

APPLICATION OF EMERGING FINTECH IN ISLAMIC FINANCE INDUSTRY: CHALLENGES AND OPPORTUNITIES IN GCC COUNTRIES

Md Fouad Bin Amin^{1*}

¹Department of Economics, Islamic Banking Center (IBC)

College of Business Administration, King Saud University, Riyadh, Saudi Arabia,

*Email: fbinamin@ksu.edu.sa or fouad.econsu@gmail.com

ABSTRACT

This paper discusses FinTech, a rapidly developing sector, with an emphasis on how it fits into Islamic banking. First of all, it offers a thorough grasp of FinTech and its guiding concepts. The conversation then turns to the nexus between Islamic finance and FinTech, emphasizing how these developments are balancing with Sharia-compliant financial practices. An international summary of the state of Islamic FinTech is provided, highlighting noteworthy global trends and advancements. This paper explores the FinTech evolution in the Gulf Cooperation Council (GCC) area. It shows some challenges of such as, talent shortage, cybersecurity, lack of standardization, operational problems, Non-compliance with regulations, and financial and investment obstacles. This paper also highlights some opportunities of Islamic FinTech in some sectors like back office, capital markets, insurance, social finance, and technology providers. The study suggests that each member states under GCC should invest in specialized human resource programs related to Islamic FinTech sector, harmonize among stakeholder through collaboration, regulatory adjustments, and technological integration, integrate the Shariah law with the region, and accumulate of specialized investment funds to foster the growth of Islamic FinTech.

Keywords: Challenges, FinTech, FinTech Wave, GCC, Islamic FinTech, Opportunities.

INTRODUCTION

Over the last few years, financial technology (FinTech) has turned into a revolutionized global financial landscape with the integration of advanced technologies and traditional financial services. This revolution has made financial services more efficient, accessible, and user-friendly. On other hand, the adoption of FinTech in Islamic finance, which is based on Sharia principles promoting risk-sharing and ethical investing without interest (riba), has opened new avenues for innovation, particularly serving the specific needs of the Muslim population. Islamic FinTech industry is growing rapidly worldwide. Its transaction volumes are estimated to reach \$179 billion by 2026 with a 17.9% compound annual growth rate. The UAE, the UK, Malaysia, Saudi Arabia, Indonesia, and other key areas are driving this expansion. For instance, in Saudi Arabia, the number of FinTech companies has increased dramatically, from 51 in 2021 to 200 by the middle of 2023 (Global Islamic Fintech Report, 2022). The industry is flourishing by the adoption of

blockchain technology, digital banking, and a heavy emphasis on ethical finance solutions and financial inclusion.

In the Gulf Cooperation Council (GCC) region, comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates, the Islamic FinTech landscape is rapidly growing while a few of them i.e., Saudi Arabia (2nd), UAE(4th) and Bahrain(6th) have emerged as the pivotal hubs for Islamic FinTech development because of their robust financial infrastructure, supportive regulatory frameworks (Global Islamic Fintech Report, 2023-24). Even though Islamic FinTech has a lot of promise in the GCC, there are a lot of obstacles in the way. These include overcoming the mistrust of established financial institutions, assuring adherence to Sharia norms, and managing regulatory uncertainty. Particular difficulties faced by the GCC region include coordinating rules across its member nations and striking a balance between innovation and conventional banking practices (Marmore. 2019). Conversely, the opportunities for Islamic FinTech are vast in the GCC region due to the presence of vast Muslim population and higher internet penetration rates. Some of the innovative solutions to FinTech such as blockchain for halal supply chain verification, Robo-advisors for Sharia-compliant investments, and peer-to-peer lending (P2P) platforms adhering to Islamic principles are considered as the main growth drivers of Islamic FinTech. These innovations not only cater to the financial demands for the Muslim population but also gain global attention in ethical and inclusive finance (Zameni, A., Gupta, L., & Alam, N.,2020). The incorporation of FinTech in Islamic finance represents a major paradigm shift, capable to reshape the financial landscape by offering inclusive, ethical, and innovative financial products and services. This paper delves into the understanding the concept of financial technology (FinTech), Islamic financial technology, global Islamic FinTech landscape, FinTech wave in GCC region, exploring the challenges and opportunities of Islamic FinTech within the GCC region.

Understanding Financial Technology (FinTech)

Technology is rapidly changing the nature of financial services by redefining the financial industry as FinTech. Technological innovations are revolutionizing tasks which are previously managed by humans at bank branches. With their cutting-edge products and services, creative financial startups are posing a threat to well-established financial institutions, particularly Islamic financial institutions (IFIs) (Alam, N., & Nazim, S.,2021). These firms outperformed the established financial institutions and taking market share because they use data-driven algorithms and require little in the way of fixed assets and resources. FinTech, which is a combination of finance and technology, describes financial services that use technology to underpin their operations and provide incredibly disruptive, inventive, and ground-breaking services. The goal of FinTech companies is to move the finance industry's activities from physical locations to cloud-based services, enabling everyone to access effective financial services. FinTechs are being adopted by a large number of established financial institutions in order to strengthen their competitive position and offerings. A broad definition of FinTech is "the new applications, processes, products, or business models in the financial services industry, composed of one or

more complementary financial services and provided as an end-to-end process via the Internet” (Sanicola, 2017). FinTech products and services include a number of mechanisms in lending, personal finance, retail and institutional investments, equity financing, consumer banking, and more (Manta, O., 2018). This sector is predominantly driven by startups and financial accelerators with the leverage of new technologies to transform the traditional operations of financial markets globally.

Islamic Financial Technology

Islamic FinTech combines financial technology with the principles of Islamic finance to provide Sharia-compliant financial products and services. These services adhere to Islamic law, which prohibits interest (riba), excessive uncertainty (gharar), and investments in industries considered unethical (haram). The goal of Islamic FinTech is to meet the growing demand for Sharia-compliant financial solutions while utilizing the efficiencies and innovations brought about by modern technology. Some basic principles of Islamic FinTech which should be strictly adopted (Rahim, N. F., Bakri, M. H., & Yahaya, S. N., 2019) are as follows:

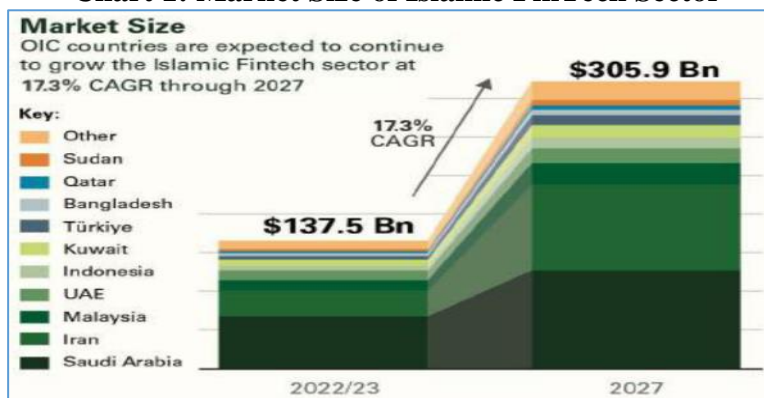
- a) **Prohibition of Interest (Riba):** Islamic FinTech is required to adhere to the rules and principle of abstaining from any riba and interest. Islamic FinTech must be used in Shariah compliant way in generating profits, such as through profit-sharing agreements or leasing arrangements.
- b) **Prohibition of Gharar (Excessive Uncertainty):** Islamic FinTech must avoid any transactions involving excessive uncertainty or ambiguity. Contracts and terms must be clear and specific to ensure transparency and fairness.
- c) **Prohibition of Maisir (Gambling):** Islamic FinTech prohibits transactions involving speculation or gambling-like elements, confirming that investments and financial activities are based on real economic principles.
- d) **Ethical and Halal Investments:** Islamic FinTech must ensure that the technology should be using for investments and financial activities in Shariah compliant ways. This includes avoiding investments in industries considered harmful or unethical, such as alcohol, gambling, tobacco, and harm-related products.
- e) **Transparency and Fairness:** Transparency and fairness are essential in all Islamic financial transactions. Islamic FinTech platforms must be transparent and fair in full disclosure of all terms and conditions. Using technology, Islamic financial Contracts and agreements must be straightforward, without any hidden clauses or unfair terms.

Some of the tools of Islamic FinTech are Peer-to-peer (P2P) lending platforms and crowdfunding, cryptocurrencies and blockchain. Peer-to-peer (P2P) lending platforms and crowdfunding emerge as useful tools for financial transactions and investments in the ever-evolving and dynamic sector of Islamic FinTech (Morse, A., 2015). These platforms combine Islamic principles with modern financial technology to promote inclusivity, transparency, and socioeconomic empowerment. On the other hand, Cryptocurrencies and blockchain are integrated into Islamic Fintech. For example, cryptocurrency platform is certified as Shariah-compliant in

many countries with proper regulation. Furthermore, blockchain technology is widely adopted in various Islamic finance schemes because of its reliability, and fairness which revolutionize the Islamic FinTech industry (Selcuk & Kaya, 2021). Another real example of Islamic FinTech is Wahed Invest, a New York-based FinTech startup as the first "halal robo adviser" in history and as a digital Islamic investing platform headed by Saudi Aramco Entrepreneurship Ventures, the oil giant Saudi Aramco's venture capital investment division, also referred to as Wa'ed Ventures. It offers Sharia-compliant investment opportunities in a diversified portfolio of ethically responsible stocks, Sukuk (Islamic bonds), and commodities like gold. It uses algorithms to confirm investments comply with Islamic principles, and provides a hassle-free way for Muslims to grow their wealth without compromising religious beliefs (Ali, H., Mohamed, H., Hashmi, H. S., & Hassan, M., 2019).

Global Islamic Fintech Landscape

According to the latest global Islamic FinTech report, "Islamic Fintech market continued its growth trajectory, fueled by a Muslim youth population with native digital literacy and a desire for Shariah-compliant financial services. The sector has shown resilience and innovation, with startups and established players alike introducing solutions ranging from digital banking and peer-to-peer lending to Insurtech and wealth management. Countries like Indonesia, Malaysia, and the Saudi Arabia have emerged as hotspots, leveraging their supportive regulatory frameworks and strong Islamic finance ecosystems" (Global Islamic Fintech Report, 2023-24). The global Islamic FinTech report also revealed "The global market size of Islamic Fintech transaction volume was estimated to be USD 138 billion in 2022/23 which accounts for 1.2% of the overall global FinTech market size, based on transaction volumes and assets under management, and is anticipated to reach USD 306 billion by 2027 and 417 Islamic FinTechs globally at a CAGR of 17.3% compared to overall global Fintech industry, which is expected to develop at a CAGR of 12.3% over the same time period." The countries with the highest estimated transaction volumes in Islamic FinTech are Saudi Arabia, Iran, Malaysia, the United Arab Emirates, Indonesia, and Kuwait. According to the GIFT Index 2023/24, Malaysia, Saudi Arabia, Indonesia, the United Arab Emirates, and the United Kingdom are recognized as having the top five most conducive ecosystems for Islamic FinTech globally (See the chart 1).

Chart 1: Market Size of Islamic FinTech Sector


Source: Adopted from Global Islamic Fintech Report, 2023/24

FinTech Wave in GCC Region

In GCC, the first wave of FinTech appeared during the period of post-2008 financial crisis which mostly directing to different payment solutions. This phase experienced a slight disruption in the financial industry due to the banks' control over the regime. The second wave brought substantial challenges for the traditional financial institutions by the startups that provided quicker, cost-effective services and superior user experiences. In reaction, GCC financial institutions including banks adopted mobile and online banking services to safeguard their market shares. This phase highlighted the essential need for banks to partner with FinTech firms, utilizing innovation labs and accelerators such as Dubai FinTech Hive to remain competitive. The third wave at the present time is in its initial stage attracting financial institutions to adopt Blockchain-based distributed ledger technology in their operations (Gulrez, T., 2021). There is an increasing pressure on GCC financial institutions and banks to revolutionize their obsolete IT systems and revamp their digital offerings. Following table portrays the evolution of FinTech in GCC region:

Table: 1 GCC FinTech Initiatives

GCC	Actions / Initiatives
KSA	2018: 7 FinTechs were granted permission to operate within the Sandbox. 2019: 14 FinTechs were allowed to function within the Sandbox. The licenses for non-bank Financial Institutions improved the total number of companies licensed by SAMA to 14, exceeding the FSDP target of licensing 3 companies by 2020. 2020: 11 FinTechs permitted to operate in the Sandbox 2020 cohort. SAMA implemented regulatory reforms: Payment Services Provider (PSP) Regulation, Consumer Micro Lending Regulation, Financial Aggregation Regulation, Insurtech Aggregation Regulation and Digital Bank Guidelines

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2021: 17 FinTechs were permitted by SAMA with the issuance of multiple regulatory frameworks i.e., Debt Crowdfunding Regulations and Buy Now Pay Later (BNPL) guidelines

2022: As a strategy to become Global Fintech hub, it intends to increase the number of FinTech companies in Saudi Arabia from the current 82 to 230 by 2025 which also aims to boost the share of non-cash (digital) transactions to 70 percent by 2025.

- Issuing 13 new licenses to FinTech companies (nine for payment services and four in finance), raising the total number of licensed companies to 30 by the end of Q4 2022.
 - Authorizing 10 FinTech companies to work within SAMA's Regulatory Sandbox to provide innovative solutions, such as individual savings solutions, e-payments, debt-based crowdfunding platforms for SMEs, and Buy Now, Pay Later (BNPL) services.
 - Permitting a third domestic digital bank made by a consortium of institutional and individual investors, with the Public Investment Fund (PIF) as a key investor.
 - Initiation the POS service between Saudi Arabia and Qatar via the Gulf Payments Network (GCCNET)
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UAE 2016: Establishment of RegLab (a regulatory SandBox) by Abu Dhabi's Financial Services Regulatory Authority through a legislative body to boost the development of Fintech.

2017: Formation of FinTech Hive at Dubai International Financial Centre (DIFC), Dubai with the partnership between the Dubai International Finance Centre and Accenture to provide access to investor networks, comprising DIFC'S USD 100 Mn Fintech Fund.

2018: The U.A.E. government took Emirates Blockchain Strategy 2021 aiming to convert 50% of government transactions to blockchain within 3 years. DIFC and U.S. based consulting company Accenture made an MOU to work together for the innovation at the FinTech Hive.

2019: The U.A.E. initiated National Artificial Intelligence Strategy 2031 to boost its government performance and efficiency and also to support many applications of AI to FinTech. Regulations for ICO, such as Adab Solutions, homegrown in UAE as the preparation of launching the First Islamic Crypto Exchange.

2020: The central bank created a FinTech unit to offer proper regulations, privacy and data protection, green FinTech, FinTech ecosystem and inclusive financial services.

2021: the UAE Centre for the Fourth Industrial Revolution (C4IR UAE) in partnership with Dubai International Financial Centre Authority (DIFC) and Dubai Financial Services Authority (DFSA), introduced a pilot sandbox to lead digital assets and blockchain sector

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	2022: 189 New FinTech companies received licenses which made a total of 303 FinTech companies.
Bahrain	2017: The CBB's Fintech & Innovations Unit established Regulatory Sandbox to evaluate the new applications by the FinTech companies. 2023: <ul style="list-style-type: none"> ▪ 19 fresh Regulatory Sandbox applications were received; ▪ 14 applications were approved to join the Regulatory Sandbox. 23 companies have effectively gone from the Sandbox after finished testing
Qatar	2023: Qatar FinTech Strategy reflected the QCB's vision which is based on four main axes: creating a pioneering infrastructure, prioritizing innovation and growth in the FinTech sector, permitting companies through FinTech solutions, and creating Qatar a FinTech hub.
Kuwait	2022: Central Bank of Kuwait (CBK) studied over 220 applications for new services, including electronic ones. 2023: The CBK permitted digital payment services, ensuring ease, speed, and high security standards for protecting customer banking data. The "Apple Pay" service is adopted by many banks to the local market following the legal requirements of CBK.
Oman	2023: The CBO Fintech framework and roadmap include the following: a) Fintech Regulation, b) Fintech Regulatory Sandbox, c) Fintech Innovation Hub, d) Cloud Computing Framework for the banking and financial sector, e) National e-KYC and Customer Digital on boarding, f) Open Banking API Strategy, g) Fintech Professional Educational program, h) Aligning Fintech Strategy between Central Bank of Oman and Capital Market Authority, i) Fintech & Banking Zone at Comex Technology Exhibition, j) Sponsoring or co-sponsoring FinTech competitions and Hackathons

Source: SAMA Annual Report 2023, Fintech in UAE Industry Report 2024, CBB Annual Report 2023, QCB Annual Report 2023, CBK Annual Report 2023, OCB Annual Report 2023. Alam, N., & Nazim, S. (2021).

Challenges of Islamic FinTech in GCC

In this section, some of the key challenges of Islamic FinTech in GCC region are briefly discussed, such as, talent shortage, cybersecurity, lack of standardization, operational problems, Non-compliance with regulations, and financial and investment obstacles.

Islamic FinTech sector in the GCC faces substantial talent shortage challenge, which hinders its growth and innovation potential. The sector needs experts with a special combination of knowledge in Islamic finance and cutting-edge technology, which is currently hard to come by in the area. Technologically advanced workforce might not understand the nuances of Shariah compliance, while traditional financial specialists mostly lack in required technological skills in fields like blockchain, AI, and cybersecurity. The GCC's educational structures are still in the early phases of including extensive FinTech and Islamic finance courses into the professional curricula

keeping the pool of competent graduates relatively small (Alam, N., & Nazim, S., 2021). Islamic FinTech in GCC in particular faces unique cybersecurity challenges partly because of ensuring the condition of Shariah compliance in safeguarding against digital threats. One of the key challenges is to integrate advanced security measures without compromising Islamic principles, such as ensuring ethical data handling. For example, blockchain and AI requires robust cybersecurity frameworks to avoid fraud, cyberattacks, and data breaches that can weaken the user trust and regulatory compliance. Each of the GCC's member nations has its own regulatory framework and compliance standards. This turns Islamic FinTech sector into a unique standardization problem. Despite having a common commitment to Islamic values, the Shariah compliance methods are fragmented due to variances in legal, cultural, and economic circumstances. For example, while the UAE has made significant steps in regulating and promoting a supportive environment for cryptocurrency through initiatives like the Dubai Blockchain Strategy, other GCC nations like Saudi Arabia and Qatar have taken a more cautious position, with the Saudi Arabian Monetary Authority (SAMA) and central bank of Qatar warning against cryptocurrency trading and investing due to its potential risks and lack of regulation. This fragmentation creates a complex landscape for startups and makes it challenging to ensure that all regulatory requirements are met across different jurisdictions. This regulatory non-compliance factor can also hinder overall growth of Islamic FinTech and integration into the broader financial ecosystem. This lack of uniformity even would make difficult in cross-border trade and cooperation within the GCC region.

Islamic FinTech is competing with traditional banking in the GCC presents operational challenges due to differences in operational frameworks, and regulatory environments. For example, the process of obtaining regulatory approval for new financial products can be slow and cumbersome, with each country having its own specific requirements and interpretations of Shariah law. This can result in delays and increased costs for Islamic FinTech companies are trying to launch innovative solutions. Furthermore, the rapid expansion of Islamic FinTech often outpaces the regulatory frameworks, leaving many firms operating in a grey area where clear guidance is lacking. In the Islamic FinTech sector, Non-compliance with regulations may result in severe penalties, reputational damage, and loss of consumer trust. Islamic FinTech companies need to make significant investments in compliance infrastructure and interact with regulators and Shariah boards in a proactive manner to reduce these risks which is costly. The GCC's Islamic FinTech sector faces financial and investment obstacles mostly because the sector is still in its infancy. Investing in Islamic FinTech might be hesitant for traditional venture capital and private equity investors due to their inadequate comprehension of Islamic finance concepts. Furthermore, there is tight competition in the local investment market, and traditional FinTech projects are strongly favored since they are thought to yield faster returns. The investment process is made more difficult by the requirement to design finance arrangements that adhere to Shariah norms, such as avoiding interest-based financing. As a result, Islamic FinTech businesses may have trouble raising fund, which may limit their potential to grow and develop.

Opportunities of Islamic FinTech

Despite the presence of numerous challenges, as mentioned in the previous section, there are ample opportunities of Islamic FinTech growth in GCC region. The recently published Global Islamic Fintech Report, 2023/24 has identified several sectors where Islamic FinTech are still lag behind. These sectors are back office, capital markets, insurance, social finance, and technology providers. This section shed light on how some these sectoral resources along with other can be harnessed by the Islamic FinTech industry. Islamic Fintech can facilitate the development and distribution of innovative Shariah-compliant capital market instruments, such as Islamic equities, Islamic unit trusts, Sukuk (Islamic bonds), Islamic ETFs (Exchange Traded Funds), and crowd-funded Islamic investments. For instance, the issuance and trading of digital Sukuk can make the process more efficient and accessible, attracting a larger pool of investors. As the GCC region has a high concentration of wealth, Islamic FinTech can offer tailored solutions for wealth management, robo-advisory services, and halal investment platforms. The principles of Islamic finance align well with the growing global trend towards social finance. Islamic FinTech can promote green finance initiatives and ethical investment products in the GCC region by introducing Zakatech and Waqftech which are broadly unexplored in regions that are most in need of efficient Islamic social funding. Takatech is mostly non-existent, with Agri fintech most needed. Islamic FinTech platforms can leverage crowdfunding and peer-to-peer lending models that comply with Shariah principles, providing alternative financing options for SMEs and startups. Besides, the adoption of smart contracts and blockchain technology can increase transparency and efficiency in Islamic finance transactions, ensuring Shariah compliance with reducing operational costs. Many GCC countries are investing heavily in digital transformation as part of their economic diversification strategies (e.g., Saudi Arabia's Vision 2030). This provides a conducive environment for the growth of FinTech, including Islamic FinTech. Lastly, Islamic FinTech can serving the underbanked and unbanked communities in the GCC. This presents considerable opportunity may be fostered by Islamic FinTech by facilitating access to financial services via digital platforms and mobile banking.

Conclusion and Recommendations

The GCC region is witnessing a remarkable surge in Islamic FinTech due to some unique factors including technical progress, a youthful and tech-aware populace, and favorable regulatory frameworks. Islamic FinTech advances are well utilized to improve the provision of financial services adhering to Sharia principles. This covers the creation of blockchain-based financial services, digital banking, and online investing platforms that follow the rules of Islamic finance. The governments and financial institutions in the region are supporting Islamic FinTech ecosystems, creating an atmosphere that is favorable to innovation and expansion. The rapid growth of Islamic FinTech in the GCC not only aligns with the region's cultural and religious values but also positions it as a global hub for Sharia-compliant financial technology solutions. However, this study suggests some recommendations in order to achieve their individual economic vision 2023 and particularly to secure the future position as global hub in the Islamic FinTech

industry. These recommendations are: a) investing in specialized training programs, foster partnerships between academia and industry, and create incentives to attract and retain talent with the necessary expertise to drive the Islamic FinTech sector forward, b) harmonizing the operations and compliance standards between Islamic FinTech startups and traditional banks through collaboration, regulatory adjustments, and technological integration, c) integrating the Shariah law within the GCC which necessitating a unified approach to ensure seamless and effective collaboration between financial sectors, d) pooling specialized investment funds and increased awareness among investors about Islamic FinTech to foster a supportive funding environment, and e) harmonizing and collaborating all the related stakeholders such as Shariah scholars, regulators, national policy makers, and FinTech companies to create a cohesive and supportive environment for Islamic FinTech in the GCC region.

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