. As of the end of 2021, it reached a volume of approximately US\$ 3.96 billion. The growth trend of the sector is given in the Figure 1.

It cannot be stated that Islamic finance and banking services are equally effective in the entire Islamic community and in all countries. Although there are regional differences, it is seen that especially the Gulf Cooperation Council (GCC) countries have a larger percentage share in the total volume.

22 Kazak - Okka, *İslami Finans Ekonomik Kalkınma ve Sosyal Barış*, 5.

23 Gait - Worthington, *A Primer on Islamic Finance: Definitions, Sources, Principles and Methods*, 5.

24 Ali Saeed Al-Shamrani, *Islamic Financial Contracting Forms in Saudi Arabia: Law and Practice* (Londra: Brunel University A Thesis Submitted for the Degree of Doctor of Philosophy, 2014), 35.

25 Munawar Iqbal - Philip Molyneux, *Thirty Years of Islamic Banking History, Performance and Prospects* (New York: Palgrave Macmillan, 2005), 37.

26 Mehmet Yılmaz - Bilal Bağış, "Türkiye'de İslami Finansın Gelişimi ve Hukuki Yapısı", *İnsan ve Toplum Bilimleri Araştırmaları Dergisi* 9/5 (2020), 3156.

27 Lynda Ouendi, *La finance Islamique face aux défis de la globalisation financière* (Université Mouloud Mammeri de Tizi-Ouzou, 2015), 109.

28 M. Kabir Hassan et al., *Introduction to Islamic Banking and Finance: An Economic Analysis* (World Scientific Publishing Co. Pte. Ltd., 2020), 12.

29 Philip Molyneux - Munawar Iqbal, *Banking and Financial Systems in the Arab World* (New York: Palgrave Macmillan, 2005), 148-149.

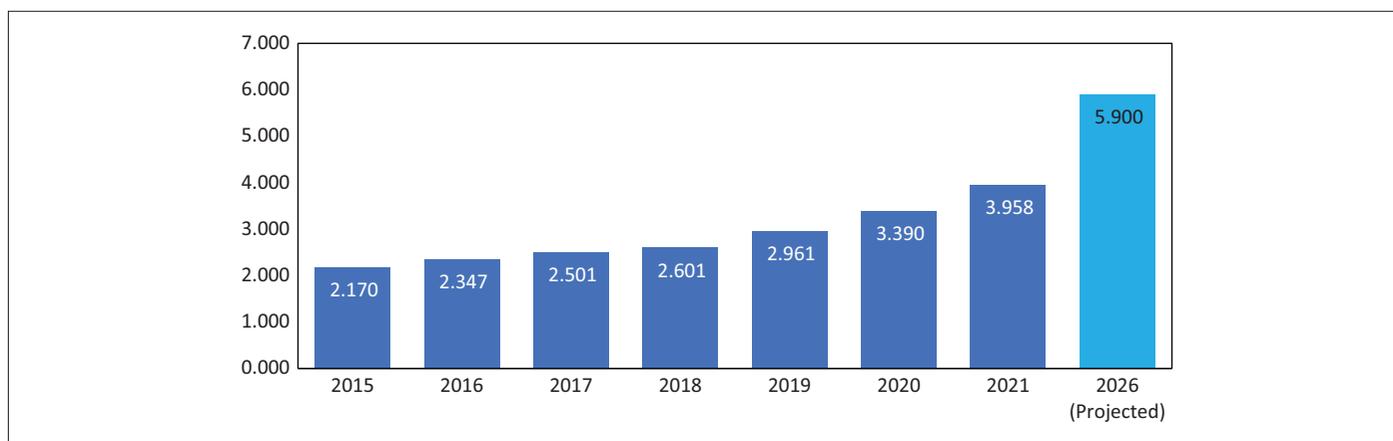
30 *Faizsiz Finans Standartları*, 11.

31 Jill Johns et al. *The Efficiency of Islamic and Conventional Banks in the Gulf Cooperation Council (GCC) Countries: An Analysis Using Financial Ratios and Data Envelopment Analysis* (Lancaster University Management School Working Paper, 2009), 4.

32 Zamir Iqbal - Abbas Mirakhor, *An Introduction to Islamic Finance: Theory and Practice* (Singapur: John Wiley & Sons (Asia) Pte. Ltd., 2011), 17.

33 Fatih Güçlü - Metin Kılıç, "İslami Finansın Dünyadaki Gelişimi ve İslami Finansa Yön Veren Uluslararası Kuruluşlar Üzerine Bir İnceleme", *Uluslararası Yönetim İktisat ve İşletme Dergisi* 16/1 (2020), 79.

34 Ana Belen Soage, "An Overview of Islamic Finance: History, Instruments, Prospects", *Journal of the Sociology and Theory of Religion* 1/9 (2020), 65.



**Figure 1.** Development of Islamic Finance Sector in Recent Years (2015-2021, US\$ billion). Reference: Created by the authors of the study using report data.<sup>35</sup>

**Table 1.**  
Distribution of the Global Islamic Financial Services Industry (IFSI) by Segments and Regions (US\$ Billion, 2021)

Region	Islamic Banking	Sukuk	Islamic Funds Assets	Takaful	Total	Percentage (%)
Gulf Cooperation Council (GCC)	1.212,5	332,3	46,0	12,7	1.603,5	52,4
South-East Asia (SEA)	287,5	390,3	37,5	4,7	720,0	23,5
Middle East and South Asia (MESA)	477,1	26,9	22,0	5,6	531,6	17,4
Africa	58,2	1,8	4,0	0,6	64,6	2,1
Others	68,8	24,4	45,1	0,7	139,0	4,5
Total	2.104,1	775,7	154,6	24,3	3.058,7	100
Percentage (%)	68,7	25,4	5,1	0,8	100	

Reference: Created by the authors of the study using report data.<sup>36</sup>

As can be seen in Table 1 above, approximately 52.4% of global assets in Islamic banks are located in GCC countries. The global share of Southeast Asia in Islamic banking assets is 23.5%, while the global share of the Middle East and South Asia is 17.4%.

The distribution of global Islamic Finance assets by the end of 2021 is as shown in Figure 2.

As can be seen in Figure 2 above, Islamic banking activities have a significant place in global Islamic finance assets. Islamic banking activities are followed by sukuk assets.

Figure 3 above shows the percentage distribution of global Islamic assets by country. As seen in the figure, Saudi Arabia owns 30.6% of global Islamic assets, Iran has 17%, and Turkey has 2.9%.

### 3. FINTECH APPLICATIONS

After the important developments and changes in the technological and digital fields, the increasing transaction volume brought a huge dimension to the money market and created significant changes in the financial markets.

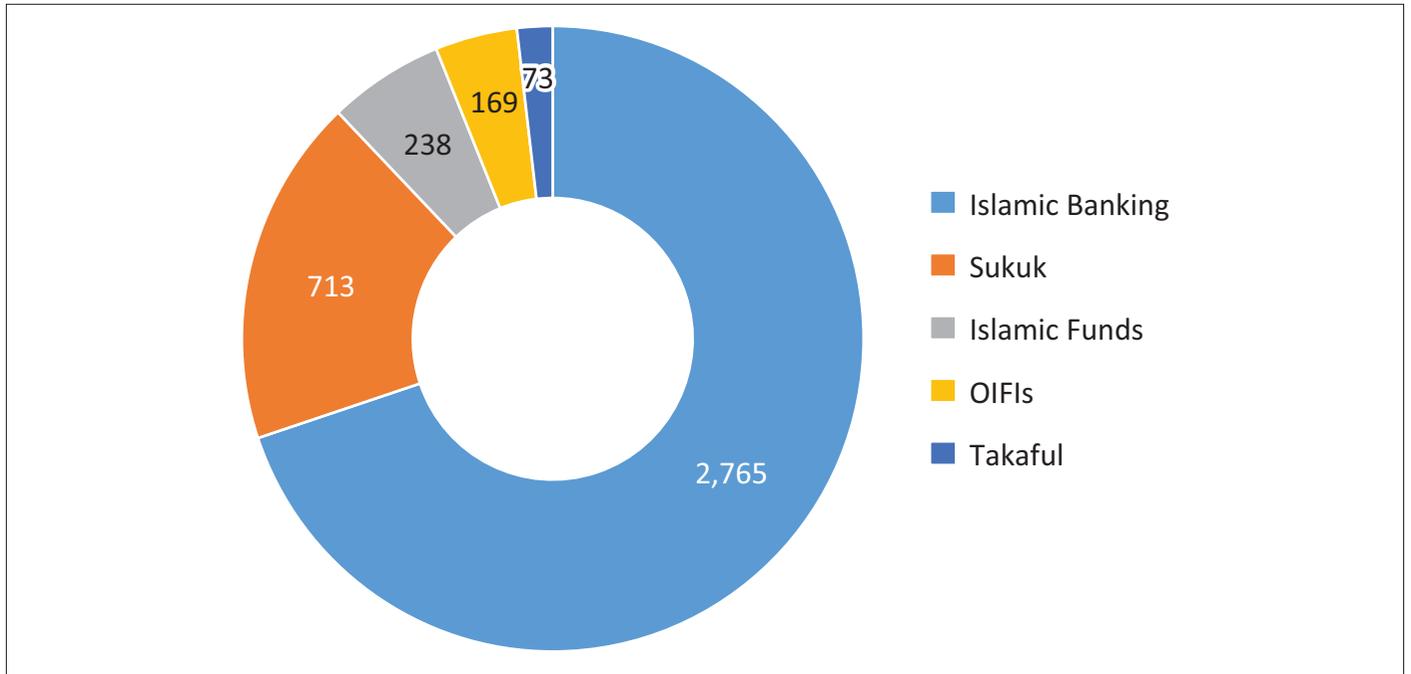
The global effects of the financial crises experienced in 2001 and 2008 brought along new steps for all segments of the economy. After that, important developments in the fields such as blockchain, Big Data, cloud computing, artificial intelligence, and internet of things came to the fore in line with technological advances. In parallel with these developments, FinTech companies emerged. As these companies expanded the existing money market, the increasing supply and demand intensity required new technologies (FinTech applications). When evaluated in this context, it is thought that FinTech applications, which are nominated to be the financial determinants of the 21st century, will be the main center and point of the financial world of the future.<sup>37</sup>

Since 2008, with the increasing attractiveness of the financial sector, the trend has started to shift to sub-sectors, and financial technology elements have become an integral part of everyday life. Looking at the studies on this topic, we can see that the services offered to individuals or companies differ in basic and sub-sectors. When evaluated in this context, it is possible to list these sub-sectors as follows:

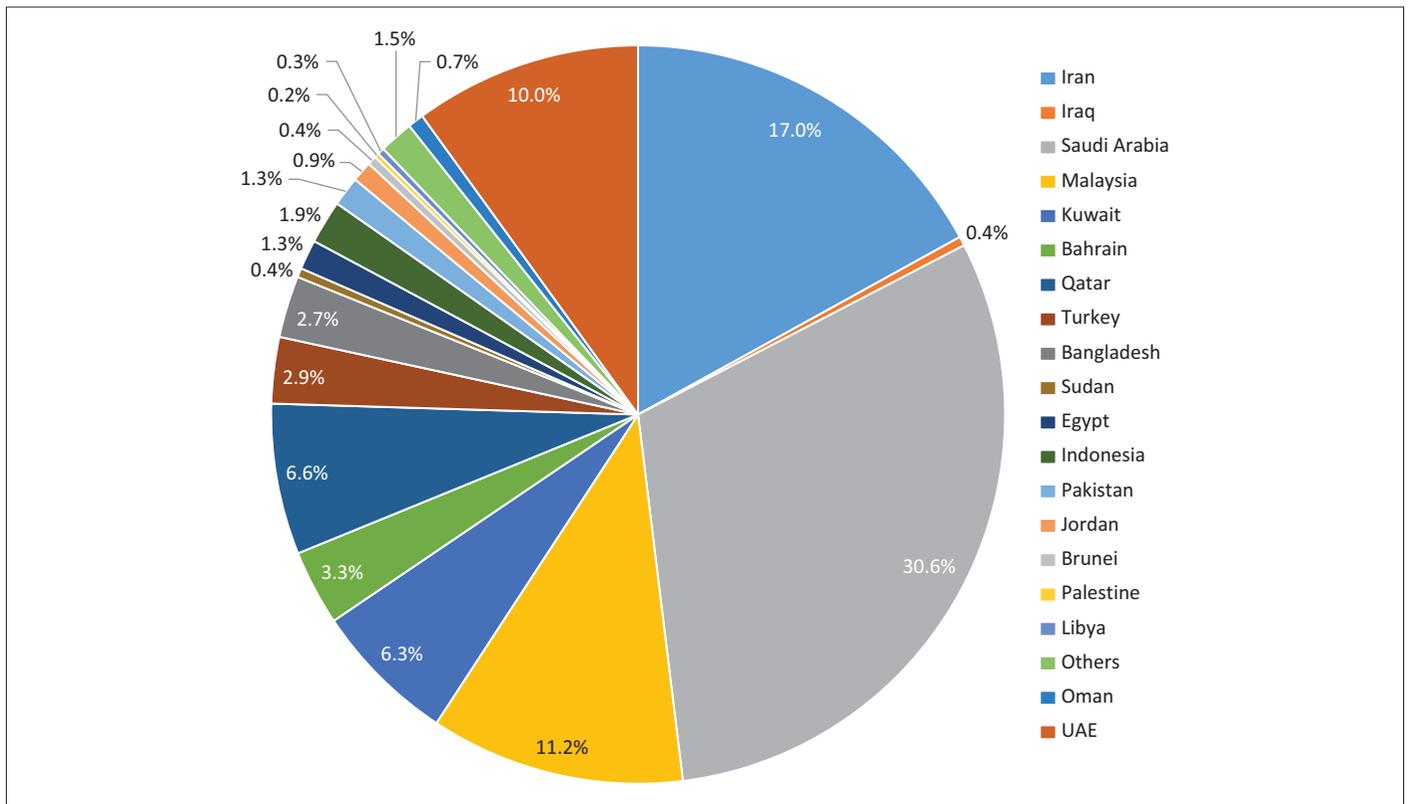
<sup>35</sup> Islamic Finance Development Report 2022 (ICD - Refinitiv, 2022), 8.

<sup>36</sup> Islamic Financial Services Industry Stability Report 2022 (Kuala Lumpur: Islamic Financial Services Board (IFSB), 2022), 12.

<sup>37</sup> Global Fintech Adoption Index 2019 (EY, 2019), 11.



**Figure 2.** Share of Global Islamic Banking Assets (2021, US\$ Billion). Reference: Created by the authors of the study using report data.<sup>38</sup>



**Figure 3.** Share of Global Islamic Banking Assets (2015-2021, US\$ billion). Reference: Created by the authors of the study using report data.<sup>39</sup>

<sup>38</sup> Islamic Finance Development Report 2022, 8.

<sup>39</sup> Islamic Financial Services Industry Stability Report 2022,18.

- Haddad and Hornuf,<sup>40</sup> categorized the sectors in which FinTech applications take place: asset management, clearing services, finance, insurance, loyalty programs, others, payments, regulatory technologies, and risk management.
- Chuang et al.<sup>41</sup> categorized the sectors in which FinTech applications take place: payments, investments, insurance, financial advisory, Big Data analytics, and financial privacy.
- In the study conducted by the Presidential Finance Office,<sup>42</sup> the sectors in which FinTech applications take place are: P2P lending, payments (digital payments, e-money companies, and cross-border payments), personal finance management, blockchain and cryptocurrency, micro insurance, digital banking, financial API economy, crowd finance, money market-focused FinTech models (Robo Advisor, etc.), and RegTech (models that digitize regulations).
- A study conducted in 2020, Startups.watch,<sup>43</sup> the following industries have FinTech applications: payment systems, banking services, financing services, corporate financing services, personal finance management, wealth management, asset management, investment, insurance, crowdfunding, Big Data hubs, platforms, cryptocurrency, etc.

### 3.1. FinTech Concept and Its Historical Development

There are many and various definitions of the concept of FinTech, which is formed by the words finance and technology. FinTechs are defined by the international audit and consultancy firm as all organizations that combine innovative business models and technology to further enable, streamline, expand, and disrupt financial services where necessary.<sup>44</sup> The concept of FinTech is the name given to computer programs and technology applications used by adapting to today's conditions in order to assist banking and financial services directly or indirectly.<sup>45</sup>

FinTech applications are defined as a service sector<sup>46</sup> where mobile-based information systems and advanced technologies are used in order to increase the productivity and impact of the financial system. FinTech applications provide digital and reliable services in many areas, such as banking and mobile banking, asset management, financial consultancy, electronic money transfer, and crypto money. It is possible to classify the historical development stages of the FinTech concept and FinTech applications, which emerged as a result of the integration of finance with technology, as FinTech 1.0, FinTech 2.0, and FinTech 3.0, respectively.

- **FinTech 1.0 Period (1867-1967):** During the First and Second Wars and negative developments such as the Great Depression in this process, people faced great difficulties. The invention of the printing press, which enabled countries around the world to print paper money, is accepted as the first evidence of the transition to fintech technologies. Immediately after this development, the telegraph was invented, and in 1866 and afterward, the international financial system began to take its first steps towards globalization, and the increased use of railways and the invention of steamships played a vital role in the establishment of cross-border financial connections by eliminating existing borders.<sup>47</sup>
- **FinTech 2.0 Period (1967-2008):** As the world started to digitalize in the early 1970s, financial services started to be integrated into the digital transformation. In particular, digital developments such as the first automated teller machine (ATM) in 1967, its widespread use, the introduction of credit cards and internet banking applications, and the global financial crisis in 2008 formed the basis of the Fintech 2.0 period.<sup>48</sup> Nasdaq's invention of electronic trading and IPO in 1971, Carl Reuterskiöld's invention of SWIFT in 1973, Citigroup's establishment of the "Financial Services Technology Consortium" in 1993, and Confinity's launch of PayPal in 1998 were followed by significant and major developments such as the introduction of computers, especially in banks, and the widespread use of the Internet and the start of e-commerce transactions, which were among the firsts and foundations in terms of financial technologies.<sup>49</sup>
- **FinTech 3.0 Era (2008-Present):** After the widespread use of fintech applications, the global and economy-based crisis experienced in 2008 created the 3.0 period of the FinTech applications/sector. In this context, FinTech applications, which have developed significantly, especially after the crisis period, offer significant contributions to the relevant individuals and sectors in terms of easier, faster, and more accurate management of the process. The development and expansion of FinTech applications have contributed to the further expansion of the market as it increases product diversity and participant potential, and this expansion/growth has contributed to the increase in risk diversity as it creates competition.<sup>50</sup> In the FinTech 3.0 period, the introduction and use of blockchain and cryptocurrencies had a shaking effect on the financial world, and with the widespread internet service, the number of financial applications that can be accessed via smartphones has increased, creating a wide resonance in the relevant sector.<sup>51</sup>

FinTech applications bring great convenience and innovations to the financial services sector due to developing technology and digitalization. When evaluated in this context, some of the FinTech applications operate directly on banking transactions. Others, on the other hand, start to interact indirectly as the segments interacting directly or indirectly with banks begin to supply the goods and services they need.<sup>52</sup>

40 Christian Haddad et al., "The Emergence of the Global Fintech Market: Economic and Technological Determinants", *Small Business Economics* 53/1 (2019), 81-105.

41 L. M. Chuang et al., "The Adoption of Fintech Service: TAM Perspective", *International Journal of Management and Administrative Sciences* 3/7 (2016), 1-15.

42 T.C. Cumhurbaşkanlığı Finans Ofisi. "Türkiye Fintek Rehberi". Erişim 13 Eylül 2023. <https://www.cbfo.gov.tr/turkiye-fintek-rehberi-web>

43 Startup.Watch, Türkiye Girişim Ekosistemi 2020 3. Çeyrek. İstanbul, 2020.

44 *EY FinTech Adoption Index 2017: The Rapid Emergence of FinTech* (EY, 2017), 6.

45 Gregor Dorfleitner et al., *The Fintech Market in Germany*. In: *FinTech in Germany* (Cham: Springer, 2017), 6.

46 Yonghee Kim et al. "The Adoption of Mobile Payment Services for "Fintech", *International Journal of Applied Engineering Research* 11/2 (2016), 1058.

47 Oanh Truong, *How Fintech Industry is Changing the World*. Centria (University of Applied Sciences, 2016), 4.

48 Douglas. W. Arner et al. *Fintech and Regtech in a Nutshell, and the Future in a Sandbox* (CFA Institute Research Foundation, 2017), 4-5.

49 IPFC Online Web Agency. "The Incredible Growth of Fintech" [infographic]. 13.09.2023. <http://ipfconline.fr/blog/2018/02/27/the-incredible-growth-of-fintech-infographic/>

50 Nader Naifar, *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability* (USA: IGI Global, 2020), 2.

51 Douglas, *Fintech and Regtech in a Nutshell, and the Future in a Sandbox*, 5.

52 Agustín Rubini, *Fintech Founders Inspiring Tales from the Entrepreneurs that are Changing Finance* (De Gruyter, 2019), 19.

When FinTech applications are summarized in terms of historical development, FinTechs have started to expand the service delivery process by becoming completely digital after the basic developments given below.<sup>53</sup>

- Credit card use in 1950 and after
- ATM services in 1960 and later
- Transitions to the electronic environment in 1970 and later and the beginning of share sales in this environment
- Fundamental milestones such as internet banking, which developed with the speed and prevalence of the internet in 1990 and later
- With all these developments in 2010 and beyond, the transition to robotic processes in financial transactions, especially the use of artificial intelligence technologies and the crypto world
- Introduction of Google Wallet in 2011
- Apple's launch of Apple Pay in 2014
- Creation of the first FinTech undergraduate program in 2016.

### 3.2. FinTech Applications and FinTech Centers in the World and in Turkey

The global financial crisis in 2008 disrupted the development of FinTech technologies. In 2010 and after, FinTech applications started to spread by being applied globally. Almost all sectors have made attempts and efforts to make arrangements to keep up with FinTechs after the said expansion. In this context, it was decided to invest in the field of "startups payment system." Many payment systems such as mobile banking, prepaid cards, wallet payments and applications, payment tracking, offline payments, money transfer, budget management, collection, and POS management have been shifted towards FinTech applications.

The ranking of the 10 most popular FinTech companies in the world in the last quarter of 2022 is given in Table 2.

Based on the table above, the richest and most popular company in the last quarter of 2022 was Stripe in the US. This company provides an important FinTech application that processes online payments. Looking at the other companies in the table, it is possible to state that the reason why they are preferred in FinTech applications is that they are mostly used for making payments. Furthermore, it is seen that cryptocurrency companies are also included in the companies in the table, and these companies mainly use financial technologies.<sup>54</sup>

When we look at FinTech applications in Turkey, the fact that it is in a central location where Asia and Europe intersect has made Turkey important financially, thus enabling it to have an important share in financial and digital developments. While 9% of the population in Turkey was using credit cards at the beginning of the 2000s, the rate of credit card usage rose to 40% with the developing FinTech and digital payment system. In 2006, Turkey became the first country to issue a contactless credit card across Europe.<sup>55</sup>

In Turkey, FinTech was first used as a concept in 2001, and "Fintek Finansal Teknoloji Hizmetleri A.Ş." was established in 2001 to provide information technology services to Ziraat Bank and Halkbank.<sup>56</sup>

In Turkey, there are many sub-sectors in which FinTech companies operate. These sub-sectors are presented in Figure 4.

As of 2022, among the sectors in which FinTech companies operate, it is seen that the payment services sector ranks first in Turkey, as in the rest of the world, which is followed by cryptocurrency applications.<sup>57</sup>

"FinTech İstanbul" Platform was established in 2016 to follow the developments in the field of FinTech in Turkey, to create the infrastructure, and to provide the necessary information. Subsequently, AlBaraka Türk started to provide services in the field of digital transformation and financial technology under the roof of the "Albaraka Tech Global" garage and is on its way to stepping into qualified developments in the field of global participation banking. Moreover, in 2018, the "FinTech Working Group" was established in Turkey under the Systemic Risk Assessment Group with the participation of officials from the Undersecretariat of Treasury, the Banking Regulation and Supervision Agency, the Capital Markets Board, and the Savings Deposit Insurance Fund.<sup>58</sup>

### 3.3. Classification of FinTechs

Companies operating in the fintech sector are divided into three basic groups according to their size and structure. These are startups and small enterprises, unicorn startups, and large FinTech companies.

- **Startups and Small Enterprises:** Startups and small enterprises, which are used to represent companies that are still in the establishment phase or have just completed their establishment, are among the young class using high technology and mainly provide orientation to niche marketing<sup>59</sup> Bitcoin and Blockchain can be given as examples of startups that started to develop after 2014 and have low transaction costs.<sup>60</sup>

53 Douglas, *Fintech and Regtech in a Nutshell, and the Future in a Sandbox*, 4-5.

54 Türk Telekom Ventures, "Fintech Unicornları".

55 Mustafa. M. Akkan, *Dünya'nın Yükselen Yıldızı Fintech Uygulamaları ve Türkiye* (Konya Chamber of Commerce Research Report, 2018).

56 Fintech İstanbul, "2022 yılına ilişkin Türkiye Fintek Ekosistemi Durum Raporu yayımlandı" (Access 13 Eylül 2023).

57 Sait Genç - Recep Ali Küçükçolak, "Türkiye'de Fintek Sektörü", *Working Paper Series* 1/1 (2020), 48-60.

58 Fintech İstanbul, "2022 yılına ilişkin Türkiye Fintek Ekosistemi Durum Raporu yayımlandı".

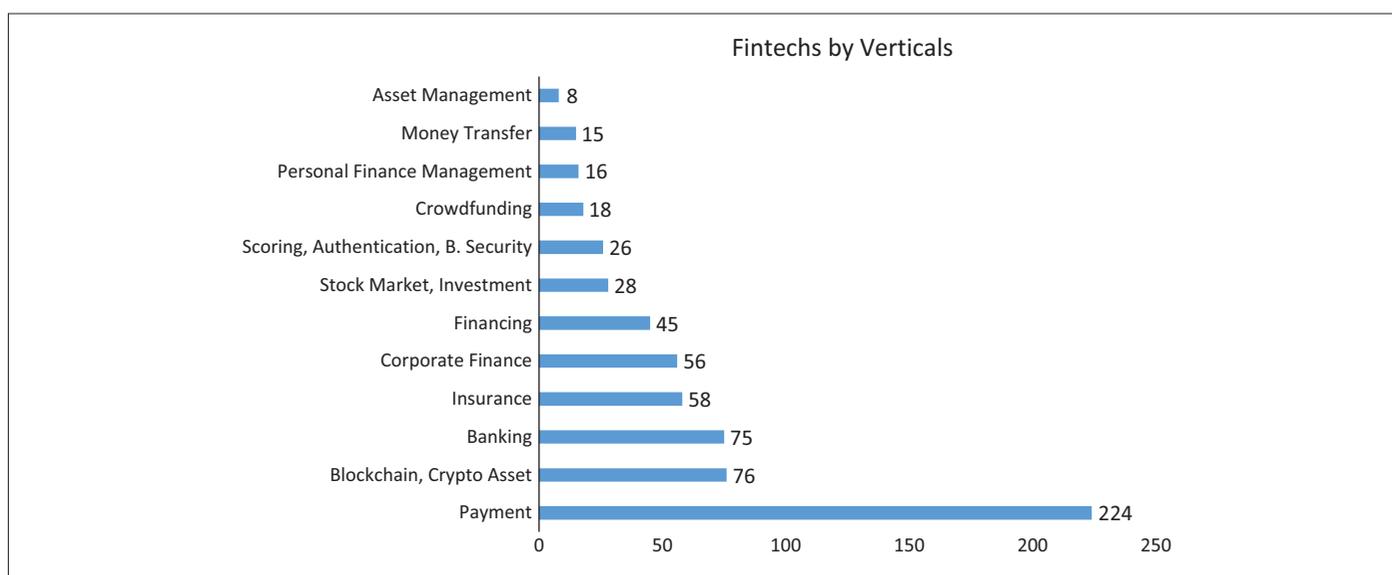
59 Gil Avnimelech - Morris Teubal, "Creating Venture Capital Industries That Co-Evolve with High Tech: Insights from an Extended Industry Life Cycle Perspective of the Israeli Experience", *Research Policy* 35/10 (2006), 1478.

60 David Lee Kuo Chuen - Ernie. G. S. Teo, "Emergence of FinTech and the LASIC Principles", *The Journal of Financial Perspectives: Fintech* 3/3 (2015).

**Table 2.**  
Top 10 FinTech Companies in the Last Quarter of 2022

	Company	2022 2nd Quarter Review (\$Billion)	Country
1	Stripe	95	United States
2	Klarna	45.6	Sweden
3	Checkout.com	40	United Kingdom
4	Revolut	33	United Kingdom
5	FTX	32	Bahamas
6	Chime	25	United States
7	Ripple	15	United States
8	Blockchain.com	14	United Kingdom
9	Plaid	13.5	United States
10	OpenSea	13.5	United States

Reference: Created by the authors of the study using report data.<sup>61</sup>



**Figure 4.**

Number of FinTech Subsectors in Turkey. Reference: Created by the authors of the study using report data.<sup>62</sup>

- **Unicorn Startups:** Unicorn ventures, also referred to as merged/joint (private or public) ventures, are a group of companies operating in the field of technology with a market value of \$1 billion.<sup>63</sup> Companies such as Stripe, One97 Communications, Ripple, Coinbase, and Robinhood are examples of unicorn startups.<sup>64</sup>
- **Large FinTech Companies:** Compared to startups and unicorn startups/enterprises, large FinTech companies refer to companies that are more comprehensive, more experienced, more established, and offer services in different fields. Companies such as PayPal, Visa, Equifax, Lending Club, ACI Worldwide, and S & P Global are examples of large FinTech companies.

#### 4. ISLAMIC FINTECH PRACTICES

Although the development of the FinTech concept is based on many years, the use of this concept in practice and theory has started to become widespread in 2015 and the following years. Islamic FinTechs, which started to make a name for themselves with participation banks, can be defined as the case of an entrepreneurial movement that emerged with the digital transformation of financial services within the framework of Islamic rules and rules.<sup>65</sup>

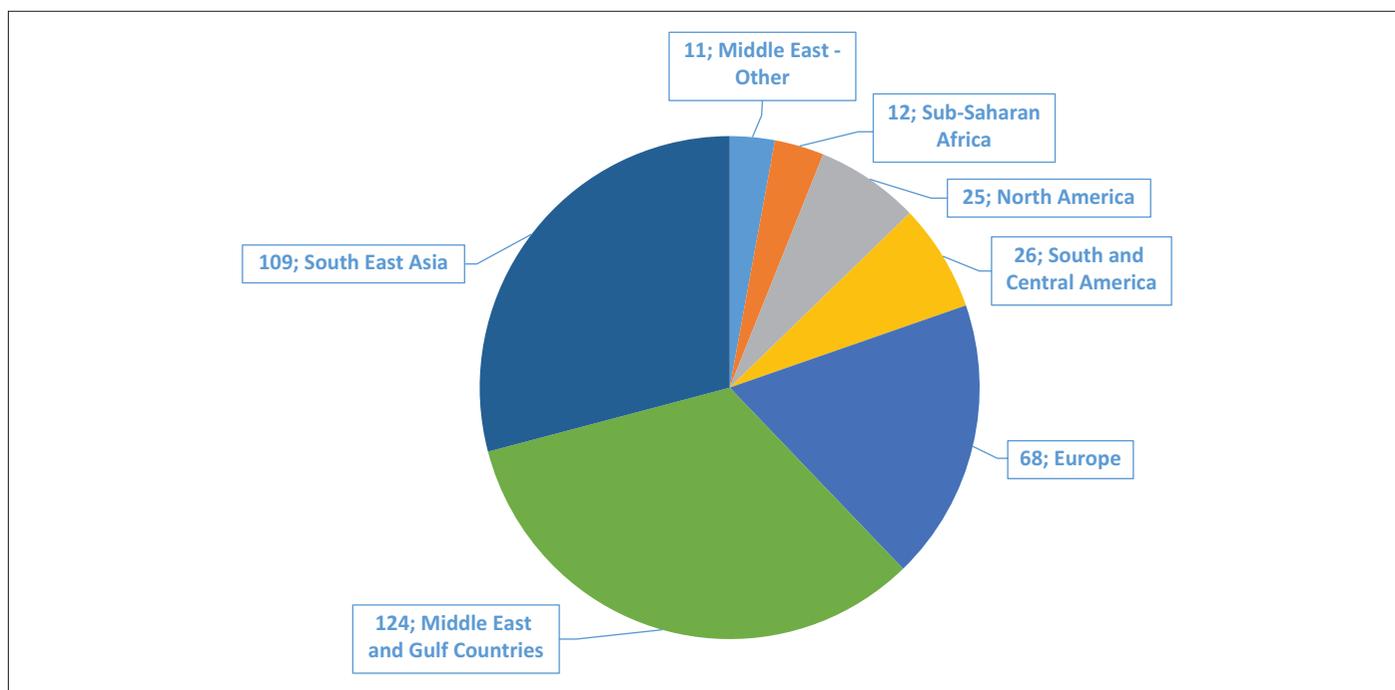
<sup>61</sup> Türk Telekom Ventures, "Fintech Unicornları" (Access 13 Eylül 2023).

<sup>62</sup> *Islamic Financial Services Industry Stability Report 2022* (Kuala Lumpur: Islamic Financial Services Board (IFSB), 2022), 18.

<sup>63</sup> Jamie Pride, *Unicorn Tears: Why Startups Fail and How To Avoid It* (John Wiley & Sons, 2018).

<sup>64</sup> Chuen - Teo, "Emergence of FinTech and the LASIC Principles".

<sup>65</sup> Christoph F. Breidbach et al. "Fintech: Research Directions to Explore the Digital Transformation of Financial Service Systems", *Journal of Service Theory and Practice* 30/1(2020), 79.



**Figure 5.**

*Distribution of Islamic FinTech Companies by Region. Reference: Created by the authors of the study using report data.<sup>66</sup>*

The majority of the countries where Islamic FinTech applications are frequently used are composed of Muslim populations. In addition, Islamic FinTechs are in demand in countries where the population distribution consists of non-Muslim individuals. When evaluated in this context, Islamic FinTech applications are expected to allow serious changes in terms of being open to innovation and appealing to all segments, regardless of Muslim and non-Muslim discrimination<sup>67</sup>.

When Islamic FinTech is analyzed from a regional perspective, Figure 5 shows that there are 124 FinTech companies in the Middle East and Gulf region, 109 in Southeast Asia, and 68 in Europe.

When Islamic financing is analyzed in terms of regional distribution as well as transaction volume, it is possible to state that Muslim countries such as Saudi Arabia, Iran, Malaysia, the United Arab Emirates, Turkey, and Indonesia rank first. Although it is known that Islamic financing is predominantly distributed in Muslim countries, the UK is a pioneer in the field of Islamic financing.<sup>68</sup>

It is known that the transaction volume of the global Islamic FinTech market (2021) is 79 billion dollars, and it is estimated that this volume will reach 179 billion dollars by 2026. The top six OIC FinTech markets by transaction volume for Islamic FinTech are Saudi Arabia, Iran, Malaysia, the UAE, Turkey, and Indonesia.<sup>69</sup>

With the publication of the Global Islamic FinTech (GIFT) 2022 Report, the results included in the report are as follows:<sup>70</sup>

- The GIFT Index ranks the UK among the five most favorable ecosystems for Islamic FinTech.
- The United Kingdom continues to be the second largest Islamic FinTech producer in the world, after Indonesia, which is home to 45 of the 375 globally defined Islamic FinTech companies.
- As a result of the survey of 100 industry practitioners, the biggest barriers faced by Islamic FinTechs are listed as consumer education, access to capital, regulation, access to talent, and cost of customer acquisition.
- The Payments, Deposits, Lending, and Fund Raising service categories continue to show high momentum and represent low expected returns for investors.

#### 4.1. Worldwide Examples of Islamic FinTech Applications

The spread and usage area of Islamic FinTech applications in the world is increasing day by day. In this context, it is possible to classify prominent examples as follows:<sup>71,72</sup>

When we look at the Islamic FinTech applications in the world, it is possible to state that Islamic FinTech applications have become widespread mainly in the Gulf countries but also in countries such as Malaysia, Indonesia, and the UK. There are more than 200 FinTech applications in the world. It is possible to list some of the prominent and widely used ones as follows:

<sup>66</sup> Global Islamic Fintech Report 2022.

<sup>67</sup> Mustafa Raza Rabbani et al. "Fintech, Blockchain and Islamic Finance: An Extensive Literature Review", *International Journal of Economics and Business Administration* 8/2 (2020), 70.

<sup>68</sup> Harris, Irfan - Daniel, Ahmed. *Fintech: The Opportunity for Islamic Finance*. In *Fintech in Islamic Finance* (Routledge, 2019), 19-30.

<sup>69</sup> Global Islamic Fintech Report 2022.

<sup>70</sup> Global Islamic Fintech Report 2022.

<sup>71</sup> Burak Aktürk, *İslami Finansta Finansal Teknoloji (Fintek) Ve Fintek'in Katılım Bankaları Uygulamaları* (İstanbul: Marmara Üniversitesi, Bankacılık ve Sigortacılık Enstitüsü, Yüksek Lisans Tezi, 2021), 56.

<sup>72</sup> Demirdöğen, "Avrupa'daki İslami Fintek Ekosisteminin Analizi", 475-477.

- **Yielders:** The field of activity and practice of Yielders, which was first established in England, is the pioneer of an innovative entrepreneurship sector that includes the principles of real estate purchase and rental income sharing.
- **EthisCrowd:** EthisCrowd, the first Islamic crowdfunding platform launched in Singapore, is an initiative under the name of real estate Islamic FinTech, which has a great importance in *allocating suitable housing and focuses on social responsibility projects*.
- **Kapital Boots:** Capital Boost initiative, based in Singapore and based on usury and partnership methods, is an Islamic crowdfunding platform established to provide support to SMEs who need financing to expand their existing businesses.
- **Scola Fund:** Scola Fund, a platform that was first implemented in Malaysia and established to provide scholarship support to students in need, is an Islamic FinTech initiative that establishes networks in 30 countries.
- **Beehive:** The Beehive initiative, which was first implemented in the United Arab Emirates and provides services as an online market, allows SMEs with high potential to meet with angel investors.
- **570Easi:** Providing financial solutions and investment engineering services, this company, founded in France, first offered professional legal consultancy services in 2012. In recent years, it has been offering home loans in many countries through Murabaha financing.
- **DDCap:** This company, founded in the UK and later expanded to London, Dubai, and Kuala, has established its own Sharia supervisory board and offers services in the field of Sharia-compliant products.
- **Halal Launcher:** The company, founded in the UK as a halal and multi-crowdfunding platform, invests in halal projects and ideas.
- **Inaia:** This Germany-based company, which has been providing financial technological services and Sharia consultancy services based on Islamic finance criteria since 2007, started offering physical gold savings services in 2012.
- **Islamic Finance Guru:** Founded in 2015 and based in the UK, the company provides halal investment, Islamic mortgages, and funding services to individuals and corporate clients in need. It also offers all types of syndicated transactions/investments for Sharia-compliant start-ups.
- **Kestrl:** This digital banking company operates through the Bank of England and offers interest-free payment and asset management services in accordance with ethical values.
- **QardHasan:** Founded in 2015 to support students online, this system offers interest-free student loans for Muslim students. It is based in London, with offices in Dubai, New York, and Toronto.
- **Menapay:** This company, the first Turkish FinTech startup to receive investment from CoinShares Ventures, offers money transfer and payments, crypto buy/sell, token wallet, token storage, and management services in Turkey.

## CONCLUSION

Living in a digital and global world, the instantaneous realization and reflection of extraordinary changes and developments on the market, the increasing number of young people who are sensitive to technology, and the increasing Muslim population around the world have increased the demand for FinTechs and Islamic FinTechs.

FinTechs, which are nominated to be the financial determinants of the 21st century, offer important services to meet the increasing need by diversifying their products. These developments are used not only by Islamic FinTechs, which are designed with Islamic sensitivities at the center, but also by banks that continue their normal operations.

Today, although the majority of Islamic FinTech applications and services are found in Muslim countries, it is seen that they have recently started to be in demand and provide services in non-Muslim countries. However, if this service is to survive and achieve permanence in the long term, it needs to increase its level of competence and inclusiveness (interest restriction, reaching non-Muslim customers, social aspect, etc.) and affect not only the Muslim community but also non-Muslim communities.<sup>73</sup>

Although Islamic FinTech is a current and incompletely developed practice, it is observed that it is implemented in a much more effective and systematic/programmed manner in European countries, while its implementation in Turkey has just begun albeit in small numbers.

One of the most important and fundamental steps for the growth of Islamic finance will undoubtedly be Islamic FinTech. Therefore, for the development of both the existing financial technology structure and the Islamic finance market, FinTech companies have and will continue to play a key role.<sup>74</sup>

Although Islamic FinTech applications have come a long way in a short time, some gains due to Islamic sensitivity have been abandoned. Therefore, it is not an effective, comprehensive, and intensively applied system. It is possible to express these forgone earnings as follows:

- Commercial losses arising from not being able to earn interest-based profits due to being against interest,
- Earnings losses due to not investing in every market (investment areas involving luck and uncertainty, secondary markets, etc.) or being selective in investments due to the violation of Shariah matters,
- Failure to invest in every sector, as it is found to be contrary to the Shariah issues (food sectors containing pork products, sectors providing alcohol and gambling services, sectors producing weapons-based war technology, etc.), is also among the important reasons for capital losses.

73 İrfan, "Fintech: The Opportunity for Islamic Finance", 25.

74 Demirdöğen, "Avrupa'daki İslami Fintek Ekosisteminin Analizi", 480.

In addition to the reasons listed above, the fact that some scholars are suspicious of the subject in terms of Islamic ruling and that a clear evaluation and distinction cannot be made at the point of halal and haram are among the most basic problems that need to be solved in order to develop the concept and practice.

Another issue is the need to provide Islamic FinTech literacy training to increase the awareness of Islamic FinTech in society. In conclusion, given the ever-increasing impact of digitalization in our lives, it is inevitable that the Islamic FinTech system will exist in the future. The opportunities in this system should be seized, and market share should be increased by eliminating the shortcomings and abuses in this area.<sup>75</sup>

In future studies, the situation of Islamic FinTech in Islamic countries can be presented with comparative tables. Moreover, the predictions of the 2030s, when Islamic FinTech is predicted to be effective, can be discussed.

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## REFERENCES

- Ahmad, Syed Magfur - Al Mamun, Abdullah. "Opportunities of Islamic Fintech: The Case of Bangladesh and Turkey". *CenRaPS Journal of Social Sciences* 2/3 (2020), 412–426.
- Akkan, Mustafa. M. *Dünya'nın Yükselen Yıldızı Fintech Uygulamaları ve Türkiye*. Konya Chamber of Commerce Research Report, 2018.
- Aktürk, Burak. *İslami Finansa Finansal Teknoloji (Fintek) ve Fintek'in Katılım Bankaları Uygulamaları*. İstanbul: Marmara Üniversitesi, Bankacılık ve Sigortacılık Enstitüsü, Yüksek Lisans Tezi, 2021.
- Al-Shamrani, A. Saeed. *Islamic Financial Contracting Forms in Saudi Arabia: Law and Practice*. Londra: Brunel University A Thesis Submitted for the Degree of Doctor of Philosophy, 2014.
- Arner, Douglas. W. et al. *Fintech and Regtech in a Nutshell, and the Future in a Sandbox*. CFA Institute Research Foundation, 2017.
- Avnimelech, Gil - Teubal, Morris. "Creating Venture Capital Industries That Co-Evolve with High Tech: Insights from an Extended Industry Life Cycle Perspective of the Israeli Experience". *Research Policy* 35/10 (2006), 1477–1498.
- Biancone, Paolo Pietro - Radwan, Maha. "Sharia compliant "Possibility for Italian SMEs"". *European Journal of Islamic Finance* 1 (2014), 1–9.
- Breidbach, Christoph F. et al. "Fintech: Research Directions to Explore the Digital Transformation of Financial Service Systems". *Journal of Service Theory and Practice* 30/1 (2020), 79–102.
- Bucatsinsky, Julio. "Management Science Roundup". *Interfaces* 2/4 (1972), 62–85.
- Chuen, David Lee Kuo - Teo, Ernie. G. S. "Emergence of FinTech and the LASIC Principles". *The Journal of Financial Perspectives: Fintech* 3/3, (2015).
- Demirdöğen, Yavuz. "Avrupa'daki İslami Fintek Ekosisteminin Analizi". *Journal of the Faculty of Economics and Administrative Sciences of Süleyman Demirel University* 25/4 (2020), 469–481.
- Dorfleitner, Gregor et al. The Fintech Market in Germany. In: *FinTech in Germany*. Cham: Springer, (2017). [https://doi.org/10.1007/978-3-319-54666-7\\_4](https://doi.org/10.1007/978-3-319-54666-7_4).
- EY FinTech Adoption Index 2017: The Rapid Emergence of FinTech. EY: [https://www.ey.com/Publication/vwLUAssets/ey-fintechadoption-index-2017/\\$FILE/ey-fintech-adoption-index2017.pdf](https://www.ey.com/Publication/vwLUAssets/ey-fintechadoption-index-2017/$FILE/ey-fintech-adoption-index2017.pdf), 2017.
- Faizsiz Finans Standartları. İstanbul: TKBB Publications, 2015.
- Gait, Alsadek H. - Worthington, Andrew. C. *A Primer on Islamic Finance: Definitions, Sources, Principles and Methods*. University of Wollongong: School of Accounting and Finance Working Paper Series, 2007.
- Global Fintech Adoption Index 2019. EY: [https://www.ey.com/en\\_gl/ey-global-fintech-adoption-index](https://www.ey.com/en_gl/ey-global-fintech-adoption-index), 2019.
- Global Islamic Fintech Report 2022. [https://fiskal.kemenkeu.go.id/aifc2022/seminar-files/view-berkas?id=31&nama=Docs\\_20220823\\_islamic\\_fintech\\_optimization\\_in\\_msmes\\_financing\\_e.pdf](https://fiskal.kemenkeu.go.id/aifc2022/seminar-files/view-berkas?id=31&nama=Docs_20220823_islamic_fintech_optimization_in_msmes_financing_e.pdf).
- Güçlü, Fatih - Kılıç, Metin. "İslami Finansın Dünyadaki Gelişimi ve İslami Finansa Yön Veren Uluslararası Kuruluşlar Üzerine Bir İnceleme". *Uluslararası Yönetim İktisat ve İşletme Dergisi* 16/1 (2020), 75–91.
- Hasan, Rashedul et al. "Fintech and Islamic Finance: Literature Review and Research Agenda". *International Journal of Islamic Economics and Finance (IJIEF)* 3/1 (2020), 75–94.
- Hassan, M. Kabir et al., *Introduction to Islamic Banking and Finance: An Economic Analysis*. World Scientific Publishing Co. Pte. Ltd., 2020.
- Iqbal, Munawar - Molyneux, Philip. *Thirty Years of Islamic Banking History, Performance and Prospects*. New York: Palgrave Macmillan, 2005.

75 BahattinErden- Bora Topal, "Türkiye'de ve Dünyada İslami Fintek sektörünün gelişimi", *Arđahan Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi* 3/1 (2021), 75

- Iqbal, Zamir - Mirakhor, Abbas. *An Introduction to Islamic Finance: Theory and Practice*. Singapur: John Wiley & Sons (Asia) Pte. Ltd., Second Edition, 2011.
- Islamic Finance Development Report 2022. *ICD - Refinitiv*, 2022. [https://icd-ps.org/uploads/files/ICD%20Refinitiv%20ifdi-report-20221669878247\\_1582.pdf](https://icd-ps.org/uploads/files/ICD%20Refinitiv%20ifdi-report-20221669878247_1582.pdf).
- Islamic Financial Services Industry Stability Report 2022*. Kuala Lumpur: Islamic Financial Services Board (IFSB), 2022.
- IPFC Online Web Agency. "The Incredibly Growth of Fintech" [infographic]. 13.09.2023. <http://ipfconline.fr/blog/2018/02/27/the-incredible-growth-of-fintech-infographic/>
- Johnes, Jill et al. *The Efficiency of Islamic and Conventional Banks in the Gulf Cooperation Council (GCC) Countries: An Analysis Using Financial Ratios and Data Envelopment Analysis*. Lancaster University Management School Working Paper, 2009.
- Kaya, Süleyman. *Kripto Para Birimleri ve Fıkhi Açından Değerlendirilmesi*. Sakarya Üniversitesi: İslam Ekonomisi ve Finans Uygulama ve Araştırma Merkezi, 2018.
- Kazak, Hasan - Okka, Osman. *İslami Finans Ekonomik Kalkınma ve Sosyal Barış*. Ankara: Nobel Yayınları, 2022.
- Kim, Yonghee et al. "The Adoption of Mobile Payment Services for "Fintech". *International Journal of Applied Engineering Research* 11/2 (2016), 1058–1061.
- Kur'an-ı Kerim ve Meâli*, çev. Hayrettin Karaman et al. Ankara: Diyanet İşleri Başkanlığı Yayınları, 1. Basım, 2016.
- Molyneux, Philip - Iqbal, Munawar. *Banking and Financial Systems in the Arab World*. New York: Palgrave Macmillan, 2005.
- Naifar, Nader. *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability*. USA: IGI Global, First edition, 2020.
- Okka, Osman – Kazak, Hasan. *İslami Finansal Yönetim - Sistem ve Uygulama (Konvansiyonel Finansla Mukayeseli)*. Ankara: Nobel Yayınları, 2020.
- Ouendi, Lynda. *La finance Islamique face aux défis de la globalisation financière*. Université Mouloud Mammeri de Tizi-Ouzou, (2015).
- Pride, Jamie. *Unicorn Tears: Why Startups Fail and How to Avoid It*. John Wiley & Sons, 2018.
- Rabbani, Mustafa Raza et al. "Fintech, Blockchain and Islamic Finance: An Extensive Literature Review". *International Journal of Economics and Business Administration* 8/2 (2020), 65–86. <https://doi.org/10.35808/ijeba/444>.
- Rubini, Agustin. *Fintech Founders Inspiring Tales from the Entrepreneurs that are Changing Finance*. De Gruyter, 2019.
- Soage, Ana Belen. "An Overview of Islamic Finance: History, Instruments, Prospects". *Journal of the Sociology and Theory of Religion* 1/9 (2020), 60–81.
- Truong, Oanh. *How Fintech Industry is Changing the World*. Centria University of Applied Sciences, (2016).
- Yılmaz, Mehmet - Bağış, Bilal. "Türkiye'de İslami Finansın Gelişimi ve Hukuki Yapısı". *İnsan ve Toplum Bilimleri Araştırmaları Dergisi* 9/5 (2020), 3148–3173.
- Ghazali, Nasrul Hakim - Yasuoka, Takashi. "Awareness and Perception Analysis of Small Medium Enterprise and Start-up Towards Fintech Instruments: Crowdfunding and Peer-to-Peer Lending in Malaysia". *International Journal of Finance and Banking Research* 4/1 13 (2018).
- Ali, Hassnain et al. "Fintech and its potential impact on Islamic banking and finance industry: A case study of Brunei Darussalam and Malaysia". *International Journal of Islamic Economics and Finance (IJIEF)* 2/1 (2019), 73–108. <https://doi.org/10.18196/ijief.2116>.
- Haddad, C. et al. "The Emergence of the Global Fintech Market: Economic and Technological Determinants". *Small Business Economics* 53/1 (2019), 81–105.
- Chuang, L. M. et al. "The Adoption of Fintech Service: TAM Perspective". *International Journal of Management and Administrative Sciences* 3/7 (2016), 1–15.
- Startup.Watch, Türkiye Girişim Ekosistemi 2020 3. Çeyrek. İstanbul, 2020.
- T.C. Cumhurbaşkanlığı Finans Ofisi. "Türkiye Fintek Rehberi". Access 13 Eylül 2023. <https://www.cbfo.gov.tr/turkiye-fintek-rehberi-web>
- Rahim, Norafni @ Farlina et al. "Measurement and structural modelling on factors of Islamic Fintech adoption among millennials in Malaysia". *Journal of Islamic Marketing*, 14/6 (2023), 1463–1487.
- Irfan, Harris - Ahmed, Daniel. Fintech: The Opportunity for Islamic Finance. In *Fintech in Islamic Finance*. Routledge, 2019, 19–30.
- Muryanto, Yudho Taruno et al. "Prospects and Challenges of Islamic Fintech in Indonesia: A Legal Viewpoint". *International Journal of Law and Management* 64/2 (2022), 239–25.
- Erden Bahattin - Topal Bora. "Türkiye'de ve Dünyada İslami Fintek Sektörünün Gelişimi". *Ardahan Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi* 3/1 (2021), 69–75.
- Genç, Sait - Küçükçolak, Recep Ali. "Türkiye'de Fintek Sektörü". *Working Paper Series* 1/1 (2020), 48–60.
- Fintech İstanbul. "2022 yılına ilişkin Türkiye Fintek Ekosistemi Durum Raporu yayımlandı". Access 13 Eylül 2023. <https://fintechistanbul.org/2023/03/15/2022-yilina-iliskin-turkiye-fintek-ekosistemi-durum-raporu-yayimlandi/>
- Türk Telekom Ventures. "Fintech Unicornları". 13 Eylül 2023. <https://www.turktelekomventures.com.tr/fintech-unicornlari>

## GENİŞLETİLMİŞ ÖZET

Bu çalışmanın amacı, Fintek ve İslami Fintek uygulamalarına kavramsal açıdan yer vermek ve söz konusu iki kavrama ilişkin yapılan literatür çalışmalarına değinilerek İslami Finans kavramını dini açıdan ele almaktır.

İslami finansı anlamak için İslam dinini anlamak gerekir. İslamiyet, diğer dinlerden farklı olarak ekonomik meseleleri; ahlaki düzeyde ele alan, standartlaştıran, uygulayan ve sosyal ve ekonomik eşitliği savunan bir sistemdir. Ekonomik büyüme, kalkınma ve sosyal barış İslam'da birinci derecede önem arz etmektedir. İslam'da esas olan, kaynakların verimli ve etkili kullanımıyla ekonomik kalkınmayı sağlamak, geliri herkesin katkısına göre adil bir şekilde dağıtmak, toplumun refahını artırmak, toplumun ekonomik açıdan dezavantajlı kesimlerini zekat, sadaka, karz gibi yöntemlerle korumak ve diğer yöntemler ve vakıflar vb. yapılarla onları desteklemek ve sosyal barışın sağlanmasıyla toplumun sosyal ve davranışsal yapısını olumlu yönde geliştirmektir. Makro düzeyde bakıldığında, İslami finansın temel hedefinin toplum kaynaklarının şirketler tarafından verimli kullanılması, ekonomik kalkınmanın sağlanması ve toplumsal barışın sağlanması olduğu söylenebilir.

İslami finans; toplumda adalet, eşitlik, hakkaniyet ve ekonomik dengeyi sağlamanın bir yolu olarak servetin dağılımıyla ilgilenen bir finansal sistemdir. İslami finans sisteminde müslümanlar, sosyal bir çarpıklık yaratan veya İslami adalet normlarını ihlal eden bir durum yaratmadıkları sürece, servetlerini maksimize etmeye teşvik edilirler. Bu sistemde, İslami kurallar dahilinde finansal kurumlara, ürün ve hizmetlere, enstrümanlara ve sözleşmelere ihtiyaç duyulmakta ve bu İslami finans ürünleri, sadece müslüman nüfusla sınırlı olmayıp herkes tarafından kullanılabilir. Temel kaynaklar olan Kur'an-ı Kerim, hadis, sünnet ve diğer kaynaklar olan icma, kıyas ve içtihatın bir araya gelmesiyle fıkıh olarak da adlandırılan İslam hukuku ortaya çıkmıştır. İslam hukuku olası yorumlara ve gelişmelere açık olduğu için İslami finans da bütün devirlere ayak uydurarak devam etmiş ve bundan sonra da devam edecektir. İslami finans ve bankacılık hizmetlerinin tüm İslam toplumunda ve tüm ülkelerde aynı ölçüde etkin olduğu söylenemez. Bölgesel farklılıklar söz konusu olmakla birlikte özellikle Körfez İş Birliği Konseyi ülkelerinin toplam hacim içerisinde yüzdesel olarak daha büyük bir paya sahip olduğu görülmektedir. İslami finans varlıklarında İslami bankacılık faaliyetleri önemli ölçüde büyük bir yer tutmaktadır. Hemen ardından gelen hacim sukuk varlıklarına aittir. Küresel İslami varlıkların ülkeler bazında yüzdesel dağılımına bakıldığında, Suudi Arabistan küresel İslami varlıkların %30,6'sına, İran %17'sine sahip iken Türkiye %2,9'una sahiptir.

Konvansiyonel (geleneksel) finans sisteminin temelini oluşturan faizin İslam dininde haram olması müslüman kesimin ayrı bir finans sistemi oluşturmasına sebep olmuştur. İslami finans olarak adlandırılan bu sistem, İslami kurallar doğrultusunda sadece İslam ülkelerinde değil dünyanın çeşitli yerlerinde farklı segmentlerdeki finansal kurum ve ürünleriyle sürekli büyümektedir. İslami finansın bu büyüme potansiyeline ivme kazandırmak için İslami etik ilkeler dâhilinde daha çok çeşitliliğe ihtiyaç duyulmaktadır. Dijitalleşmenin ve teknolojinin her geçen gün hayatımızın ayrılmaz birer parçası olması, finansal teknolojilere duyulan talebi artırmıştır. Söz konusu talebe olan rağbetin artmasının önemli sebepleri arasında yer alan ve öne çıkan gelişmelerden birisi de İslami finans uygulamalarıdır. En büyük yemek şirketinin restoranının olmadığı, en büyük mağaza şirketinin mağazasının bulunmadığı, en büyük konaklama şirketinin ise otel sahibi olmadığı bir atmosferde, dijitalleşmenin yarattığı değişim, dönüşüm ve hızla finansal teknoloji uygulamalarının da ciddi bir şekilde ayak uydurarak gelişme gösterdiği görülmektedir.

Fintek kavramının gelişimi çok uzun yıllara dayanmasına rağmen kavram adından söz ettiren İslami Fintek kavramının uygulamada ve teoride yer edinmesi 2015 ve sonrasında ki yıllarda yaygınlaşmaya başlamıştır. Özellikle katılım bankaları ile birlikte adında söz ettirmeye başlayan İslami Fintekler, finansal hizmetlerin dijital dönüşümü ile ortaya çıkan bir girişim hareketinin, İslami kaideler ve kurallar çerçevesinde yapılması durumu olarak tanımlanabilmektedir. İslami Fintek uygulamalarının sıklıkla kullanıldığı ülkelerin büyük çoğunluğunu, nüfusunun Müslüman olduğu kesimler oluşturmaktadır. Buna ilaveten nüfus dağılımını gayri müslim bireylerin oluşturduğu ülkelerde de İslami Fintekler rağbet görmeye ve uygulanmaya başlamaktadır. Bu kapsamda değerlendirildiğinde müslim-gayri müslim ayrımı gözetmeksizin İslami Fintek uygulamalarının yeniliğe açık olması ve her kesime hitap edebilmesi açısından ciddi değişikliklere izin vermesi beklenmektedir. Küresel İslami Fintech pazarının işlem hacminin (2021) 79 milyar dolar olduğu ve 2026 yılına kadar 179 milyar dolara ulaşacağı tahmin edilmektedir. İslami Fintek için işlem hacmine göre ilk altı OIC Fintek pazarını; Suudi Arabistan, İran, Malezya, BAE, Türkiye ve Endonezya oluşturmaktadır.

Fintek konusunda yapılan ve incelenen çalışmaların büyük çoğunluğunun, Fintek kavramının ve uygulamalarının teorik ve tarihsel gelişim açısından incelendiğini ve özellikle katılım bankacılığını temsilen kullanılan İslami finans ile bağdaştırılarak etkisinin incelendiği görülmektedir. İslami Fintek'ler, güncel ve gelişmesini tamamlamamış bir uygulama olmasına karşın Avrupa ülkelerinde çok daha etkin ve sistemli/programlı bir şekilde uygulandığı görülürken Türkiye'de henüz tam anlamıyla kapsamlı bir uygulamasının olmadığını ifade etmek mümkündür. İslami Fintek uygulamaları kısa sürede önemli mesafeler kat etmesine karşın İslami hassasiyet merkeze alınmasından kaynaklı bir takım kazançlardan vazgeçildiğinden etkin, kapsamlı ve yoğun bir şekilde uygulanan bir sistem değildir. İslami hüküm açısından da bazı âlimlerin konuya şüpheli bakmaları, helal/haram noktasında net bir değerlendirme ve ayırım yapılamaması durumları kavramın ve uygulamanın gelişebilmesi için çözümlenmesi gereken en temel problemler arasında yer almaktadır.

Bu kapsamda değerlendirildiğinde İslami finans sisteminin özellikle uygulama aşamasında Fintek uygulamalarına/teknolojilerine ciddi anlamda ihtiyaç duyması nedeniyle bu çalışmada söz konusu iki kavrama, teorik değerlendirme ve tanım açısından yer verilmiş ve konulara ilişkin yapılan çalışmalar incelenmiştir. Çalışma sonucunda, İslami finansın fıkhi açıdan belirsizlikler içerdiği, uygulama açısından Fintek sisteminin uygulama ihtiyacını yeterli seviyede karşıladığı ve İslami finansı temsilen çoğunlukla katılım bankalarının kullanıldığı görülmüştür.