OPEN ACCESS
Saudi Journal of Economics and Finance
Abbreviated Key Title: Saudi J Econ Fin
ISSN 2523-9414 (Print) | ISSN 2523-6563 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: http://saudijournals.com/sjef/

Original Research Article

The Impact of Fintech on Development of Islamic Banking Sector in the Contemporary World

Dr. Kavita Panjwani*, Dr. Nedra Shili

Assistant Professor, College of Business administration, Jazan University, Jazan, Saudi Arabia

DOI: 10.36348/sjef.2020.v04i07.006 | **Received:** 13.07.2020 | **Accepted:** 20.07.2020 | **Published:** 27.07.2020

***Corresponding author:** Dr. Kavita Panjwani

Abstract

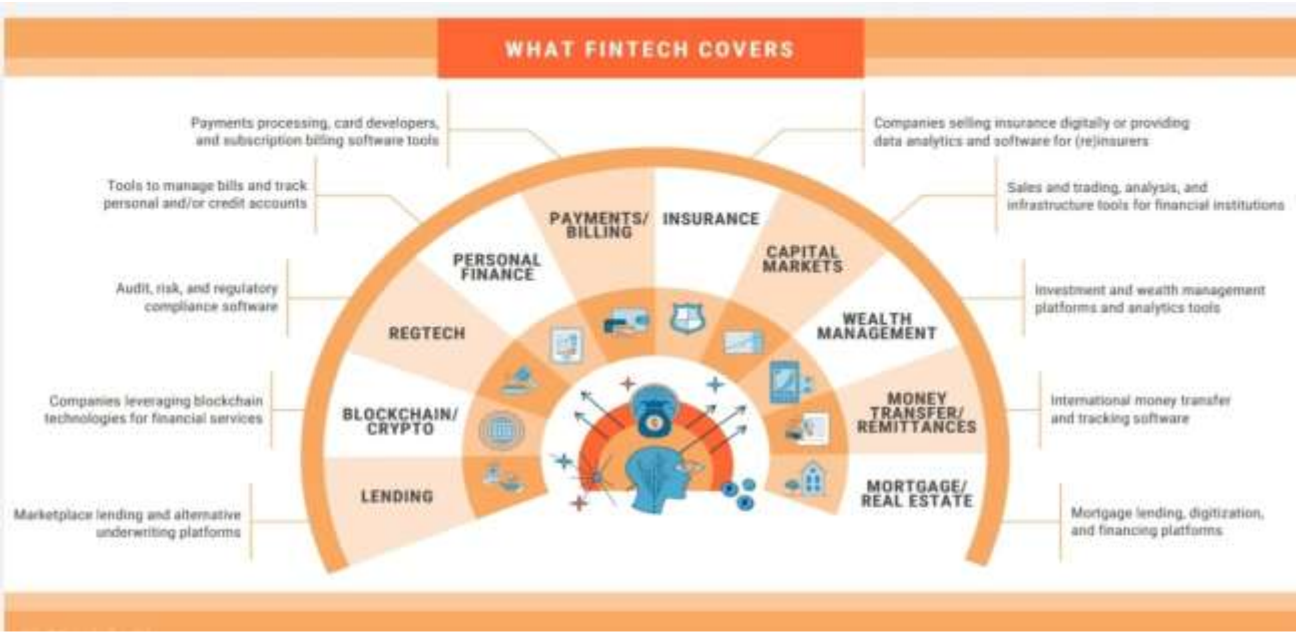
Technologies of the future drive an important role in effective growth of Islamic banking sector by creating transformational waves fostering the emersion of "Fintech", which, compared to the traditional financial system, fulfills several advantages. Financial technologies appear to have a significant participation in the empowerment of individuals who lack access to financial services and consequently lead to immediate and continuing interest for individuals, the planet, and wealth. The rapid alteration of financial sector has been spread all over the world. The quick digitization drove a heavy use of technology in banking industry and in Islamic banking sector in particular. This paper examines how financial technology innovations induce financing efforts to enhance the quality of Islamic banking sector services in contemporary world and analyzes the new concept of digital Islamic banking. The present study determines the matrix correlation between Islamic banking assets and Fintech technology with help of statistical, graphical method of analysis, tabulation as well as methods of scientific knowledge.

Keywords: Islamic Banking, Financial Technology, Islamic Finance, Sustainability, Network economics, Digital Islamic banking, crypto currency.

INTRODUCTION

The internet evolution in the early 1990s had profoundly influenced financial markets worldwide. The swift development of digital technologies drove the emergence of new tools in financial sector, which, by its turn, witnessed a thorough transformation. Responding to this change, today, an industry commonly known as financial technology is emerging and becoming the engine of financial services and products. Fintech is gaining an important role in the innovations of the financial sector and is elaborating very fast, directed by peer to peer base sharing economic system, affirmative regulation, and InfoTech. Fintech as "a technological revolution of the banking sector driving new business models, application, process and products which will have an important impact on financial institutions and services" described by the Financial Stability Board (FSB). Interest has been growing in Fintech, the globe witnessed the appearance of greater than twelve thousand new established businesses and enormous worldwide investment of nineteen USD billion in 2015 [1]; this explains the endorsement of financial technology in many countries' financial sector. Fintech100 report issued by KPMG highlighted that China and the United States are governing countries of financial technology new established businesses and firms [2]. Fintech aspects continue to forge. In the nine starting months of the year 2016, worldwide investment in Fintech became five times greater than 2013 [3] and reached $21 billion. In 2019, Fintech landscape continues to attract more investors reaching $37.98 billion according to the report of Pulse of Fintech. Most of investments in Fintech manifested by abundant and prosperous Fintech firms, took place in the United States (US) and Asia. Their activities targeted the payments and lending space, recent investments are going into insurance, DLT and wealth management.

In the global scale, Fintech develop constantly covering a wide range of financial activities. The endorsement of financial technology changes the way financial services are delivered. Currently, Fintech companies are opening new horizons in payment, lending, insurance, blockchains and crypto-currency, smart phone payments, insurance and intelligent machine advising. The following figure shows the different financial services covered by Fintech.



Source: (CB-Insights. Global Fintech report Q3 2019**)**

Fintech has been as well endorsed in the Islamic finance industry as a new innovative way in offering financial services. The adoption of Fintech as innovative supporting services and solution in Islamic finance are applauded by Sharia as long as it prevents the banned practices in transactions such as interest, gambling, cheating, etc.71% of Islamic finance industry's assets are afforded by the Islamic banking sector, and it contributes by USD 1.72 trillion [4]. Therefore, it presents the largest sector of Islamic finance industry which has been digitized and created "digital Islamic banking" due to the endorsement of Fintech.

Fintech enhance prescribed Islamic behavior in banking transaction, it is expected to alter the financial industry by reducing costs, ameliorating the aspect of financial services, and boosting a more diversified and balanced financial sector 'The Fintech Revolution,' 2015. Therefore, Islamic Fintech models might amplify the market especially crowd funding, P2P lending and wealth management. It will as well help to control the compliance of transaction with Sharia requirements through halal block chains. The successful implementation of Fintech is widely endorsed as a convenient solution to financial inclusion which is strongly linked with sustainable economic growth. Financial inclusion has an important role economic growth by treating the difficulties faced by rural masses to benefit from financial services [5].

In this paper, researches try to answer two important questions: The first highlights the implementation of financial technology services in Islamic banking sector and its effect on the growth of Islamic banking assets. The second question seeks to find out the future scenario of Fintech.

LITERATURE REVIEW

As a widely endorsed new tech, since its emergence, Fintech has been subject of a considerable increase in academic literature which overview its different aspects and outcomes. Though its originality, the topic of Fintech in banking sector has been studied since past few decades.

Allen N. Berger [6] in his paper examined the effect of advances in technology on the banking sector. The author reviewed in the first section background statistics about changes in the banking industry over time [7], and in the second section, he presented microeconomic researches on technological changes examples in the banking industry. Berger concluded that, from one side, due to improvement in "back office" technologies, costs and lending capacity has been improved, and from the other side, consumers benefit from the advanced "front office" technologies. Therefore, the research implies that financial technological progress facilitated and consolidated the banking industry [6].

Fouad H. Al-Salem studied the financial product innovativeness of Islamic financial institutions. He used a qualitative method in the collection and analysis of the views of Islamic finance searchers. The study observed that the innovation levels of Islamic financial institutions are poor as the evolution of Islamic finance is considered a recent activity. Therefore, it is necessary to a program to induce the innovation of financial products in order to help Islamic finance industry to flourish [8].

Sofia Anwar *et al.*, in their research paper investigated empirically the correlation between financial sector development and sustainable economic development in Pakistan. They applied the auto regressive distributed lag (ARDL) to calculate the long term relationship. Researchers concluded that the two variables are strongly correlated and have a positive relation. The test of causality showed that financial sector is essential for economic development. They selected three indexes to test the financial sector development: the ratio of domestic credit to private sector to nominal GDP, the ratio of M2 minus currency in circulation to nominal GDP and the assets with the central bank to GDP ratio. Sustainable development was calculated by the rate of external debt to exports ratio [9].

Thomas Philippon in his research paper titled "the Fintech opportunity, evaluated the potential effect of Fintech on the financial sector. He conducted his study to point out the financial endurance and services ostentation. The author applied an economic model consisting of household, non-financial business industry and a financial intermediary field. Philippon concluded that the appearance of new entrants in financial industry is explained by the high cost of financial services. According to Philippon, the existing regulations approach is adjusting with political economy and costs coordination, and consequently unable to adapt significant change. However, Fintech can create profound changes as well as important regulatory challenges [10].

Guild James in his paper "Fintech and the future of Finance" he examined the influence of new technology on the financial sector [11]. The researcher conducted a qualitative analysis of three case studies: cashless payment system in India and Kenya, and peer-to-peer lending in China. The study concluded that in Kenya and China, the development of Fintech industries was allowed to their own pace, and authorities will intervene only in case of the existence of a systematic risk or required regulatory clarification. However in India, the government took an interventionist approach which drove a significant economic disruption.

Doreitner *et al.*, analyzed German Fintech industry in their book "the Fintech market in Germany". This book offers a fresh and interesting overview of the Fintech market by presenting a clear economic analysis of the financial technology in Germany [12]. Authors calculated the total market volume of Fintech firms in Germany in the field of finance and wealth management segments was 2.2 billion EUR in 2015. An important segment of crowd funding (two hundred seventy million EUR), and wealth management is under control of social trading and robot-advice podiums (360 million EUR). The paper indicates that presently the Fintech sector does not reproduce a systemic risk to the German economy. The study mentioned that Fintech promises to decrease the shortage in funding small and medium-sized enterprises (SMEs) in Europe [13].

Bulatova *et al.*, discussed in their paper "The Fintech and Islamic Finance synthesis in the modern world" the economic requirements of Islamic finance growth in modern environment. Authors analyze definitions of Islamic finance and banking and financial technologies, which built the emergence of a new consideration of digital Islamic banking. The researchers examined the effect of the Fintech implementation on the development of Islamic finance and formed the basic prerequisites for potential sustainable growth in this field. The article provides a structural-dynamic analysis of GDP for four countries and Dow Jones in order to determine more efficient and less expensive Fintech implementation into the nations of the Islamic world. The results of this study show the development of dualistic companies combining Fintech and Islamic finance, as well as the rapid development of the Islamic Fintech Ecosystem [14].

METHODOLOGY

This paper determines the matrix correlation between Islamic banking assets and indicator of Fintech technology with help of statistical, graphical method of analysis, tabulation as well as methods of scientific knowledge. The current paper uses Islamic banking assets and indicators of Fintech such as total investment activity in Fintech, Global private investment in Fintech: Cyber security, Global private investment in block chain and crypto currency (in form of capital invested $ B and deal count) to measure economic growth of Islamic banking system.

RESULTS AND DISCUSSIONS

Considering the flow of Fintech companies' invoices upon the enlargement of Islamic banking as a component of financial system, economic and mathematical modeling was disbursed. To determine the effect of new technology for financial operation investments on the extension of Islamic Banking assets, we selected the following variables [15]:

- Islamic banking assets which represent the global total value of assets owned by Islamic banks.
- Total investment in Fintech, gives the total amount of capital invested in Fintech firms and presented in billions of dollars.
- Global private investment in Fintech cyber security, present the capital invested in cyber security area which has been targeted by Fintech startups in order to create better security protocols and enhance encryption of data.
- Global private investment in block chain and crypto currency which are strongly linked elements in the process of digital transaction. Block chain is the system used in crypto currency transactions.

The indicator of Fintech to be modeled is given out.

Table-1: Input data for modulation

Year	2014	2015	2016	2017	2018
Islamic Banking Assets	1445	1604	1675	1721	1809
Total Investment In Fintech (capital invested $B)	46	59	64	51	120
Total Investment In Fintech (Deal count)	1556	1981	1998	2318	2590
Global Private investment in Fintech : Cyber security (Capital invested $B)	60.1	78.9	120	128	250
Global Private investment in Fintech : Cyber security (Deal Count)	16	17	18	31	29
Global Private investment in block chain & Crypto currency (Capital invested $B)	0.7	0.5	0,7	4.9	5
Global Private investment in block chain & Crypto currency (Deal Count)	148	144	167	245	586

Source: Pollari and Ruddenklau, 2019

At the start, correlation matrix is formed to specific the grade of penetration of the chosen X on the studies Y (Table-2).

Table-2: Correlation matrix

	Y	X1	X2	X3	X4	X5	X6
Y	1						
X1	.726	1					
X2	.973	.756	1				
X3	.871	.938	.895	1			
X4	.79	.47	.893	.722	1		
X5	.759	.544	.852	.769	.988	1	
X6	.746	.939	.822	.966	.698	.776	1

Table-2 indicates the proportion of influence of the chosen factors on the item of study. According to this study, the indicator X1-X6 have the value of correlation coefficient more than zero.5 and are accepted for the study, but among them, there's multi-linearity higher than zero.7 and with the help of correlation matrix, multi-linearity determined in X1 with all indicators except X4 and X5. This result indicates that Islamic banks are in better situation than ancient banks because they are flourish area of Islamic finance. With sufficient investment in Islamic banking assets participants in Fintech, can lead to effective growth of Islamic banking system.

Fintech Advancement and Forward Looking Scenario

The software of scientific innovations to economic enterprise has been attracting ten billions of dollars in venture capital in current years. Instance of Fintech revolution include new digital advisory and trading system, crypto currencies and the block chain, equity crowd funding, artificial intelligence and machine learning and peer to peer lending and mobile payment system and digital cash transfer services [16]. This is essential fact due to sustainable economic growth which is strongly linked with financial advancement.

Various researches discussed the advantages of Fintech for the financial diligence from distinctive perspective, these circumstances associated to end users and market integrity, competition, investor protection, and monetary inclusion, in additionally coordination to avoid duplication of labor and achieve synergies from the variety of efforts at the worldwide degree. Financial Stability Board [3], like any department, the Fintech summarizes now not entirely benefits and opportunities, it affords a huge variety of risks that cut throughout a number of sectors and often integrate each tactical and strategic hazard factors. The Fintech dangers and threats come normally from worries about the operational risk, compliance and the server competition. The following threat related with Fintech, specifically in the banking region like Liquidity risk, Volatility of bank financially institution funding resources, Compliance risk almost about data with privacy, growth problems in assembly compliance requirement and in particular, competition on market share [17].

Table-3: Financial technologies and revolution includes threats and opportunities

	Consumer sector influence by Fintech	banking system influence by Fintech
Threats	1. Unsuitable marketing proceeding 2. Financial services interrupt 3. Input surveillance 4. Data confidentiality	1. Immense operational exposure 2. Management risk by arbitrator 3. Concealing the source of illegally gotten money. 4. Deliberate and advisability risks 5. Escalated interrelation among Investors. 7. Exchangeability prospect 8. Conformity exposure
Opportunities	1.Quick Financial services 2. Reduce contact price 3. Huge and improved investment service	1. Regulatory process with in Banking sector. 2. Upgrade and well organized banking processes. 3. Restructuring of data for merchandise and risk management intention. 4. Prospective collision on investment safety due to intensify rivalry.

Source: BCBS-2017

It is extremely essential to observe that the clear advantages from Fintech require the value of protection and stability, and investor safeguarding. Financial institution supervisor requires chance management and jurisdiction standard, safeguarding to modern rising shipping passage and offerings existence brought with the aid of financial organization through Finance technology. Banking sector need to be maintained degree for reliability and stability. Future expectations for the Fintech boom and Banks' strategic response to deal with it.

The strategic and lengthy term route of Fintech is subject to distinct expectations, these expectations range according to the backgrounds and journey of the experts. Some argue that the Fin Tech will be part of regular retails banks and institution. Other advising, the cyber banking endowment will straightforwardly fail, or the regular banks will include these firms and gather them [18]. Due to advancement in business, the financial technology corporations reduce the greater degree of risk associated and represent the banks ought to face to exploit from the opportunities and strength it provides.

CONCLUSION

Financial services industry is imperatively aligning with digital transformation in order to preserve its competitiveness and longevity in the market. One of the reasons that explain the success of the implementation of Fintech in Islamic banking sector is that they offer better alternatives to conventional banks services. However, the main issue which has been arisen among developers and companies is cyber security threats. Therefore, the deployment of block chain technology by Islamic finance institutions will greatly expand their Fintech activities and the way they can offer their services in the new digital world.

By adopting Fintech, Islamic banking will have the ability to promptly and efficiently disclose their new products and services in the world [19]. The innovation in Islamic Fintech was enhanced with the use of crypto currency which is a digital currency where encryption techniques are adapted to adjust the units of currency and certify the transfer of funds, operating separately of a central bank. The system applied in crypto currency is called blockchains, which is an open, distributed ledger is able to save transactions between two parties accurately and in a valid and continuous way. The findings of this paper show that the increasing private investment is these Fintech services (cyber security, block chain and cyber security) increase the Islamic banking assets. Islamic banking benefits from the continuous evolution of technology by simply implementing better techniques and uses that preserve customers' digital security and affording easy access to digital transactions.

REFERENCES

1. Fintech in India, Joint publication by KPMG in India and NASSCOM 10.000 startups, 2016. KPMG.com/in
2. Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, *61*(1), 35-46.
3. Financial Stability Board (FSB). (2017).Financial Stability implications from Fintech: Supervisory and regulatory issue that merit attention.
4. Global Islamic Finance Markets Report, Source: Research and Markets, March 20, 2019 12:17 ET.
5. Sujlana, P., & Kiran, C. (2018). A study on status of financial inclusion in India. *International Journal of Management Studies*, *2*(3), 96-104.
6. Berger, A. N. (2003). The economic effects of technological progress: Evidence from the banking industry. *Journal of Money, credit and Banking*, 141-176.
7. Illueca, M., Pastor, J. M., & Tortosa-Ausina, E. (2009). The effects of geographic expansion on the productivity of Spanish savings banks. *Journal of Productivity Analysis*, *32*(2), 119-143.
8. Al-Salem, F. (2009). Islamic financial product innovation. *International Journal of Islamic and Middle Eastern Finance and Management*, 2(3):187-200.
9. Anwar, S., Shabir, G., & Hussain, Z. (2011). Relationship between financial sector development and sustainable economic development: Time series analysis from Pakistan. *International Journal of Economics and Finance*, *3*(1), 262-271.
10. Philippon, T. (2016). The Fintech Opportunity**.** NBER Working Paper No. w 22476. Available at SSRN: https://ssrn.com/abstract=2819862
11. Guild, J. (2017). Fintech and the Future of Finance**.** Asian Journal of Public Affairs, 2017; Lee Kuan Yew School of Public Policy Research Paper No. 17-20.
12. Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). The fintech market in Germany. In *FinTech in Germany* (pp. 13-46). Springer, Cham.
13. Dorfleiter, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). The German FinTech market. Heidelberg: Springer.
14. Bulatova, E. I., Potapova, E. A., Fathutdinova, R. A., & Yandiev, R. C. (2019). The fintech and islamic finance synthesis in the modern world. *3C TIC. Cuadernos de desarrollo aplicados a las TIC*, 258-273.
15. Alam, N., Gupta, L., & Zameni, A. (2019). *Fintech and Islamic Finance*. Springer International Publishing.
16. Damian, D., & Manea, C. (2019). Causal recipes for turning fin-tech freelancers into smart entrepreneurs. *Journal of Innovation & Knowledge*, *4*(3), 196-201.
17. Al-Ajlouni, A., Al-Hakim, D., & Suliaman, M. (2018, April). Financial Technology in Banking Industry: Challenges and Opportunities. In *e International Conference on Economics and Administrative Sciences ICEAS2018*.
18. Li, Y., Spigt, R., & Swinkels, L. (2017). The impact of FinTech start-ups on incumbent retail banks' share prices. *Financial Innovation*, *3*(1), 26.
19. Nakamoto, S. (2009). Bitcoin: A Peer-to-Peer Electronic Cash System. available at: http://bitcoin.org/bitcoin.pdf (accessed 20 October 2017).