
THE ROLE OF ARTIFICIAL INTELLIGENCE TO DEVELOP FINANCIAL TECHNOLOGY AT THE BANKS (IRAQ, CASE STUDY)

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Abstract

The world today is witnessing a lot of progress and advancement in many sectors and fields, through using electronic programs to keep up with advanced countries, where technology and artificial intelligence are really important for businesses environment nowadays. Financial institutions also use the diversification factor in strategies for using advanced banking services such as ATMs, internet and digital screens to achieve customer satisfaction and keep up with growth and development in the business role financial institutions especially banks in developed countries.

The objective of study is aiming to study and analyze the role of artificial intelligence and advanced technologies in providing banking services to financial institutions, which are used to provide banking services to customers using modern and advanced methods of access their satisfaction at the lowest cost and for the shortest time. Researchers used artificial intelligence and financial technology measurements to analyze financial institutions, especially banks, and found advanced and sophisticated control systems as well as providers increases the quality and efficiency of banking operations. by increasing the level of competition, reducing costs, and reducing the level of risk.

The researchers recommend the necessity of using more advanced and sophisticated programs for artificial intelligence and technology in the provision of banking services in order to enhance the opportunities for growth, continuity, and survival in the work of banks, especially since the use of modern technology contributes to the innovation of new and modern methods and means in the provision of banking services to customers in order to achieve their satisfaction and gain more of them, as well as benefiting from the experiences of developed and advanced countries in the application of artificial intelligence programs and modern financial technology in order to deliver electronic financial services to all segments of society.

Introduction

The financial and technological development witnessed by the modern era through the introduction of modern technology and artificial intelligence in various areas of life is one of

the most important pillars for the future of the banking and financial sector (financial institutions). As a result of this technological development and progress, customers' tendency towards electronic applications has increasingly become for the purpose of executing their banking transactions as quickly as possible and at the lowest possible cost. The use of artificial intelligence programs has led to a radical and comprehensive change in traditional financial services. Modern financial technology programs and artificial intelligence work to provide financial services at the lowest possible cost and be available to everyone, and this in turn represents a safe haven to raise the level of financial services provided to the segments of society. (Faten Abdullah Saleh, 2009). The importance of this study lies in studying and knowing the reality of the work of financial institutions by measuring the use of artificial intelligence programs and financial technology, analyzing the most important indicators, and applying advanced programs to provide financial and banking services to the community in a way that achieves their satisfaction and earns their trust. (Bushra Talib Sulaiman, 2020).

The study aims to know the analytical and practical aspect of the work of artificial intelligence programs and financial technology in financial institutions and to determine this relationship and analyze it through the use of appropriate standard indicators. However, the abnormal conditions that Iraq has gone through and the lack of infrastructure have had a negative impact on the non-application of artificial intelligence programs and financial technology in financial institutions as is the case in developed countries.

Literature Review

2-1 ((Study of Abu Bakr Khwalid, 2019))

((Applications of Artificial Intelligence as a Modern Approach to Enhancing the Competitiveness of Business Organizations, Berlin - Germany, 2019))

This study aims to highlight the applications of artificial intelligence that are useful in many areas of life, and are an urgent necessity for institutions and companies, which they cannot do without, and which enable them to achieve several advantages, which represent the solution to all administrative problems, improve the decision-making process, improve quality, reduce costs, and other features that directly contribute to ensuring the survival of institutions and companies and enhancing their competitiveness.

2-2 ((Study of Noura Mohammed 2019))

The Role of Artificial Intelligence in Raising the Efficiency of the Administrative System for Human Resources Management at the University of Tabuk

This study aims to identify the importance of artificial intelligence in how to improve the efficiency of the administrative systems for human resources management at the University of Tabuk. The study concluded that there is a need to conduct further research on artificial intelligence programs and their relationship to the efficiency of administrative systems for human resources management.

2-3 ((Study of Mustafa Salaam ET, 2020))

((Financial Technology and its Role in Achieving Sustainable Development, a Study of a Sample of Employees of Baghdad Commercial Bank and Iraqi Trade))

This study aims to clarify the role of financial technology as a novel experience in the banking sector through its role in achieving economic and social development by enabling individuals to acquire and benefit from electronic banking services in realizing their desires. The study, through the use of a questionnaire and statistical software, found that modern financial technology can meet customer desires at the lowest possible cost, but that Iraq is still suffering from weak infrastructure that prevents financial technology from achieving its goals, which require very high costs.

2-4 ((Study of Kshetri, Nir, 2022))

((The Role of Artificial Intelligence in Promoting Financial Inclusion in Developing Countries))

This study aimed to determine the contribution of artificial intelligence in activating and enhancing digital financial inclusion by performing tasks and analyses that humans cannot, which works to improve the efficiency of financial institutions and increase the number of customers. The current study distinguishes from the previous studies mentioned above is that due to the novelty of the topic, there were not enough studies at the local level addressing the role of artificial intelligence in developing financial technology in financial institutions and contributing to meeting and developing the requirements for proposing an appropriate strategy in Iraq. This study differentiated itself from previous studies by analyzing indicators of measuring artificial intelligence and indicators of measuring financial technology, as well as attempting to reach the relationship between artificial intelligence and financial technology in financial institutions while developing a special strategy for that in Iraq.

3- Developing Hypotheses:

3-1:- Applications of Artificial Intelligence and Financial technology in Banking Operations:-

3-1-1:- Artificial Intelligence:-

Artificial intelligence, especially in recent times, has garnered widespread and significant interest from decision-makers across various fields. We observe a clear divergence among scientists, each according to their research areas, in defining the concept of artificial intelligence. One has defined it as "the field of science that deals with the competition and capabilities of modern computer systems to solve problems using complex and human-like abilities in thinking, learning, and self-correction." (Ming-Hwa-wang) has defined it as "the field of study encompassing computational techniques for performing tasks that normally require human intelligence"((Mohamed, 2009)).

From the above, we can say that artificial intelligence is the turning point of what is called information technology, which means the ability of the program to solve a problem and make a decision by referring to the inferential processes that have fed the electronic programs.

3-1-2: Financial Technology:

As for financial technology, it is a "financial innovation that leads to new models, businesses, applications, processes, products, or services with a material effect on the provision of financial services." It can also be defined as "those products and services that rely on technology to enhance the quality of their traditional financial services and use modern techniques to make them faster and less costly" ((Schindler, 2017)).

From the foregoing, we can say that as a result of the rapid emergence of the Internet and the development of information technology, numerous digital and financial services have emerged that facilitate customers' financial transactions and access to necessary financing. These financial-technological and digital services can be referred to as financial technology. It works to reduce financial costs to the minimum and is designed according to the requests and desires of customers, so it may differ from one institution to another and from one bank to another. Payments and purchases can be made through a mobile phone for any specific product or service, allowing for the transfer of funds and bill payment through an application provided by the bank to users via the Internet.

4- Reasons of Adopting Artificial Intelligence and Financial Technology:

There are numerous reasons for the adoption of artificial intelligence and financial technology in financial institutions, which contribute to reducing costs, minimizing risks, and providing services in the shortest possible time. Global artificial intelligence in the financial technology market was estimated at around \$7.91 billion in 2020. It is expected to reach \$26.67 billion by 2026, with a compound annual growth rate of approximately 23.17% from 2021 to 2026. ((Amer Awad Al-Zaidi, 2018)).

Table (1) Reasons for Adopting Artificial Intelligence and Financial technology

	Reasons	Percentages
1	Achieving and maintaining competitive advantage	85%
2	Reducing and minimizing costs	63%
3	Reducing customer requests and desires for electronic financial services	59%
4	Progressing towards new global markets	75%
5	Entry of new organizations into global markets	75%

Source: Intelligence artificielle et éthique , la fabrique ,, la Assurance, livre balance, 2019 .

Therefore, financial institutions and banks adopt artificial intelligence programs and applications in order to provide financial and banking services to customers at the lowest cost and in the shortest possible time. This has helped financial institutions and banks to carry out their work, especially during the COVID-19 pandemic crisis.

5- The International Experiences in the Use of Artificial Intelligence and Financial Technology in the Financial Industry:

In recent times, the use of artificial intelligence applications has emerged, particularly in the banking sector, has been to provide financial services to customers in a secure, cost-effective, and timely manner. Some institutions have succeeded in providing financial services, the most important of which are digital payment services, money transfers, and other modern financial technologies, which have become available to all members of society, especially those who do not deal directly with the banking sector. The experiences of these countries can be mentioned as follows:

5-1:- The United Arab Emirates' Experience in the Field of Artificial Intelligence and Financial Technology:-

The UAE's experience in utilizing artificial intelligence and financial technology can be summarized as follows: the UAE has taken significant and advanced steps by establishing the Ministry of Artificial Intelligence, which was a pioneering initiative and the first of its kind globally, thereby affirming its commitment to introducing and adopting next-generation technologies. The artificial intelligence sector accounts for approximately 12.4% of the gross domestic product in the Kingdom of Saudi Arabia, around 8.2% in other Gulf Cooperation Council countries, and approximately 7.7% in Egypt, according to the findings of a PwC study in the Middle East. The use of artificial intelligence in the UAE provides around 40% in operational cost savings in the banking sector, according to a statement by (Sanjay Uppal), the Chief Executive Officer of (Straitbridge Advisers) Consultancy, and it is confirmed that Emirati banks are targeting technology and artificial intelligence to help them leverage the vast amounts of data they possess to enhance operational efficiency. The current phase is one of a shift towards artificial intelligence for banks, and it is highly likely that the next phase of adoption of financial technology and artificial intelligence will be confined to the banking sector in the UAE. The Emirati experience also suggests that the reality is that only large banks have artificial intelligence and financial technology programmes, reflecting the challenges facing the UAE banking sector. ((Mohammed Sharif, 2021))

5-2-The KSA's Experience According to its 2030 Vision:-

The KSA's Experience is represented in the use of artificial intelligence (AI) programs and financial technology by transforming the Kingdom's economy into a globally leading data-driven economy based on Artificial intelligence and financial technology by 2030. The Kingdom has witnessed the launch of the "AI Marathon" competition with the participation of a large number of AI experts from around the world, to innovate the best artistic works using AI techniques. The first bank trains its employees on artificial intelligence programs, collaborated with (Reactor Technology) Company to train all its employees on AI programs, to be the first institution in the Middle East trains all its employees on artificial intelligence programs. The goal is to lead financial services in the region through the use of modern electronic technologies that contribute \$320 billion and 11% to the gross domestic product in the Middle East by 2030. The employees of the First Bank use online courses developed

by (Reactor) Company specifically to explain the fundamental elements of how artificial intelligence works for non-specialists in the digital field. (B&zoneir, 2019)

5-3- Argentina's experience:

Argentina's experience has been represented in the utilization of artificial intelligence (AI) programs and financial technology through a financial technology company called Konfio, founded by Francisco Padilla and David Arana. The primary objective of Konfio is to empower small businesses to access credit, whereby Konfio's customers can obtain their funds within 24 hours of submitting their applications, rather than having to wait several months.

Table (2) - The Distinction between Traditional Banking Services and the Services Provided by the Financial Technology Company Konfio

	Konfio Financial technology Services	Traditional Banking Services
Average Loan Amount	\$40,000 USD	\$12,000 USD
Loan Disbursement Time	24 Hours	Several Months
Delinquency Rate	5.8%	4.8%

Source :Kshetri,N,2021 , the role of Artificial Intelligence in promoting financial Inclusion in developing countries , journal of Golobal Information Technology Management , vol , 24, issue , 1-6.

The table above shows that the average loan amount (Konfio \$12,000) is low compared to the average for traditional banking services, and that the loan approval time is 24 hours, when compared to the number of months for traditional banking services. This demonstrates the effectiveness and efficiency of artificial intelligence in processing data related to each customer ((Kstetri, 2021)), ((Wassam Aziz, 2018)).

5-4- The experience of South Africa and the TymeBank financial technology startup:

The experience of South Africa and the TymeBank financial technology startup can be summarized as follows:

The main goal in establishing (TymeBank) was to provide financial services and achieve financial inclusion. The bank combines mobile phone services and services that do not require the internet. Customers can also open a "GOALSAVE" savings account, which is an interest-bearing, progressively increasing-return savings account that offers the highest savings rates in the market.

The table (3) outlines the progressive increase in interest rates for the "Goalsave" savings account:

Number of Days	Interest Rate
1-30	4%
31-90	5%
Over 90 days	6%
Bonus rate if conditions met	7%

Source : Ivo, J, Mark ,F and Arisha , 2020 , inclusive digital banking emerging Markets, case ,Washington D.C. conltative , group to assist the poor

The adoption of financial technology and artificial intelligence programmes has been instrumental in reducing operational costs, thereby enabling the provision of financial services to the masses, particularly those with limited and low incomes. (IVO, 2020).

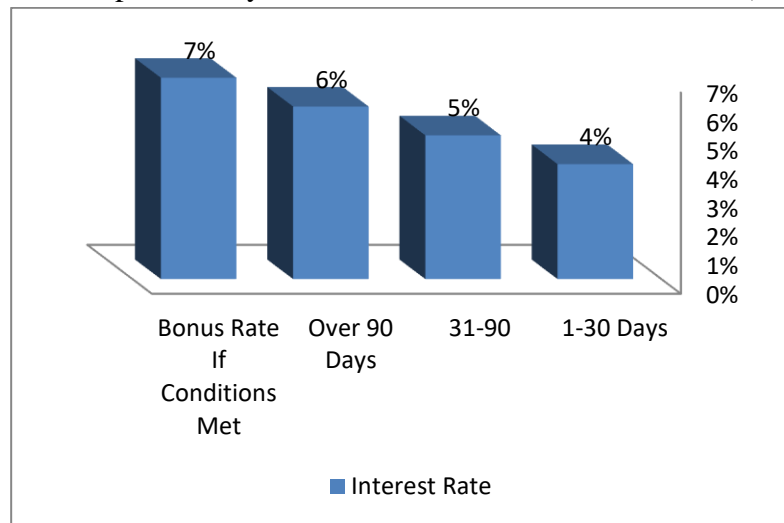


Figure (1) delineates the correlation between the Rate of Interest and the Number of Days

The figure was prepared by the researchers based on the data in Table (3) using the Excel program

6- Methodology/Analytical and Practical Aspects:

-Analytical Aspect:-

6-1: Indicators of Measuring Artificial Intelligence in Iraq:

The following are the key indicators for measuring artificial intelligence:

6-1-1 Increased operational efficiency and increased productivity (services)

The human resource contributes to boosting the operational efficiency, which leads to increased productivity (services) for financial institutions by employing highly capable materials in terms of abilities, skills, and other competencies required by financial institutions.

6-1-2-Data Collection

Financial companies that have their data well-structured and managed can use sophisticated AI systems to identify and prevent fraudulent activity. This ends up providing more benefits and advantages to those financial institutions.

6-1-3-Diminishing Human Error:

The banking industry has become highly digitized, yet it remains replete with processes reliant upon mankind. Grievous difficulties may thus arise from the occurrence of human errors. Therefore, robotic operations (software programs which emulate the digital tasks undertaken by humans in banking, in order to be rid of the protracted labour that may be vulnerable to jeopardy) are being implemented.

6-1-4-Maximizing Profits:

Artificial Intelligence-driven solutions have become an essential, integral part of companies' development strategies. This helps them maintain their competitive edge in the market. This technology works to enhance customer support, reduce costs, and automate processes - all with the goal of maximizing profits.

6-2: Fintech Performance Metrics in Iraq:

These metrics are exceedingly vital, as they provide a precise and crucially important analysis of the banking sector's operations. This is achieved by leveraging a robust data series on banking sector performance indicators enabled through the use of modern financial technology. (Ghadir Mohammad Awwadah, 2020)

The specific metrics can be outlined as follows: (Iman Muzaffar, Ahmed Abdullah Salman, 2021)

6-2-1-Indicator of Access to Financial Services

The overarching aim of the Central Bank is to develop electronic payment systems through the digital disbursement of salaries and pensions via the "Key Card." This metric can be encapsulated through the following examples:-

Banking Density = Population in Thousands / Number of Branches * 100

Banking Penetration = Number of Branches / Population in Thousands * 100

The results are elucidated in the ensuing table:-

Table (4) - The Penetration and Density of Banking in Iraq the Period 2010 to 2019

Years	Population in Thousands	Number of Branches	Banking Density (2/1)	Banking Penetration (1/2)
2010	32.489	871	3.73	2.68
2011	33.338	899	3.70	2.78
2012	34.207	994	3.44	2.90
2-13	35.095	1014	3.46	2.88
2014	36.004	1034	3.48	3.34
2015	36.933	854	4.32	2.31
2016	37.883	866	4.37	2.29
2017	37.140	843	4.40	2.27
2018	38.200	865	4.41	2.26
2019	39.300	888	4.42	2.25

The Table was prepared by the researchers based on the data:-

Iraqi Central Bank - Department of Statistics and Research, Annual Statistical Bulletin 2010-2019

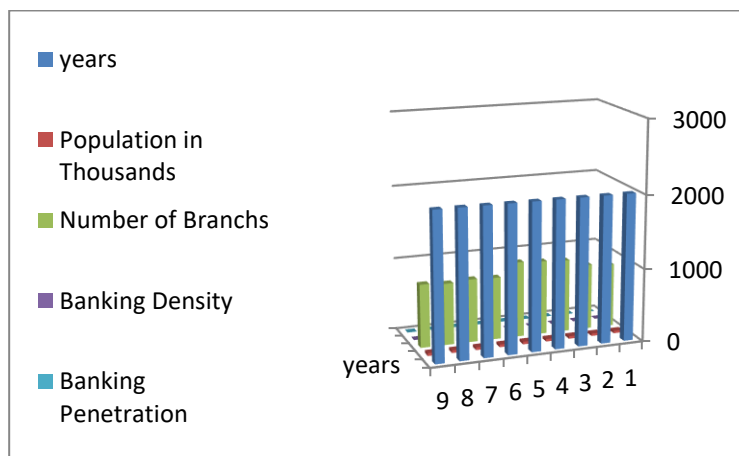
Ministry of Planning, Banking System for Statistics and Research

Figure (2) the penetration and Density of Banking in Iraq the Period 2010 to 2019

The figure was prepared by the researchers based on the data in Table (4) using the Excel program

From the illumination provided by Table 1, it becomes clear that the level of banking density and dissemination within Iraq commenced from figures that were exceedingly weak, when compared to the global indicators. For the ratios remained depressed and proximate throughout the 2010-2019 study period, owing to the unsettled security and political circumstances that had beset the country, adversely impacting the quality of banking services and the regression in banking efficiency. This speaks to the paucity in the proliferation of banking service culture amongst the populace.

Upon comparing Iraq with the other nations in terms of the average rate of banking dispersion, one finds it to represent the lowest mean, approximating a mere 2.7. Whereas the highest mean rate of penetration was attained by Lebanon, reaching around 25.2, signifying the advancement and development of the banking sector in Lebanon, and the salutary dissemination of banking culture amongst the Lebanese citizenry. The depressed ratio for Iraq, conversely, indicates the weakness and malfunction in the performance of services by the banking sector, a consequence of the unsettled security and political circumstances plaguing the land, as elucidated in Table 5:-

Table (5) Average banking penetration rate for a number of Arab countries and Iraq the period 2013 to 2016

Country	Average Dispersion Rate
Algeria	7.8
Iraq	2.7
Lebanon	25.2
Saudi Arabia	8.5
Jordan	15.4
United Arab Emirates	12.7
Kuwait	14.6

The figure was prepared by the researchers based on the data of International Monetary Funds

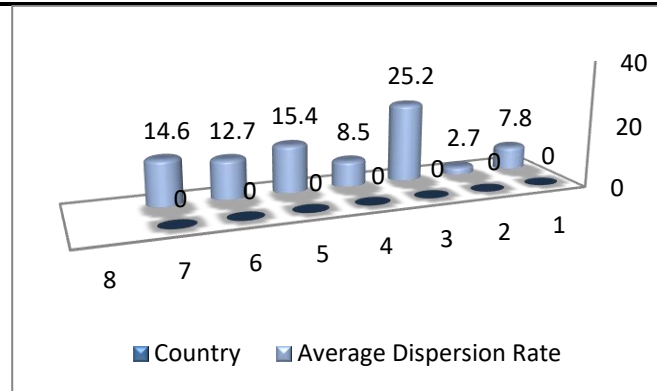


Figure 3, which illustrates the average rate of banking dispersion for several Arab countries

The figure was prepared by the researchers based on the data presented in Table (5) using the Excel software:

Table 6, which presents the number of ATM machines and point-of-sale (POS) terminals in Iraq the period 2010 to 2019:

Years	Number of ATMs	Number of POS Terminals
2010	385	-
2011	467	50
2012	467	50
2013	467	30
2014	337	30
2015	580	30
2016	660	30
2017	656	-
2018	865	-
2019	1014	-

Source: Central Bank of Iraq / General Directorate of Statistics and Research, Statistical Bulletin the years 2010-2019.

Table (6) shows the number of automated teller machines (ATMs) and point-of-sale (POS) terminals in Iraq for the period 2010-2019. POS terminals and ATMs are important means for accessing banking and financial services at the lowest possible cost, in the shortest time, and with the least risk.

From Table (6), we observe that the number of ATM machines during the years (2011, 2012, and 2013) was around 467, and this number remained constant. It did not change during those three years. However, in 2014, the number of ATM machines decreased to around 337, due to the entry of the terrorist organization ISIS into Iraq, which led to the destruction of the country ((World Bank 2014: 19)).

After that, the number of ATMs began to increase steadily and continuously during the years 2015, 2016, 2017, 2018, and 2019, with the highest number of machines being around 1,014 in 2019. This increase in the number of ATMs indicates a rise in the banking penetration rate of private banks, which contributed significantly to the growing use of ATM machines.

However, despite this continuous increase in the number of ATM machines, Iraq still occupies the lowest rank among Arab countries in terms of ATM usage ((Shehad Majid, 2021)).

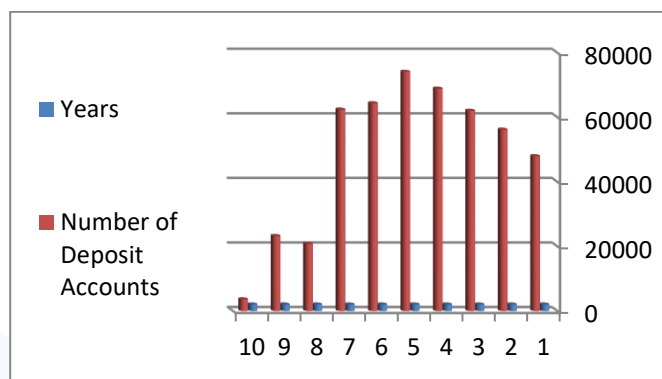
6-2-2: Possession of accounts with banks:

The bank accounts opened reflect the ability and responsiveness of the banking system in providing financial services to institutions and individuals, as it expresses the extent of the spread of banking awareness and educational culture among individuals. From the following table, Table 7, it is evident that there has been a decline in the number of deposit accounts held with banks, which indicates a decrease in banking awareness and the reluctance of many people to benefit from banking services. This also suggests the prevalence of the hoarding phenomenon among individuals and their insufficient trust in the banking sector to deposit their money with banks instead of hoarding it, which is attributed to the unstable security and political conditions ((Park 2015:23)).

Table (Table 7) on the number of deposit accounts in Iraq the period 2010 to 2019

Years	Number of Deposit Accounts
2010	47,947
2011	56,157
2012	62,005
2013	68,855
2014	74,073
2015	64,344
2016	62,398
2017	20,811
2018	23,202
2019	3,612

Source: Central Bank of Iraq / Department of Statistics and Research, Statistical Bulletin for the years 2010-2019



The figure 4, the number of deposit accounts in Iraq the period 2010 to 2019
This figure has been prepared by the researchers based on the data provided in Table 7, using Excel software

6-2-3- Savings:

Savings denote those individuals who have chosen to deposit their monies with informal savings institutions. These are establishments that exist outside the formal banking sector.

6-2-4- Lending:

This metric gauges the percentage of adult individuals who borrow funds from banking institutions, as outlined in Table 8:

Table 8: Loan Accounts to Adult Population in Iraq, 2010-2019

Year	Adult Population (aged 15 and above per 1,000 persons)	Number of Loan Accounts	Ratio of Loan Accounts to Adult Population (%)
2010	19,303	9,711	0.5%
2011	19,929	15,290	0.8%
2012	20,569	22,850	1.1%
2013	21,227	24,700	1.2%
2014	21,926	28,195	1.3%
2015	22,082	30,297	1.4%
2016	22,654	30,612	1.4%
2017	-	-	-
2018	-	-	-
2019	-	-	-

Source: Prepared by the researchers based on data from the Central Bank of Iraq.

**Data for the years 2017-2019 was unavailable in the Financial Stability reports.

Verily, we observe from Table the Fifth that the metric of borrowing is measured by the number of loan accounts to the adult population. It may be that both the number of adult inhabitants and the volume of loans increase, for the highest ratio recorded in the table was during the years 1617 and 1616, amounting to nigh 1.4, which is a proportion lofty in comparison to the other ratios mentioned in Table the Fifth. This doth indicate a rise or elevation in the demand for borrowing from the banks.

The lowest ratio, on the other hand, was equivalent to 0.5 in the year 1610, which doth signify the decline that hath occurred in the demand for borrowing from the banks.

6-2-5- Payments:

This metric measures the number of individuals who have utilised the official account to remit funds or receive them through the employment of the mobile telephone, for the purpose of settling invoices.

7- The relationship between financial technology and artificial intelligence

The digital progression is verily one of the most fundamental pillars for the future of the financial banking sector. For the patrons do incline towards the execution of their banking transactions through the employment of intelligent solutions and electronic applications via the internet, and financial technology is able to render the banking services less costly and

hazardous, and in the swiftest duration possible, and be moreover more transparent and secure for a large swath of the individuals who engage with the banking sector. And the utilization of operational capacity doth enhance the performance of financial institutions and increase their profitability. Therefore, the majority of financial institutions labor to invest in the application of modern financial technological tools. Especially as financial technology in recent years hath fashioned a revolution in global financial systems. For the emergent financial institutions in the field of financial technology have succeeded in proffering a diverse bundle of financial services, which encompass the transfer of funds, payment servicing, and lending operations - a matter which doth cast its shadow over the future of traditional financial services. Wherefore the financial institutions and banks strive to effect certain alterations through the employment of artificial intelligence programs and modern financial technology, to improve their competitive capacities, in order to provide the advanced and progressive financial services in the most optimal manner possible. ((kaifala2017:12))

8- The Future Study:

The future is determined by the development and progress in the use of modern technologies, such as artificial intelligence (AI) programs and financial technology, in order to overcome the traditional old techniques in the practice of activities and operations of financial institutions, particularly banks. Recently, there has been a significant dominance of AI applications and financial technology in all areas of life and economic activities for financial progress and development. Therefore, it is necessary to make great and continuous efforts to achieve the goals of this progress and development through the use of modern AI and financial technology techniques.

The current study examines the role of artificial intelligence in the development of financial technology in the practice of financial institutions' business activities, through the number of citizens' bank accounts, the number of banking facilities accounts, the number of beneficiaries and users of ATMs, as well as the number of lending institutions, insurance companies, financial brokerage firms and other financial institutions, in order to meet customers' needs. It is expected that artificial intelligence will grow globally, particularly in the modern financial technology market, at a rate of around 30% during the expected period, and it is also expected to represent \$45 billion by 2028. Recently, artificial intelligence programs in financial institutions have seen high demand due to the reduced time consumption and ease of processing for cash transactions. A prime example of this is the COVID-19 pandemic, which has shifted work from traditional to electronic, with more convenient and faster execution of the required operations. This has led to a greater use of artificial intelligence programs and financial technology, due to the increasing demand for financial services supported by artificial intelligence and financial technology, as well as the significant shift from traditional financial services to advanced electronic financial services.

9- Conclusion

We can say that everyone must comprehend that artificial intelligence has brought about a tremendous scientific revolution, especially in the modern era, as data necessitates the use of

artificial intelligence programmes, which serves as a saviour for financial institutions, as they emulate human minds in providing financial and banking services. Therefore, there are numerous difficulties and challenges facing financial technology and artificial intelligence, particularly in Iraq. The use of these advanced technologies is to mitigate the challenges faced by financial institutions during their operations. The researchers have found that the adoption of financial technology and artificial intelligence supports competitiveness and contributes to reducing operational costs and providing services to customers at the lowest cost, with high efficiency and great effectiveness through electronic techniques.

It is necessary to pay attention to training all employees, especially bank and financial institution employees, on financial technology and artificial intelligence techniques and programmes, in order to move towards the digital electronic economy and keep pace with global economic progress and development in advanced countries, and to transition from traditional banking services to modern and advanced banking services, in order to achieve customer satisfaction and gain more customers. Financial institutions, especially banks, must also use artificial intelligence programmes that are clear and more secure, in order to avoid falling into new financial risks.

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