

The Role of Financial Technology in Developing The Banking Industry - A Comparative Analytical Study Of The Malaysian Experience And The Kingdom Of Saudi Arabia.

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Abstract.

The study highlights the role of using fintech technologies in the banking industry, such as blockchain technology, smart contracts, artificial intelligence, cloud computing, big data analysis... in terms of product quality and reducing effort, time and even costs. The Malaysian and Saudi experience is considered a model in this regard. The field through strategic visions and establishing the legislative and regulatory infrastructure to adopt fintech technologies. Thus, the two countries are considered among the pioneers of fintech in the banking sector through the results and numbers achieved in a period not exceeding ten years from 2015-2022, which is what the study details through its axes.

Keywords: *fintech; banking; blockchain, Malaysia, Saudi Arabia.*

Subject classification codes: O33, G21, N75.

I. Introduction:

The banking industry has witnessed an amazing development and great global openness in addition to the development of banking products and services, with a high level of competition in the sector, especially after the emergence of modern technological technologies and their adoption in various economic and financial sectors,

with increased customer satisfaction and improved performance indicators in banks and banks, with the integration of that technology with products. It has given banking services a new face to banking financial transactions, as distances have become shorter and access to them is greater in order to achieve the principles of financial inclusion. Blockchain technology has begun to allow the settlement of various contracts through so-called smart contracts, and data analysis has contributed to making a number of correct decisions, with regulatory technology working to implement Financial compliance standards in banks. All of this has prompted countries and governments to adopt serious strategies to reach an advanced degree in the use of so-called fintech techniques. Perhaps examples of these countries include Malaysia and Saudi Arabia as recent experiments. Through this research paper, we seek to conduct a comparative analytical study regarding the extent of progress. The two countries are adopting fintech and its technologies while drawing lessons.

Based on the above, we can ask the following main question:

To what extent does the banking sector in Malaysia and Saudi Arabia benefit from financial technology techniques?

The main question is branched into the following sub-questions.

- What are financial technology techniques?
- How did Malaysia embrace this technology? How advanced is it in this field?
- Has Saudi Arabia succeeded in creating the appropriate infrastructure and regulatory environment for this?

To answer the main question and sub-questions, we set the following study hypotheses:

- Financial technology has tools and techniques that reduce effort, save time, and eliminate the role of mediation, such as blockchain, smart contracts, crowdfunding, and peer-to-peer finance
- The Central Bank of Malaysia has created an advanced digital infrastructure while enacting a set of regulatory and compliance rules for the work of banks in this field
- Saudi Arabia has adopted a clear strategic vision for digital transformation that will help quickly adopt Fintech technologies.

the importance of studying:

The importance of the study is evident in showing the success parameters of the banking sector in adopting Fintech technologies to serve customers and banks, as well

as providing lessons learned from the countries under study to be taken as a model for adopting this technology.

Objectives of the study

The study aims primarily to identify the opportunities and threats that result from financial technology techniques by detailing the experience of Malaysia and Saudi Arabia, in addition to analyzing the reality of growth for investments, transactions, and services provided by the banking sector of the two countries, relying on fintech techniques.

Study methodology

In the study, we relied on the deductive approach through the description tool of concepts related to the theoretical rooting of the subject of financial technology and its various technologies, and the analysis tool to read and analyze data and statistics on the development of financial technology investments in the banking sector in the countries under study.

Concepts about Financial technologie

The topic of financial technology has received great attention from researchers and specialists in the field, and several definitions have been provided for this topic, including:

1. **Definition of financial technology:** Fintech is defined as those companies that combine financial services with modern and innovative technologies as a basis that provide the market with an offer of Internet-based products and services with the aim of attracting customers that are more easy to use, effective and transparent than those products and services available before¹.

Financial technology is every means, system or technology that is automatically enabled through modern technological technologies based on the Internet, which facilitates access to and use by the largest group in society. It also contributes to changing the nature of financial and banking products, as it is a combination of modern technological techniques and applications and financial operations. And banking, whether traditional or innovative, to obtain new financial products and services characterized by modernity, innovation and quality with ease of access and use everywhere and at any time.

From the previous definitions, we can extract a number of characteristics

related to financial technology, which are:

- It is based on technological devices and Internet networks.
- It is characterized by speed of performance and accuracy.
- Facilitates access to banking financial products.
- It is characterized by modernity and innovation.
- More effective and transparent.

2. **The importance of financial technology:** The importance of fintech for the banking sector is evident in that it offers a set of new opportunities and capabilities, which allow this sector to renew and develop, and therefore this importance is represented in the following²:

- Fintech helps banks, especially small ones, through its technology in the field of payments, insurance, and wealth management, given the limited number of its employees and the obsolescence of its systems, compared to large and technically advanced banks.
- Reducing the costs of various transactions, by providing services via mobile phone, and various remote transaction settlement devices, thus achieving greater profit and lower cost, with the largest possible coverage of the number of clients, and gaining clients in the pursuit of financial inclusion.
- Regulatory technologies reduce the burden of supervisory and regulatory procedures related to compliance, through regulatory technology.
- Confronting the risks of concentration, because fintech allows expansion and diversification in various transactions, such as lending and investment, with different social groups and a diverse geographical environment.
- Making the financial industry more flexible and intelligent by dealing with various problems.
- Encouraging automatic investment financing for all classes of society and monitoring returns.
- Helps develop models, methods and techniques for risk management in various sectors.
- It is considered a guarantee and insurance for financial transactions and customer services using advanced regulatory techniques and algorithms to detect defects or breaches.

3. **The opportunities that fintech offers to banks:** fintech has very important

opportunities that the banking sector should exploit and benefit from, which we list below³:

- Increasing access to capital: through p2p and ECF technologies that provide credit to borrowers, from small and medium enterprises, due to their difficulty in accessing traditional bank borrowing, and thus new access to equity financing.
- Establishing financial inclusion: Fintech opened the field of finance to multiple groups that were deprived and marginalized in traditional finance and unable to access financial and banking services.
- Quality of banking service: FinTech companies improve the traditional offerings of banking services in a flexible and effective way, through the use of automated advisors and robots to help the customer experience the investment.
- Cost advantage: Fintech companies provide transactions at the lowest costs and speed for their banking services, such as cross-border transfers, as well as reducing risks related to the counterparty, such as instant settlement via blockchain technology.
- The positive impact on financial stability due to increased competition: the entry of new competitors into banking transactions via Fintech technologies, and the division of the banking services market, which reduces systemic risks.
- RegTech: It helps the banking sector achieve compliance with regulatory regulations and follow up on precautionary requirements for preparing reports and consumer protection, while improving compliance and risk management, and is considered a means of dealing with change in the regulatory environment and reducing costs.
- Security: Blockchain technology provides it through the approved encryption protocol, with techniques to hide identity and prevent leakage of data or information.
- The use of modern technologies and innovations accompanying the emergence of fintech gives the banking sector great incentives and privileges to attract it and enter into its business strategy, and this is due to the diversity of opportunities it provides in terms of quality, innovation, availability, and accessibility of the product. It also imposes challenges and confrontations to achieve the goals by relying on fintech. We present the following: The five most important elements related to the opportunities and challenges of integrating

fintech into banks:

- Improved digital banking experience for customers.
- Customized services for clients, with big data and cloud computing operations.
- High data security, better compatibility with network data, and providing the most appropriate regulatory environment.
- Cost-effectiveness of financial products and services based on blockchain technologies.
- More efficient transactions and better financial innovations while reducing risks.
- Fintech technologies are not devoid of many threats and challenges that banks and their users should be wary of and take into consideration more seriously.

4. The impact of fintech on the banking sector: The impact of fintech on banking activity is evident in highlighting the results of the interaction between the two sectors, as⁴:

- Fintech encourages banks to provide services via the Internet, at the lowest cost.
- Creates competition in the banking sector to raise the level of quality and innovation, and thus achieve higher profit rates.
- A new channel for transmitting monetary policy and a lower-cost source for collecting financing is the fintech.
- Interaction achieves the highest levels of financial inclusion, which increases economic development.
- Availability of services, modernization of the financial infrastructure, more effective management of risks in the sector, and achieving financial stability.
- Openness in light of transparency increases customer confidence.
- Shortening time, easy access to products, reducing effort such as transportation, conducting transactions remotely, and diversity of choices, are all new features that FinTech has introduced to the banking sector compared to its previously accustomed traditional state.

5. FinTech techniques in the banking industry

- **Blockchain:** It is a shared database that acts as a record of buying and selling transactions or any other transaction, allowing information to be stored without losing, modifying or deleting it, using encryption keys, and distributing it to

subscribers' computers across the world. Therefore, it is characterized by a precautionary measure and it is secure against any manipulation or fraud, and it is a platform or technology applicable to all sectors of the economy, banking, health, and education⁵.

- **Smart contracts** and how they work: Smart contracts can be defined as contracts that are programmable and capable of automatic execution upon the availability or occurrence of pre-defined conditions. They are designed to automate transactions and allow the parties to agree on the outcome of the event without the presence of a central authority. Smart contracts are also characterized by programmability and the ability to ensure multi-signature authentication⁶.

Or a smart contract is any self-executing program that operates in a distributed ledger environment, and is often intended to automatically execute transactions agreed upon by the parties. Implementation can be based on triggers provided by users or extracted from the technical environment in which the transaction is dealt⁷.

- **Crypto currencies:** They are a decentralized currency that uses cryptography to create units and verify the validity of transactions away from governments and central banks, such as Bitcoin, Ripple....⁸.

Through the same report, a distinction was made between three types of virtual currencies according to compatibility and interaction with traditional currencies and the real economy. First, virtual currencies that can be used in virtual system transactions only, such as online games (World of Warcraft Gold). Second, virtual currencies that are unilaterally linked to the real economy. Converting the purchase of currency with traditional money, which is later used to purchase virtual services, with exceptions for some real goods and services, such as Facebook credits, and the third type: virtual currencies linked to the real economy⁹,

- **Asset management techniques:** Wealth and asset management platforms are mostly based on five business models represented by comparison sites that provide clients with a range of financial services with the availability of access capabilities such as banking services, investment management, and the automated advisor works to provide advice automatically based on the algorithms of information provided by the investor to determine their risk tolerance and suggest optimal portfolios.

Social trading and investment platforms combine the features of social

networking and integrate information sharing and online social interaction. They are called copy trading platforms or visual trading platforms. They offer a range of investment products such as exchange-traded funds, stocks, commodity currencies, derivatives, psychoanalysis on social media sites, and research focusing on Collecting information and intelligence data to help financial institutions and investors make investment decisions¹⁰.

- **Personal finance management platforms:** They are defined as those services that make it easier for people to manage their wealth, relying on mobile applications and Internet networks, by providing timely information, as well as the ability to access the user's banking and financial data, that is, everything that helps in managing the home's finances through its budget, saving and investment. It helps individuals manage debts and other personal financial aspects so they can achieve their goals. It allows controlling income and organizing expenses within detailed financial plans¹¹.
- **Crowdfunding:** It is defined as a process of collecting or raising capital, in small amounts and from a large number of investors, without traditional financing intermediaries (banks, brokers, stock exchanges), but typically through an online platform, with three direct participants participating. In the financing process, they are people or organizations that provide funds for the project, potential investors to provide funds, crowdfunding platform¹².
- **Artificial intelligence and its advantages:** It is an innovation that uses computers and algorithms to increase the simulation of human intelligence. It relies on big data and modern statistical methods to give an accurate and specific guess and answer. It also allows the automation process to achieve greater effectiveness and efficiency¹³.
- **Machine learning:** It expresses the sum of techniques and tools that allow computers to think by creating mathematical algorithms based on accumulated data and smart contracts¹⁴.
- **Regulatory technology:** It is called information technology (IT) and it helps companies manage regulatory requirements and compliance obligations by defining regulatory provisions on business models, products, services, functional activities and operational procedures, as well as enabling compatible business and data systems, and helping to control regulatory, financial and non-financial

risks. And its management¹⁵.

- **Insurance technology:** These are companies led by financial technology that enter the insurance sector, and take advantage of new technologies to provide coverage for a more digitally intelligent customer base, through which insurance companies seek to expand the scope of innovation, create competition for incumbents, and immediately implement customer desires¹⁶.
- **The Internet of Things:** It expresses the digital interconnection of everyday things with the Internet, that is, the connection of the Internet to other things through sensors that send and receive data in a continuous manner by transmitting and interpreting it and then implementing actions. Through it, a radical change can be brought about in the way of life and business, both in terms of Providing opportunities for access to data or services in education, security, health care, transportation, smart cities, foundations of digital economies, industry, cybersecurity,....¹⁷
- **Big Data Analysis:** These are large-scale, high-capacity, and diverse information assets that require innovative and cost-effective forms of information processing to improve insight and decision-making¹⁸.
- **Cloud Computing:** Cloud computing solutions act as a platform to facilitate banks' work in storing, managing, and accessing data within a high level of security for that data. Network systems also reduce infrastructure costs and help banks build flexible operations¹⁹.

II. Financial technology in the Malaysian and Saudi banking industry

1. **The Malaysian experience:** We chose the Malaysian experience for study for several reasons, including the development of the organizational structure of the Malaysian banking sector (dual banking system), which allows reaching more accurate experimental results that allow analyzing the status of fintech technologies objectively.

Digital technologies used in Malaysian banks.

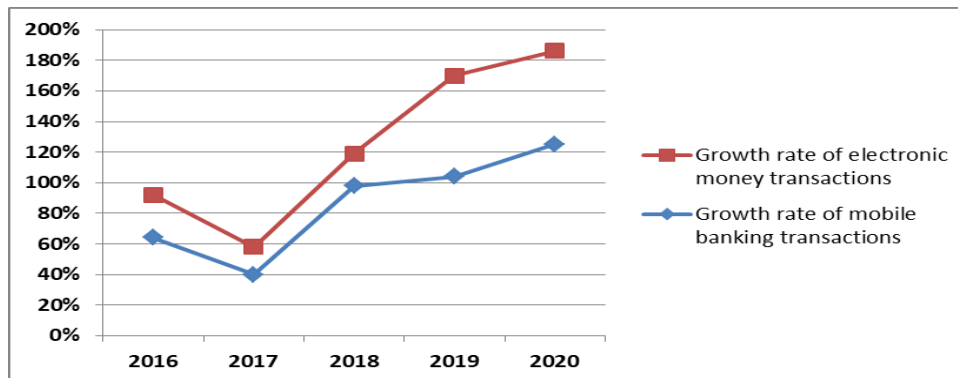
- **Payments technology:** Under the authority and supervision of the Central Bank of Malaysia, which defines two categories of payment systems, the first category has a greater value and includes funds between banks and the transfer of securities via RENTAS (real-time electronic transfer of funds and securities),

and the second category is embodied in the retail payment system and includes systems and tools. And channels. The Central Bank of Malaysia also licenses non-banks to provide payment services on the condition that they are subject to the laws of the entities authorized to regulate operations²⁰.

Internet-based banking services are among the most prominent means of digital payment, and the following data shows the value and volume of these payments during the period from 2016-2020, as the total number of online banking services transactions in 2020 in Malaysia reached 1.162 million transactions worth 8.858 billion Malaysian ringgit, and online banking services Mobile phone transactions amounted to 936 million, while credit card transactions amounted to 1.833 million transactions worth 1.184 billion Malaysian ringgit, which is explained by the response of customers to digital transformation in accordance with the strategies taken²¹.

- **Mobile banking and electronic money services** have the highest growth rate in Malaysia, due to their importance and characteristics that have encouraged adoption and trust in them.

Figure N° (01): Growth rate of mobile banking and electronic money transactions 2016-2020 .

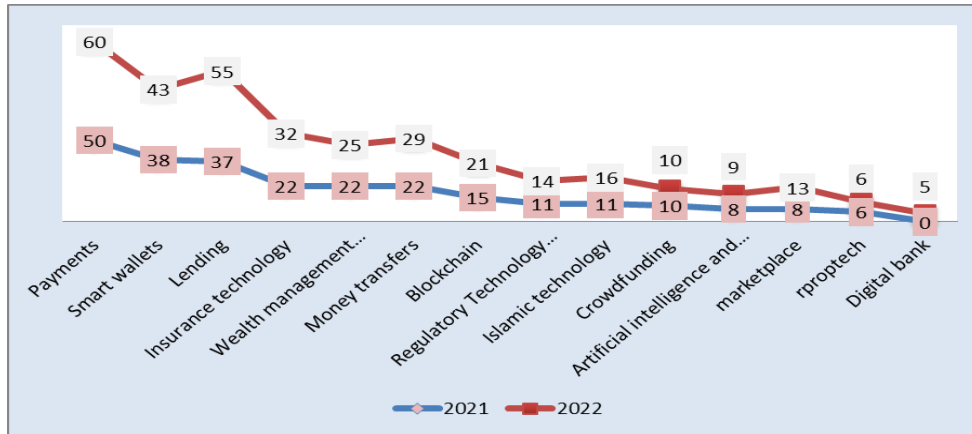


Source: Prepared by the researcher based on: Fintech News Malaysia ; **MALAYSIA FINTECH REPORT 2021**; <https://fintechnews.my>. (24/01/2022).

In the figure N° (01) E-wallet operators in Malaysia, including Ant Group Touch'n Go Groupe (subsidiary of Cimb Bank) technology, with about 15 million users under Touch nGo e-wallet technology, and Axiata Digital Great Eastern Life with oost technology, with 8.8 million users²². The official authorities in Malaysia sought to attract modern technical innovation from fintech technologies by laying legal and legislative foundations and providing the appropriate environment for this in order to codify the processes of providing digital banking services.

FinTech sectors in Malaysia's banking industry: The following figure includes the total number of businesses supported by fintech in various sectors, and they represent percentages of the total companies operating in fintech in Malaysia:

Figure N° (02): Financial technology areas in Malaysia until 2022.



Source: Prepared by the researcher based on: Fintech News Malaysia , **MALAYSIA FINTECH REPORT 202--2022**, <https://fintechnews.my>, (24/01/2022). And **Islamic Fintech in Malaysia Reality & Outlook**, report by INCEIF & ISRA & MDEC; decembre 2020, <https://www.inceif.org>, (02/08/2022).

Figure N° (02). The most companies operating in the field of fintech in Malaysia are the companies that are active in the field of payments, fifty companies such as payHalal and PayPal, followed by companies operating in the field of electronic wallets such as Alipay. fasspau, lending such as abir; bigpay; grabpay; ipaymy then wealth management and insurance technology such as finory; versa; wahed; bjak; aspirasi; compare; , companies working in blockchain, lending and Islamic fintech with crowdfunding and big data such as luno; blocktime; torum, ctos; experian ; wahed ; jumio in close proportions because these technologies primarily serve the banking sector and are characterized by wide sensitivity and are subject to very complex precautionary regulatory procedures to protect the financial and banking sector. What is observed within these companies is the presence of many companies in more than one fintech technology, which achieves the goals of financial inclusion and serves the principles of fintech, which is availability. And safety.

November 2020 The total number of fintech companies around the world reached 150 companies, more than 20 of which are located in Malaysia. After Malaysia became a leading country in the Islamic financial and banking industry, it was able to attract fintech investments, with the availability of a regulatory environment that

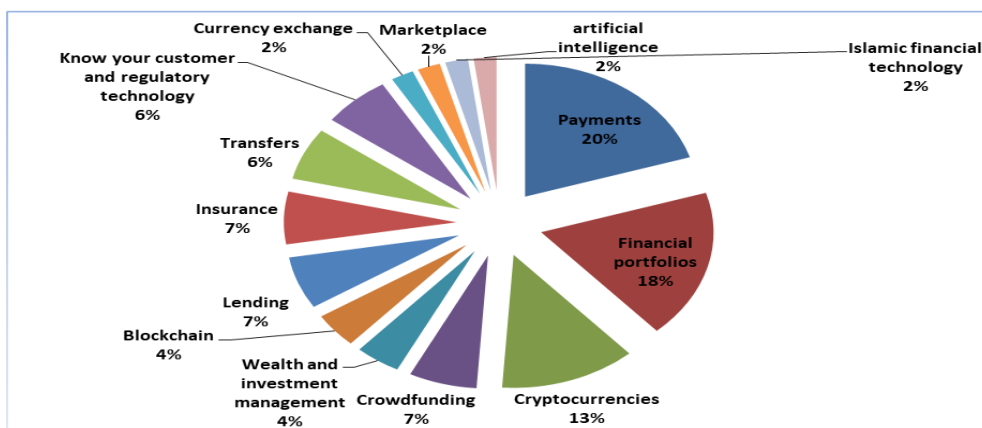
supports its activity²³.

Malaysia comes in fourth place after Saudi Arabia, Iran and the United Arab Emirates in terms of the size of the fintech market, with \$3.0 billion at the end of 2019 and a value of \$4.8 billion at the end of 2021. The United Arab Emirates preceded it with \$3.7 billion at the end of 2019 and a value of \$4.8 billion at the end of 2021, and Iran with \$9.2 billion. At the end of 2019, with a value of 19.1 billion dollars at the end of 2021, and Saudi Arabia with 17.9 billion dollars at the end of 2019, and with a value of 26 billion dollars at the end of 2021. These values highlight the extent of the value of the investments of Saudi Arabia, the Emirates, and Malaysia in expanding the scope of the fintech market within their various strategic visions and digital transformations, as the value of its size has grown. The Islamic fintech market in Saudi Arabia is worth \$9.10 billion during the period 2020-2021, the United Arab Emirates is worth \$1.1 billion for the same period, and Malaysia is \$1.8 billion, the value of the growth of the Islamic fintech market²⁴.

These are values that highlight the relative success of using fintech techniques, which suggests promising prospects for that industry, which has a positive impact on raising and developing Islamic banking in Malaysia, Saudi Arabia, and the United Arab Emirates.

Fintech companies in Malaysia by business model, comparison between 2017 and 2019: In a comparison between the years 2017 and 2019, fintech technologies witnessed significant growth, which highlights the increase in customer confidence and the desire to adopt fintech business models.

Figure N° (03): Contribution of companies to the financial technology industry in Malaysia in 2017 by business category



Source: Prepared by the researcher based on <http://www.statista.com> octobre 2021,

(25/12/2022).

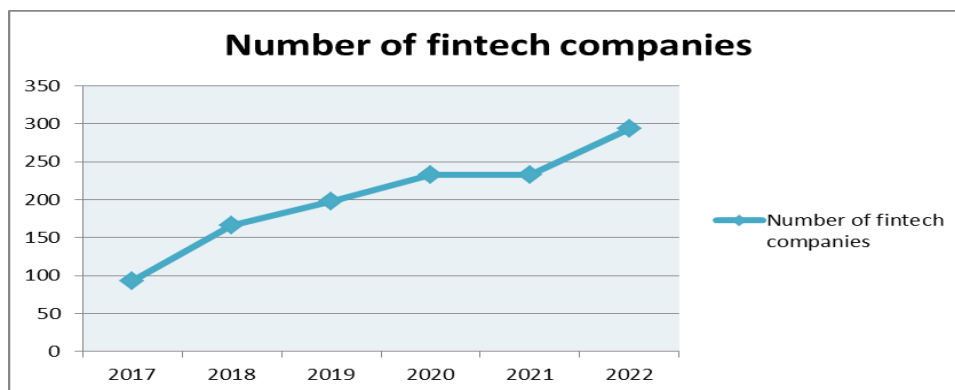
Fintech companies in the field of payments occupy 19% of the total companies in Malaysia, followed by financial portfolio and cryptocurrency companies, crowdfunding, wealth management and investment, then blockchain and lending companies, while Islamic financial technology companies represent 2% in 2017, which is the year of establishment for use. Actual fintech and Islamic finance techniques in Malaysia. Figure N° (03) .

The business models of fintech companies in Malaysia vary depending on the field and sectors, and there was a significant increase between the years 2017-2019 for the country, including:

In 2019, the percentage of crowdfunding and capital pooling reached 41% of the total companies, digital payments 32% of the total companies, digital lending 27% of the total companies, personal financial management 23% of the total companies, technical institutions for finance 14% of the total companies, Commercial Capital Markets 5% of total companies, Insurtech 5% of total companies, Asset Management 5% of total companies, Enterprise Financial Management 5% of total companies, Big Data, Artificial Intelligence and Machine Learning 5% of total companies.

Number of fintech companies in Malaysia: During the period 2017-2020, the Malaysian financial and banking authorities sought to lay the legal and regulatory foundations to pave the way for technical innovation in the banking sector, so the total number of fintech companies increased from 93 companies in 2017 to 166 companies in the following year, and the year 2020 reached 233 companies.

Figure N° (04): Number of financial technology companies in Malaysia during the period 2017-2022.



Source: Prepared by the researcher based on Malaysia’s Regulatory Framework, A Catalyst for FinTech Adoption , RESEARCHERS AT ISEAS – YUSOF ISHAK

INSTITUTE ANALYSE CURRENT EVENTS, Singapore , 29 September 2021;
 ISSUE: 2021 No. 128 ISSN 2335-6677.

Figure N° (04) This is explained by the availability of an incubating environment for the work of these technologies, as well as the existence of appropriate regulation and legislation to practice the activity, not to mention the need for the Malaysian banking sector for such innovations as it is the field capable of finding financing, driving investment and increasing economic growth rates in light of global openness to modern and contemporary technologies.

The value of fintech transactions in Malaysia:

Table N° (01): The total value of the volume of Fintech transactions in Malaysia during the period 2017-2023. (million dollars).

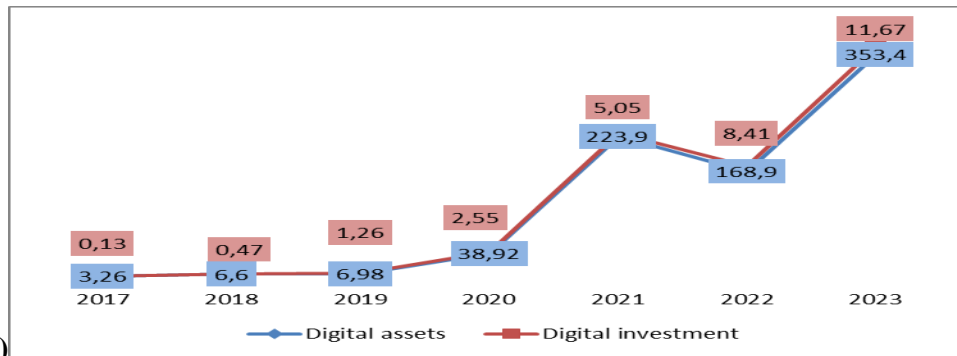
Transaction type	Alternative financing	Alternative lending	Digital investment	Digital payment	New banks or neo bank
2017	9	12	270	6.617	1.195
2018	11	14	629	8.788	2.262
2019	13	14	945	10.499	3.868
2020	14	13	1.144	9.694	6.502
2021	18	15	1.551	14.060	11.106
2022	21	16	1.921	18.074	16.822
2023	23	16	2.298	21.874	22.850

Source: Website via the link: <http://www.statista.com> , mai 2023, (01/06/2024)

All transactions of fintech companies in Malaysia witnessed an increase during the period 2017-2023, as alternative financing transactions moved from \$9 million to \$23 million in 2023, and alternative lending transactions increased from \$12 million in 2017 to \$16 million in 2023, while transactions reached Digital investment reached \$2298.00 million in 2023 after it was \$270 million in 2017. \$6617 million represents the value of digital payment transactions in 2017 and reached \$21874.00 million in 2023 with an expected \$29348 in 2025. New bank transactions increased from \$1195 million to 2017 to 22,850 million dollars in 2022, with an expectation of 31,525 million dollars until 2025. This continuous and permanent increase in all transactions explains the effectiveness of the policies and the seriousness of the strategies taken in Malaysia to

adopt fintech transactions in the banking sector. It also shows the increase in confidence and interest of customers in these transactions, which were able to affect the number of It has a larger number of customers and access to more geographical points. It has also contributed to raising investment returns in financial and banking services. Table N° (01)

Figure N°(05): Change in revenues from digital assets and digital investments (unit is million dollars)



Source: Prepared by the researcher based on the website:

<https://www.statista.com/outlook/dmo/fintech/malaysia#key-market-indicators>

juin 2024, (01/06/2024)

in the Figure N°(05) Digital asset revenues in Malaysia witnessed an encouraging growth for investors, which moved from \$3.26 million in 2017 to reach \$353.4 million in 2023, which explains the success of adopting financial technology techniques in asset management and investing in asset management technology in particular, and the same applies to digital investment returns. In the financial and banking sector in Malaysia, based on digital investment management technology, whose revenues increased from \$0.13 million to \$11.67 million, values that suggest the success of the opening up of the economic, financial and banking sector in Malaysia to various financial technology techniques and their effectiveness in managing the financial and banking sector.

2. The Saudi experience in adopting financial technology in the banking sector

The Kingdom of Saudi Arabia is another Islamic country that has developed a number of strategic plans for digital transformation and establishing infrastructure to reach advanced results in the field of using financial technology techniques, perhaps the most important of which is the 2030 digital vision.

Financial technology statistics in Saudi Arabia during the period 2016-2020.

During the period 2016-2019, this field witnessed growth in the value of transactions

exceeding 18% annually, or approximately 20 billion US dollars in 2019, most of which was represented in payments operations, with a percentage of 98% of the total user base, then the personal finance sector, with 30% of the total operations, in When payments via the SADAD platform increased at an annual rate of 11% during the same period, with a total of 270 million transactions in 2019, payments via smartphone increased by 352%, reaching 19.7 million transactions in April 2020 after reaching 4.4 million transactions in April 2019²⁵. Underlining strategies for openness and technology adoption in the Saudi financial and banking sector, as shown in the following table.

Table N° (02): Types of financial technology adoption strategies in Saudi Arabia.

Strategy type	Examples of the entity that adopted it	The objective of the strategy
Investment-led strategy	Riyad Bank	A program to support technology companies by providing financing, capital injections, and research and development worth 100 million riyals
Partnership-led strategy	The Banque Saudi Fransi contract, and the Al Rajhi Bank contract with Murex	Providing customers with the feature of using the digital wallet on the phone– . Providing treasury and financial markets systems via the X3 platform
Market-driven strategy	Alinma Bank and Saudi British Bank SABB	Launching the AlinmaPay digital wallet service that allows transferring money locally and internationally, withdrawing money while paying bills.... - Real-time international transfer service using the Ripple block

Source: Saudi FinTech and KPMG Annual Report (2019-2020).www.fintechsaudi.com (21/05/2024).

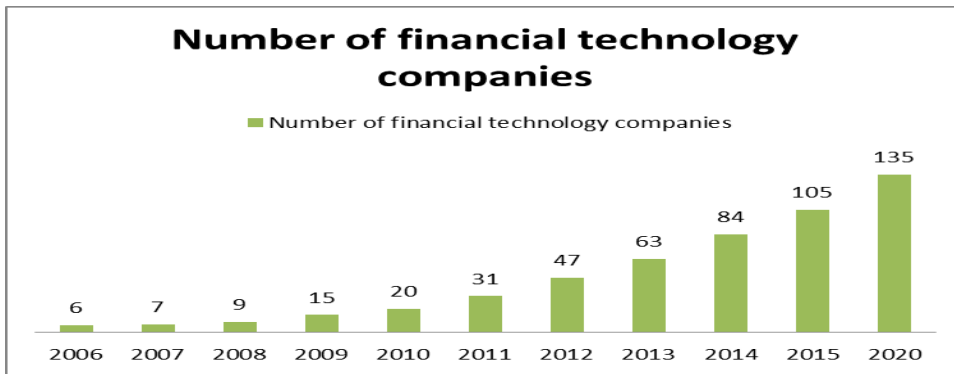
It is noted from the content of the table that the Saudi banking sector pays great attention to the areas of research investment and technical innovations for the sector, because of their importance in developing the industry and confronting the challenges of competition resulting from the recent uses of fintech, as well as diversification in products, which allows it to establish a significant new customer base that increases

capabilities. Competitiveness of banks and banks. Table N° (02).

Fields and uses of fintech in Saudi Arabia: There are various areas of using Fintech in the banking sector in Saudi Arabia within the Kingdom's Digital Vision 2030, with the aim of achieving financial inclusion and diversifying the Saudi economy as a whole in a way that contributes to its development. Among the most important areas of using FinTech in the Kingdom of Saudi Arabia are²⁶:

- Lending and financing through loan processing, credit rating, peer-to-peer lending or crowdfunding, from leading companies in this field.
- Payment and currency exchange operations, via mobile phone/e-wallets, payment gateways, payment management, peer-to-peer payment, payment infrastructure, such as Paytm, Stripr.
- Personal finance and treasury management through account aggregation networks, smart cash management, and savings solutions, such as Mint, Acrons.
- Banks and their infrastructure within the field of competitive banking, application programming methods, operational improvements for banks, such as (Plaid, Antifind)
- Business solutions and information provision through business tools, cyber security, data management, market aggregation networks, research models (such as confluent, tanium).
- Financial markets, such as investment brokerage operations, new trading models, such as Wealthfront and Robinhood.
- Raising private funds, crowdfunding based on the reward system of assets supporting digital currencies, such as (kickstarter; Circleup.)
- Insurance, comprehensive insurance, tele-insurance, insurance market aggregation networks, peer-to-peer insurance and operational improvements to insurance, such as Joinroot and Policybazaar.
- Regulation and risk management, technical regulation, technical supervision such as Trulioo Fenergo.

Figure N° (06): The development of the number of financial technology companies in Saudi Arabia during the period 2006-2022.

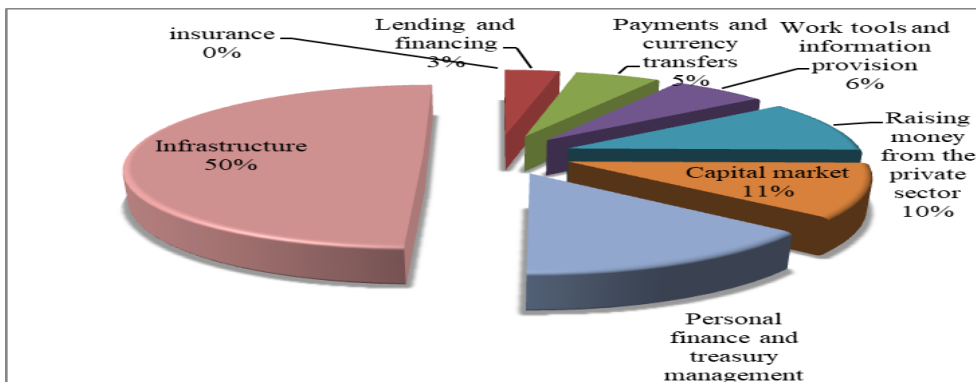


Source: Prepared by the student based on the statistics of the Saudi Fintech Report (fintechsaud) and Ocean Xer Management Consulting Company: www.fintechsaudi.com, (01/06/)2024

Figure N° (06). We note from the figure above that there is a clear development of financial technology companies operating in Saudi Arabia, as they increased from 6 companies in 2006 to 135 companies in 2020, an increase estimated at 129 companies over 14 years, and this is an indicator of the development of the financial and banking sector in Saudi Arabia, which has begun to attract investments. Fintech companies: Financial technology companies operating in the Kingdom of Saudi Arabia continued to increase, reaching 147 companies in 2022²⁷.

Annual growth rates of financial technology companies in the Kingdom: The growth of active fintech companies has been witnessed across most categories, especially infrastructure categories, and this is evidence of the Kingdom’s readiness to adopt banking services based on fintech technology

Figure N° (07): Annual growth rates of financial technology companies by category up to year



Source: Prepared by the researcher based on the Saudi Fintech 2022 annual report: <https://fintechsaudi.com/wp->

[content/uploads/2022/11/FintechSaudi_AnnualReport_21_22E.pdf](#),

(21/05/2024).

The figure N° (07) above clearly explains Saudi Arabia's long-term vision of adopting FinTech by investing in the basic infrastructure to create the appropriate digital environment for the actual use of FinTech technologies, as the infrastructure growth rate reaches 600% as a growth rate from year to year, followed by personal finance technologies and then the capital market each year. This demonstrates the success of Saudi Vision 2030 for digital transformation and the adoption of fintech technologies in the Islamic and traditional banking sectors.

Companies that are in the idea stage before implementation in the Kingdom represent 37% of the total companies, and 33% of them are in a very advanced stage of actual work. As for the companies operating in an advanced stage, they represent 30% of the total companies operating in the Kingdom. Where are these companies distributed according to sector? Business: We find that 30% work on developing payments, 13% on business development and providing information, and 1% on digital banking services²⁸.

Achievements of the project to develop the Saudi financial and banking sector

based on Fintech technologies: Comparing the value of the size of the fintech market between Saudi Arabia, the Emirates, and Malaysia shows the largest volume of investments in Saudi Arabia in the first place, followed by Malaysia and the Emirates during the period 2019-2021. This has an explanation for the fact that the Kingdom of Saudi Arabia has a modern strategy and trend towards adopting fintech technologies compared to the Emirates since 2017 and Malaysia since 2015.

examples of fintech platforms and technologies operating in the Saudi Islamic banking sector:

Salfa platform: The first platform authorized by the Saudi Central Bank, which provides consumer financing using fintech technologies such as artificial intelligence and machine learning language for credit pricing and the financing process. It also uses information technology for the purpose of developing the services provided and finding ways to speed up decision-making in light of the possibility of easy and quick access to information. To obtain the necessary financing through financial advisors, the platform also builds personal files for clients for follow-up and analysis in making current and future credit decisions²⁹. It can be considered a financial technology advance platform used by Saudi banks, both Islamic and conventional, to provide personal financing.

Raqamyah digital platform is a crowdfunding platform, authorized by the Saudi Central Bank, specializing in financing institutions and small projects that seek to find direct financing in exchange for competitive murabaha returns. The platform connects creditworthy institutions and small projects seeking financing with individual and institutional financiers, where it becomes possible for financiers to finance many profitable institutions and projects. The platform acts as an intermediary to accept financing for creditworthy institutions and projects. It pays and transfers financing to the projects and also recovers the value of the financing and Murabaha returns to the financiers. The platform is also distinguished by the fact that it provides ease for submitting a financing request, which amounts to 7.5 million Saudi riyals, for a period extending from 3-24 months. Files are processed with maximum speed³⁰.

Conclusion:

Financial technology is considered the future of the financial and banking industry, and it is the technical innovation that has been able to advance the sector by encouraging competition and opening the field of investment to larger groups. Therefore, global financial systems must strive to create the appropriate legislative environment and infrastructure for these technologies to achieve the goals of openness and financial development, and perhaps from successful experiences. In this field, the State of Malaysia, which since 2014 and the Malaysian Central Bank Negara has been working on enacting procedures, measures and rules that encourage the use of various FinTech technologies and a constant keenness to achieve cybersecurity for these technologies. The Kingdom of Saudi Arabia has also been keen to develop many strategies for digital transformation, including the 2030 digital vision in Saudi Arabia. In preparation for becoming one of the leading countries in fintech investments globally by the year 2030, based on the above we can draw the following results from the two experiences:

- The various techniques of financial technology save time and effort, thus reducing costs and making the product easier to access.
- Blockchain technology allows the provision of a decentralized database of units, and thus the possibility of searching for these units and sending or performing various operations.
- The use of blockchain for smart contracts provides automated collection of funds, management of cash flows between various parties, and also allows for

linking utility bills to their actual users in an automated manner that enjoys trust and security.

- Fintech technologies allow accurate analysis and effective study of various banking operations based on data collection and analysis techniques (big data and analysis).
- Digitization and financial technology technologies raise the degree of transparency and increase the intensity of competition to provide services of the necessary quality. Modern technologies reduce fraud and deception by digitizing identities, and enhance information security through encryption.
- Financial technology has supported the growth and development of the banking industry in Malaysia by facilitating the widest marketing and promotion of products.
- Blockchain provides a very important platform for the implementation of other financial technology technologies in the banking industry in Malaysia, which has allowed the diversification of fintech business models there.
- Banking work requires adherence to the compliance and governance rules of global regulatory bodies for the sector, including the Basel Committees, the World Bank, and others. Fintech technologies, such as regulatory technology, help these bodies and banks to better monitor compliance and implement recommendations.
- The various platforms and modern technologies have contributed to achieving a very remarkable development in the Saudi banking sector, which allows reaching the goals of financial inclusion in financial and banking transactions in Saudi Arabia.
- Applying various financial technology techniques, such as blockchain, contributes to achieving the goals of digital transformation in the Kingdom and enhances the economic principles aimed at by Vision 2030.
- Saudi Arabia has made a very significant leap based on studied data in the field of digital transformation and financial technology since 2017-2020.
- In the presence of serious strategies and the desire to develop the banking system, whether traditional or Islamic, it is possible to keep pace with the development of fintech technologies and adopt them within those sectors.
- Without political will, and building the necessary rules and legislation to adopt

financial technology, Arab countries will not get far in this field.

Based on the study results, we recommend the following:

- Establishing research and innovation laboratories in the field of modern financial technology and its suitability to the banking industry.
- Training human resources to deal with financial technology, and expanding the scope of research in the field, by encouraging creativity and innovation.
- Liberating regulatory bodies and scientific bodies to build strategies and programs for developing banking in accordance with the outcomes of financial technology.
- The topic of financial technology and its various technologies is considered a recent topic for researchers and students of economics and modern technology. Therefore, we can recommend researching this topic at the level of Arab countries and the extent of the response of banking systems to it, similar to the Saudi and Malaysian experience..., to find out the factors that help in adopting technology. And its obstacles.
- Research and address the problem of the necessary security procedures and measures that must be taken by the financial and banking systems of countries before, during and after adopting the digital and technological transition of the financial and banking sector.
- The extent to which financial technology contributes to introducing the banking industry through its various technologies

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