FinTech in Bahrain: The Role of FinTech in Empowering Women

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Abstract. The purpose of this paper is to review the definition of Financial Technology (FinTech) discipline from different perspectives and scholars. Moreover, the research will explore FinTech history and its evolution stages throughout the years based on existing literatures. In addition, it will present the different concepts and categories of FinTech.

The research will also discuss FinTech implementation in the Kingdom of Bahrain and focus on women role within the FinTech, and the initiatives taken to empower women within the industry. The research is based on review of literatures and interviews to explore women role and achievements within Fintech in Bahrain, and it proposes recommendations for future thorough research.

Keywords: FinTech · Financial services · Kingdom of Bahrain · Women · WIFBH

1 Introduction

With the advent of the world wide web, concepts like e-government, e-governance, information systems, and/or Web2.0/3.0 or e-Health have emerged (Alshaikh, Razzaque, and Alalawi 2017; Razzaque, Eldabi, and Jalal-Karim 2013; Razzaque, Eldabi, and Jalal-Karim 2013; Razzaque and Karolak 2010). In business and management research, concepts like knowledge management also got ample attention, underpinned by various social science theories like the social Capital Theory and/or Peak-End Rule, just to name a few (Razzaque and Hamdan 2020; Razzaque and Hamdan 2020; Razzaque and Eldabi 2018). So, it is no surprise that even in the financial industry has greatly contributory, bring it to the forefront for its importance in the society, as well as the daily lives of people, worldwide, even though this sector has experienced transformations over the years due to changes in geographic regimes, political and legalization changes. Even though Financial Technology known as FinTech is not a new concept, (Berger 2003; Mareev 2016; Shim and Shin 2016; Razzaque and Hamdan 2020) states that because of the rise and latest evolution of FinTech a new era is being born; FinTech is a link between

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financial industry, Information technology (IT) and innovation. The actual term “Fin-Tech” is derived from combining the words finance and technology, which represents what the acronym actually means; that encompasses the development of technology and innovation to support bank and finance expertise with the latest technologies. Fin-Tech also describes the connection between technologies such as cloud computing and mobile internet, with financial services business activities like loans, payments, transfer of monetary values and other banking operations.

Many scholars have investigated FinTech phenomenon and investigated its history, evolution and concepts, however, most of the researchers focused on the revolution of FinTech and its impact within the Banking sector, regulatory of FinTech or the impact of a certain category of FinTech on a particular financial service. This research paper is based on review of existing literature and aims to provide a collective summary from different journals concerning FinTech definition, history, and evolution. In addition, it will present a brief definition of FinTech concepts and components. It will also review FinTech implementation in Bahrain, the different technologies used within Bahrain organization, and focus on women role within FinTech industry in Bahrain and FinTech opportunities to empower women in this field along with the challenges and areas of improvements.

The research gap is to review the initiatives adopted by Bahrain towards empowering women, in addition to exploring the projects and plans within Bahrain to support women within FinTech industry.

The paper is organized as follows. First, definition and brief history of FinTech is reviewed, followed by a presentation of FinTech concepts and categories. Next, a review of FinTech in Bahrain, and the initiatives made by Bahrain to support FinTech is presented along with different sectors applying FinTech concepts in the country. After that, the concept of women in FinTech within Bahrain is reviewed and the initiatives towards empowering women within the financial technology industry is presented. Finally, the paper is concluded and opportunities for future research are presented.

2 Literature Review

2.1 Definition and Brief History of FinTech

FinTech is a term derived from combining the words finance and technology and defined as a cross-disciplinary that combines finance, technology management and innovation management. Another understanding of FinTech is that it is any innovative idea using technology solution to enhance a financial service according to different business situations, while the idea has the possibility to lead to a new business or a business model. This understanding of FinTech can define Uber as a real-world example of FinTech business, that is because the company provides innovative idea using technology (transportation services booked using mobile app) and improve ordering taxi services (financial service) whereas in many cities Uber provides an upfront pricing and offers advance payment (Leong and Sung 2018). Therefore, we can conclude that FinTech generally describes the connection of internet-related technology (e.g., cloud computing, mobile internet) with the business activities of the financial industry services such as transaction banking and money lending. FinTech refers to the innovators and distributors in the financial sector that uses Internet and automated information processing through the availability
of ubiquitous communication, such companies introduce new business models, which promise more flexibility, efficiency, security, and opportunities more than the established financial services (Lee 2015a) (Gomber, Koch, and Sieiring 2017).

Some researchers found that the concept of FinTech is not new, (e.g. Razzaque, Hamdan, and Cummings 2019; Razzaque, Hamdan, and Cummings 2019), as they have traced it back to July 1866 when the Trans-Atlantic transmission cable occurred as the first communication on 16 August 1958. Back then, the connection did not only reduce the time of communication between North America to Europe, but it also enabled the development of global telex and then facilitating the financial services known as FinTech 1.0 (Nicoletti 2017). The emergence of financial technology has completely changed the finance industry, from the invention of credit cards in the 1950s to the emergence of ATMs in the 1960s, in 1970s electronic trading, rise of personal computers in the 1980s and in the 1990s the development of e-commerce business models (Bhardwaj, Sinha, & Pal, 2018). As for the term FinTech, it is most likely that it was mentioned during the early 1990s, within the context of a newly founded “Smart Card Forum” by Citicorp’s chairman John Reed (Kutler 1993) (Puschmann 2017).

The terminology of financial technology has emerged when Citicorp launched a project titled “Financial Services Technology Consortium” which facilitates the collaboration of technology within the financial services sector. It was only in the year 2014 when the new FinTech attracted public attention, and it has been used since then to describe the development of technology, ecosystems and platforms, which enables and ease the access of the services and processes within the financial industry, making it more efficient and affordable for more people. Imran (2014) revealed that throughout the financial industry history has been the major technology user in the service sector after the telecommunications industry compared to other service sectors, whereas the financial sector can be considered as the forefront of technology based innovation. Yet, strict regulations at national, regional, and international levels restrains the financial industry. However, (Lee & Shin, 2018) found that since FinTech known as one of the key innovations that comes at high speed and driven by regularity relaxation and information technology. Finally, FinTech offers a promising change to the banking and financial services industry by reducing costs significantly, increase diverse services, and provide more stable industrial and market landscapes (Iman 2019).

Developed economies are transitioning to smart phone from cash to digital payments, thus migrating from 3G to 4G. The same is being followed by the developing economies (Hughes & Lonie, 2007; Holmes, 2011; Bold & Rotman, 2012). In 2012 The mart phones are replacing paper currencies with smart currencies (Newman 2012). When considering where the Gulf is, for instance Bahrain, these are developing countries where there are scant financial institutions, Bahrain, however, is far better, considering that in countries like India such a notion may apply. Such that developing countries find it challenging to even transfer money (Razzaque et al. 2019; Collins et al. 2009). In such countries when the financial sector introduces e-payment and e-banking systems, such regions also experience a commendable accomplishment (Etim 2012).

Enabling technology is closely related to the development of FinTech, during FinTech 1.0 enabling trans-Atlantic transmission cable and mainframe computers technologies, which are relevant to financial technologies like SWIFT and ATMs. The seconds stage
that is FinTech 2.0, it included technologies interconnection the internet and the internet of things, while the latest stage of FinTech development which is FinTech 3.0 is more concerned with more of data technology development. Currently, we are in the stage of transmission from FinTech 2.0 to 3.0 as per (Leong and Sung 2018).

2.2 Concepts of FinTech

FinTech firms are companies that made a breakthrough to use technology for financial solutions such as banking, payments, and personal financial management (Musabegovic, Özer, Djkovic, and Jovanovic 2019). According to the European Parliamentary Research Service (EPRA 2017) FinTech is defined as firms which uses technology-based systems to provide direct financial products and services or try to make financial systems more efficient, this includes payment systems, aspects of innovative research in financial, insurance, deposits and lending, investment management and crowdfunding (SUMEDREA, 2019).

As stated by (Magnuson 2018) FinTech, innovations are classified into seven key technology categories: mobile transactions, cybersecurity, data analytics, blockchain, robo-advising, peer-to-peer (P2P), and internet of things (IoT).

As per (Chen et al. 2019), following is a brief definition of each of FinTech categories:

Cybersecurity refers to the hardware and software used to secure and protect financial privacy and safeguard against fraud or electronic theft. Key technologies include encryption, tokenization, authentication, and biometrics such as MasterCard biometric card.

Mobile Transactions refers to the technologies, which enables payments using mobile devices such as smartphones, and by using technologies like smartphone walled and digital wallets. Apple Pay and PayPal are good examples for mobile transactions.

Data analytics are the technologies and algorithms, which enables the analysis of data, either transactions or consumer financial data using technologies such as big data, artificial intelligence, and machine learning. A real-world example is Bloomberg Social Sentiment Analytics.

Blockchain is a primary application to financial services with distributed ledger technologies; including cryptocurrency, smart contracts, and proof-of-work such as Bitcoin and Visa B2B Connect.

Robo-advising is defined as computer systems or programs that provide customers or portfolio managers with automated investment advice, whereas the key technologies of this component are artificial intelligence, big data, and machine learning. Betterment is an example.

Peer to peer is any software, platforms or systems that allows customer-to-customer financial transactions presented by technologies such as Crowdfunding and P2P lending.

Internet of things (IoT) is defined as the technologies correlated with smart devices that collects data and communicate it in real-time through the internet.

Digital payments are an outcomes of a digitized financial system, encompassing online payment methods along with modes to electronically transfer funds. This comprises of online and mobile based payments alongside to the application of cryptocurrencies used as cellphone apps, e.g., Benefit Pay or B-Wallet. Such means of digital
paperless money transactions bring about the need for also not carrying a credit card (Razzaque et al. 2019).

With the creation of National Payments Corporation of India (NPCI) as a nodal infrastructure agency for small payments and real time payments using Immediate Payment Service (IMPS), there was a fillip to the system and growth of electronic payments started in right earnest. Licenses were issued to forty Prepaid Payment Instruments (PPIs) and ten payment aggregators to operate in India (KPMG, 2016). PPIs began with railway ticketing, bill payments, recharges and small remittances and gradually captured larger portions of the customer wallet by offering convenient and secure options for small payments and transfers and by creating touchpoints for cash loading and cash out, acting as Banking Correspondents, thus creating a new set of service providers to assist in this low-margin, high-volume business. As per PWC (2015) “in a span of less than eighteen months, PPIs contributed to more than forty percent of all IMPS transactions between banks and non-banks connected to IMPS switch. Despite the friction faced by lack of cash-out and interoperability, PPIs deserve much credit for spurring an almost eight-fold increase in prepaid transactions” (Annex 1).

2.3 FinTech in Bahrain

Bahrain’s initiatives to emerge into digital transformation and the launch of Bahrain FinTech Bay in 2018 has introduced Bahrain as the leading FinTech Hub in both the Middle East and North Africa (MENA) Region. Bahrain acknowledged the importance of technology utilization to reinforce the economic growth, create job opportunities and human development, the financial sector is no exception as Bahrain has been the most established financial center for more than 40 years due to the advanced regulatory system and experienced workforce. Today, Bahrain is the home to 403 institutions, including 104 licensed banks, 59 investment firms, 144 insurance companies, 53 specialized licenses and 16 capital market firms. The financial and banking sector considered as the largest non-oil contributor in Bahrain’s GDP. On the other hand, the central bank of Bahrain (CBB) is recognized as one of the most advanced supervisors in the region, as it uses a tried-and-trusted regulatory framework, which facilitates the best practices and has a leading role in achieving regional standardization.

Bahrain embraced the FinTech industry with the development of financial innovations and initiatives to encourage the growth and contribution of the financial sector in Bahrain’s economy, and to become a leader in the region and nurture the growth of digital banking and financial services. CBB provided a regulatory framework to facilitate FinTech innovations, and has established a unit within the bank structure called FinTech & Innovation unit to ensure the enforcement of best practices and implementation of regulatory of the financial services in Bahrain. As a result, this has contributed in the success of making Bahrain Middle East’s leading FinTech hub, also, the flexibility and forward-looking regulation system that is adopted by CBB has provided an extreme support to FinTech innovations. In an effort to empower Bahrain Financial services sector CBB regulated Bahrain FinTech Bay, the region’s largest hub. In addition to initiating a Regulatory Sandbox, which is the only onshore sandbox that allows startups, FinTech firms, and licensees to provide innovation in banking and financial solutions, also,
it allows the issuance of Crowdfunding regulations for both conventional and Islamic Banking services and other initiatives within the financial services sector.

Following are some of FinTech initiatives implemented in Bahrain:

**Internet of Things (IoT):** Bahrain was the first to issue Internet of things (IoT) connectivity standards in the GCC and support the use of IoT (NB-IoT) frequency band systems within the international mobile communication systems. Today, there are several IoT projects in Bahrain and Marasi Portal is one example, the project is by the Ministry of Transportation and Telecommunication and it is a fully automated portal established to enable the customers to access different port services easily, the services includes licensing, handling charges, ship movements, etc. In addition, the portal acts as an auto notifications system, it notifies PMA (Ports & Maritime Affairs) customers through e-mails or SMS. The portal is integrated with a financial service, to allow the customers to complete all procedures and applications electronically; the portal can be accessed over the internet, from anywhere and at any time.

**Blockchain:** The economic development board in cooperation with information and e-government authority is developing a national strategy for blockchain technology in Bahrain, as to the significant benefits achieved by the implementers of this technology to the business operations, the benefits includes greater transparency, better security, enhanced traceability, increased efficiency with a speed in transactions at a reduced cost. The blockchain vehicle registration project was initiated by the general directorate of traffic, and considered a noticeable example of blockchain technology usage. The project employs the latest technologies to develop and enhance the registration process as it reduces the cost of maintaining basic vehicle data and enables vehicle registrars to acquire accurate and updated vehicle information while achieving better information management efficiency and transparency with an improved consumer protection measures.

**Robotics:** Robotic technologies have been introduced in Bahrain lately within the FinTech industry, mainly by banks to facilitate customer service delivery. In 2019, Bahrain Islamic bank (BisB) has launched its first virtual employee “Dana”; this was part of the bank’s efforts in transforming their business approach by providing leading and innovative financial solutions. “Dana” is supposed to enlighten the public with general information on the bank’s products and services, provide tips and insights on FinTech and financial trends digitally, and support the bank in improving the customers interaction and engagement across BisB’s digital platforms. This is in line with BISB’s objective to simplify customer's financial services through enabling them to perform daily transactions with ease and convenience (The Newsroom 2019).

**eWallet:** Many entities and financial institutions have introduced an on-spot payment method through eWallet technology, such as Benefit Pay by Benefit Company, b-wallet by Batelco. As of now, Bahrain is working towards making such eWallet solutions as an official payment method to facilitate payments within national eGovernment channels. The usage of FinTech in Bahrain has proved that Bahrain is proactive in adopting to the latest technology within financial service sector; this is proven during the time of coronavirus pandemic, which demonstrated Bahrain’s support to FinTech organizations and encourage ministries and government authorities to digitalize and enable government
services online. At this time, public sectors and companies around Bahrain work their way to provide their services through online platforms and ensure business continuity. Many startups have supported the users in this difficult time by providing forward-thinking initiatives such as: Weyak that is another startup application, which is a digital pharmacy, offering customers with medications and essentials for customers to get their prescriptions and medicine while staying safe at their homes during the current situation (Razzaque et al. 2019).

The turn from the physical offering will encourage and surge the user of FinTech platforms in the world and in Bahrain specifically, in March only, Bahrain’s national electronic wallet known as Benefit Pay announced an increase of 1,257 percent in the number of transactions through Fawri+ service with a total of $273 million. The significant increase in Benefit Pay transactions demonstrates the willingness for new technologies particularly during this time whereas physical services are very limited or even unacceptable due to the enforced health restrictions, while the growth of usage also indicates the awareness and commitment of Bahrain’s citizens in making the necessary precautionary measures during this time. According to the co-chief investment officer of Bahrain Economic development Board David Parker, cryptocurrencies and online banking are some of the products which significantly seen an increase in transactions during the coronavirus pandemic. By 2022, it is expected that MENA FinTech market will be worth $2.5 billion (Razzaque, Hamdan, and Cummings 2019).

2.4 Women in Bahrain and FinTech

In 2011, the Supreme Council for Women was established with a vision “to Equal partnership towards building a sustainable and competitive society”, as of then a national plan was created to support women in Bahrain and outline the goals and initiatives towards ensuring women involvement in the society. One of the key initiatives achieved by the Kingdom of Bahrain is the Award of Her Royal Highness Princess Sabeeka Bint Ibrahim Al Khalifa for Bahraini Women Advancement, the award reflects the belief of Bahrain in the effective role of women in society and was initiated to support and empower working Bahraini women. The award encourages ministries, and both public and private institutions to support and empower women and ensure their success. In addition, it aims to increase the number of women holding executive positions, and ensure the commitment of ministries and public and private institutions toward the policy of non-discrimination against women (Awards and Initiatives).

FinTech industry in Bahrain is evolving rapidly and expected to grow in the upcoming years. The support of the kingdom of Bahrain and enthusiasm towards offering opportunities to both local and international organization ensures the FinTech market continuity, such as offering sandbox regulatory and support crowdfunding. The initiatives Bahrain has taken towards growing FinTech market in the country would simultaneously increase women opportunities within the FinTech industry in Bahrain. As of 2018, according to Central Bank of Bahrain 39% of Bahraini work force within the financial services industries are female employees, in addition, women hold 33.2% of the Bahraini managerial position within the financial sector (Women in FinTech Bahrain).

In 2018, the Economic Development Board Bahrain has launched women in FinTech Bahrain (WIFBH) initiative to support women in Bahrain within the FinTech field and
promote growth within the industry; the initiative founded to act as a community that attracts women in FinTech industry to benefit from the experience and guidance of fellow expertise. One of the main goals of this initiative is to encourage diversity and inclusion towards creating opportunities in business, education, innovation, and entrepreneurship, in addition to raise awareness amongst the community of FinTech that would lead to creating career opportunities locally and globally in finance and technology. WIFBH is a platform to allow aspiring women entrepreneurs to meet fellow female expert who can be mentors to them and provide guidance through challenges within the Fintech field.

WIFBH efforts towards empowering women within FinTech industry are represented by a key initiative is hosting in-depth FinTech awareness workshops in Bahrain focusing on FinTech in general with an overview of the available opportunities, as well as offering training to develop the soft skills required in the industry. Another initiative is to collaborate and create partnerships and alliances with different entities in order to engage women within the field, and to provide opportunities for women in different programs such as C Her Grow program, which provides the chance for women who aspire to advance in a financial management leadership role, or interested in FinTech industry.

We are in a dynamic era where women have proven that no field is off-limits, WIFBH plays a great role in leading the way towards transforming and reshaping the financial markets by filling the gender gap and normalizing women involvement in a traditionally male dominant sector, the initiative encourages women to progress and empower them within Fintech industry. Consequently, LATTICE80, in partnership with Miss Kaya have published a list containing the Top 100 women in FinTech for the year 2019, two Bahraini women have made it to the list and were recognized as top leaders in Fintech globally (LATTICE80 2019).

3 Conclusion

The research paper started with reviewing the definition which we can summarize as the collaboration of innovative IT solutions used to ease providing financial services, and it is with no doubt that FinTech is the new trend in the financial market. After that, the history and evolution of FinTech was presented. The first focus of this research was on FinTech technologies implemented in Bahrain, and how Bahrain is recognized as the leading FinTech hub in the region. The aim of this research was to explore women empowerment in Bahrain and specifically women role in FinTech within Bahrain and the initiatives taken towards supporting women, which was reviewed earlier, and we can say that WIFBH platform represents a community of women with great projects ahead to support and empower women within Fintech industry. The purpose of WIFBH has proven the impact of the initiative as two Bahraini women have made it to the top 100 women in FinTech list globally. This is a recognition for WIFBH goals towards its efforts to spread the awareness of FinTech in Bahrain and display the opportunities of women in the FinTech field. Moreover, the achievement of the Bahraini women reaching to the Top 100 women in FinTech introduces an opportunity and encouragement for aspiring females to join and pursue a career in FinTech industry, while entrepreneurs can reach out to WIFBH to meet mentors who can assist them and guide them through challenges.
and various opportunities in the field. Also, the women in FinTech should look into initiating a virtual presence for an assurance of awareness of this initiative from, and through, virtual communities for women, as also euphuized by Karolak and Razzzaque (2013), Razzzaque and Karolak (2011), as well as Jalal-Karim and Razzzaque (2010) who express the importance of virtual communities, and community of practices, as well as, community of interests, for not only sharing quality knowledge, but also reaching quality decisions, whether it is in the healthcare sector or, as in the case of this study, the financial sector.

Bahrain is a leader in the region as a FinTech hub, and have demonstrated strong ability to use financial technology services specifically during the time of crisis such as the coronavirus outbreak, on the other hand women plays a huge role and is part of the Fintech revolution in Bahrain. This research paper is limited as it is based on review of existing articles, as a proposal for future research, it is recommended to evaluate women role in Bahrain within Fintech industry further, whereas different methodologies such as interviews and surveys can be used to examine women role within FinTech. In addition to overview the awareness of Fintech among women within the financial industry and their knowledge on the initiatives to empower female leaders within the financial industry in Bahrain. Furthermore, to explore the challenges faced by women within FinTech industry in Bahrain.

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