Al-Qadisiyah Journal for Administrative and Economic Sciences ISSN$_{Online}$: 2312-9883
QJAE, Volume 27, Special issue (2025) ISSN$_{Print}$: 1816-9171
DOI:/ /doi.org/ 10.33916/qjae.2025 . Special issue 01220

Digital Financial Services and Customer Protection

Esraa Abd Farhan Omar Duraid Hamid
ichitheer@uowasit.edu.iq omer098765321@gmail.com
University of Wasit University of Al-Qadisiyah

Corresponding Author: Esraa Abd Farhan Omar Duraid Hamid

Abstract : Recently, Iraq has witnessed a shift toward digitizing banking products and adopting digital financial services in its customer interactions. Fintech plays a key and effective role in facilitating financial transactions by developing banking operations and spreading a digital culture. The research reviewed fintech and its role in accessing the Iraqi economy through the banking market, as well as the digital financial services provided to customers and their relationship to customer protection in terms of data and financial transactions. It also examined the financial and banking reality in Iraq by reviewing some indicators. Several conclusions were reached, including that the application of fintech faces numerous obstacles and requires infrastructure and development spending in the field of digital banking financial services. The research's most important recommendations include working to revitalize the banking sector, increasing awareness and digital culture, and covering all regions, including rural areas.

Keywords: FinTech, digital financial services, customer protection

Introduction: The banking industry is witnessing a technological revolution in financial services, striving to bring about major changes in a fast, easy, and cost-effective manner. Financial technology plays a vital and significant role in financial transactions and services. Iraq is one of the countries that is keeping pace and striving to provide digital financial services by offering a variety of digital financial services and various available channels. This enables these services to reach its customers with ease, smoothness, and convenience around the clock. This also provides a high degree of security and trust, which contributes to influencing customers and changing the traditional approach to dealing with traditional services and shifting towards digital financial services. This reflects customer satisfaction with these services.

Research Objective: The aim of the research is to review the potential of financial technology in the field of financial services, the digitization of these services, and customer confidence in dealing with these digital products, providing a degree of security and trust to protect their data and information.

Research Problem: The research problem is reflected in the following questions:

1- What is financial technology and its relationship to financial services?
2- What is the role of digital financial services and customer protection?

Significance of the Research: The importance of the research lies in delving into the study of financial technology and its impact on financial services through the collection of services offered to customers, determining the degree of trust and security, and identifying the most significant obstacles to the implementation and access to digital financial services.

Research Hypothesis: The research hypothesis states that financial technology plays an effective role in the digital financial services provided to customers and the degree of security and satisfaction.

The first requirement: the theoretical framework of the research

First: Financial technology:

In recent years, many economic activities, including those of governments, businesses, and society, have witnessed the widespread use of the internet to benefit from banking services. Fintech is defined as a suite of innovative technologies and creative approaches in the field of financial services, which generate banking products that encourage society to acquire them, given their role in reducing time and effort and replacing traditional methods of completing banking transactions (Harfoush, 2019, p. 9)

Technology is unique in its possession of tools that perform operations and services quickly, easily, and at a lower cost, making them accessible to all segments of society. Some define fintech as financial products and services that have a broad and influential impact on markets, companies, and financial institutions. As a result of the tremendous developments in the field of banking industry, which requires the development of its financial tools and the increase in trading rates with banking technology, this rapid development has stimulated the direction of capital investment in such fields and the passion for investing in electronic payment technologies, in addition to the low cost of using financial technology and the pursuit of all means to easily obtain banking services at a low cost, which has contributed

widely to the availability of technology in the hands of the largest number of population classes (Abdul Latif and Ahmed, 2018, p. 6).

Technology is of great importance, evident in the position of companies and institutions in terms of the level of technology and technical expertise used and the degree of financial development that adds a competitive advantage to these companies, in addition to the extent of development, improvement, quality, and the essence of the service that distinguishes their customers. This is reflected in the extent to which financial services reach the widest segment and location, so that they cross borders thanks to the existing technology and the extent of its coverage of services represented by crowdfunding, working to find solutions for payment via phone, conducting international financial transfers, and providing and managing investment portfolios via the Internet (Saeeda, 2022; Aql et al., 2023, p. 83).

It is noted that financial technology has entered all banking fields and sectors, which is evident through the payments sector, in which financial technology has contributed effectively to improving financial transaction services, which are characterized by ease of payment without effort or time, followed by the lending and capital raising sector, which has been characterized by providing the greatest benefit from financial services to the largest segment of those who do not have bank accounts. As for the money transfer sector, it has witnessed development in financial services through shortening the time to complete it and reducing its cost, which distinguishes it from traditional transfer methods, in addition to the wealth management sector, which has contributed to providing wealth management services for individuals who do not have bank accounts and save their money outside the banking sector, reaching the insurance sector, which is characterized by preparing and developing innovative financial models through data analysis and artificial intelligence (Abdul Hadi, 2014, p. 32).

Financial technology has been characterized by several features through technology in financial and banking services in a way that has helped the banking sector to keep pace with developments and thus adapt to the demands of individuals and institutions. It is also a means that financial and banking institutions rely on in order to achieve their goals, which are manifested in meeting the demands of individuals and companies, in addition to the package of skills, methods and financial and banking services that distinguish banks with the quality and type of service provided to customers, dispensing with the traditional methods and replacing them with a database for customers and thus providing the service they desire (Harfoush, 2019, p. 72)

The implementation of financial technology faces several supporting factors and challenges. The supporting factors include a high percentage of individuals with bank accounts who are willing to take advantage of this technology, and the trend toward more electronic commerce, especially in recent years due to the global COVID-19 pandemic. This shift in commerce behavior has led to a greater focus on electronic commerce, and as a result, this development has increased the desire to access digital financial services.

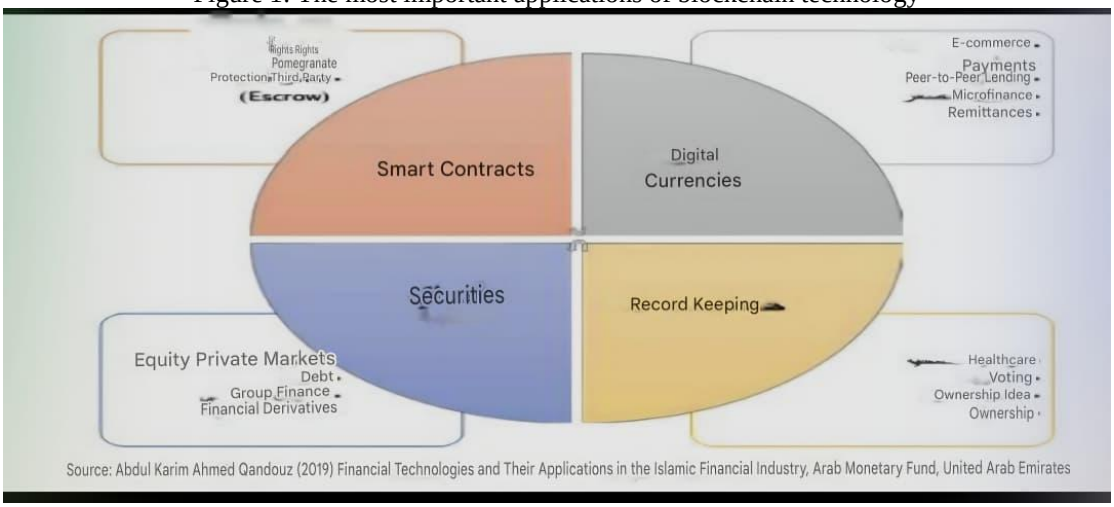
While the difficulties in applying financial technology included the lack of high-quality internet service and the availability of smart phones in many countries, the lack of a suitable and appropriate business environment, the frequency of electronic piracy that causes problems in work and incurring the costs of financial loss, which is reflected in the reputation of the bank and thus the confidence of clients and customers in depositing and dealing with these banks, the lack of sufficient trust resulting from the lack and scarcity of awareness of the public dealing in the banking field of this technology and the extent of the services that it can provide (Abdul Qader, 2005, p. 44)

Financial technology has played several roles in adding digital technology to many banking services with the aim of maintaining financial stability and protecting customer data. Financial technology has enabled a variety of digital financial services provided to customers, including digital credit services and accepting electronic deposits. It has contributed to gaining a competitive advantage by raising the efficiency of banks and developing performance in providing services, including reducing the cost of concluding deals and financial transactions, thanks to the preparation of electronic systems and programs. Environmentally interoperable encryption technology is a new innovation in the field of financial technology, which has played an important role in raising the efficiency of banking operations and thus reducing the possibility of failure of these operations. In terms of financial stability, financial technology plays a role in increasing profitability, liquidity and operational rates, reducing credit risks for banks, and finally protecting customer data. The technologies used by financial technology have been able to reduce and limit the risks of customer data being exposed to theft and fraud, thus protecting the confidentiality and privacy of customers (Hassan, 2020, p. 488).

Financial technology has witnessed great interest in blockchain technology, which is known as smart contracts, which are characterized by the desirable characteristics of technology due to the high specialization it gives to transactions, as they record and store transactions completely within the network. Some define it as a distributed ledger system that is unrestricted and does not require permission. This technology has positive and negative aspects in transactions. The positive aspects are manifested in the completion of transactions directly without the need for a third party, and in this way, the intermediary is removed. It is characterized by decentralization and enhances transparency and trust. In terms of information security, it is characterized by fixed systems that do not change in a chain represented by blocks and

groups, which contribute to reducing costs and speeding up the completion of transactions. The negative aspects, however, are represented by legal issues and the increasing energy consumption required by computers, in addition to the consumption of very large spaces for storage (Abdul Latif and Al-Sakhwi 2020, p. 43).

Figure 1: The most important applications of blockchain technology



Second: Digital Financial Services:

In light of modern systems and rapid developments, digital financial services are an essential pillar in increasing banking productivity and reducing operating costs by facilitating procedures and the flow of banking operations in a way that ensures customers receive high-quality and speedy services at all times. Studies and ongoing scientific research examining customer behavior, striving to achieve customer satisfaction and increase their desire to access these services have shown that digitization and its application in financial and banking services lead to the establishment of quality standards that include, within their hidden aspects, speed, proficiency, and clarity in completing banking transactions (Abdul Qader, 2005, p. 41).

Digital financial services have several concepts, including what states that it is a group of digital financial products that are completed and sent through the Internet, telephone, or other electronic networks, and what defines financial services as several services represented by payments and financial transfers that are obtained through digital outlets and include other services such as debit and credit cards that are provided mainly by banks (Kambale, 2018, p. 5).

In general, digital financial services are a range of financial services that can be accessed through digital channels. This contrasts with traditional financial services, which require physical access such as going to a bank branch.

Table No. (1) Digital Financial Services

Digital Technology Solutions	Innovative Technology				Gap	Traditional Model	Client Needs
	DLT/Gripto Mobile		Ambassador/Network	AI/ML			
Virtual Currencies, Remittances, Mobile Payments, Mobile Point-of-Sale, P2P Payments, B2B Transactions, DLT-Based Settlement	H	H	H	L	Speed, Cost, Transparency, Access, Protection	Cash/ATM, Check, Bank Transfer	bun
Virtual Currencies, Blockchain Mobile Bonds Marketplace Funds,	H	H	H	L		Bank Innovations, Mutual Funds, ASEM Bonds	Savings
Credit Modeling, Lending Platform, Crowdfunding, Blockchain, Automated Underwriting Bonds	L	H	H	H		Bank Assumption, Bonds, Mortgages, Trade Credit	Assumption
Contracts, Regtech, Suptech, Crypto Asset Exchange, KYC, Digital ID	L	H	L	H		Underwriting, Brokerage, Products, Automation, Trade Regulation, Compliance, KYC, Insurance	Risk Management
Robo-Advisory, Automated Wealth Management	M	L	M	H		Financial Planner, Investment Advisor	Advice

Source World Bank. (2021). Developing Digital Payment Services in the Middle East and North Africa. Washington, p 13

Whereas:
L : Low level of technology.
M: Average level of technology.
H: High technology level
Types of digital financial services:
Digital financial services are witnessing a great diversity in terms of the services provided to their customers, as they include operations related to withdrawals, deposits, financial transfers, granting loans, opening letters of credit, investing funds, managing financial portfolios, providing consultations, real estate financing, insurance, and managing customer accounts. Regarding accepting deposits, it is divided into several sections, including current, demand, and savings accounts, as a tool and means of payment that brings together all banking products such as cashing and collecting checks and carrying out the transfer process. There are financial services linked to modern innovations, the basis of which is electronic payment methods, including credit cards, ATMs, and electronic money transfer systems. Others are related to investing in securities, including providing financial consultations and managing portfolios (Tahami, 2022, p. 112).
The application of digital financial services has a range of positives and negatives, including:
A- The positive aspects of the following digital financial services:
- ❖ Providing highly secure digital banking services to individuals and businesses.
- ❖ Expanding the scope of financial services to include non-financial sectors.
- ❖ Achieving high GDP growth rates from these digital products.
- ❖ Striving to reduce black market transactions.
- ❖ Aiming to achieve high and rapid rates of providing and receiving financial transactions.

B- The negative aspects of the following digital financial services:
- ❖ The lack of awareness among a large segment of individuals about using the internet, which negatively impacts the use of digital financial services that rely primarily on the internet.
- ❖ The existence of many, or even the majority, regulatory and political environments that prevent the enjoyment of digital financial services as a whole.
- ❖ In most countries, financial services are excluded for a segment of individuals and businesses due to the ways in which digital financial services are provided to individuals and businesses.
- ❖ The decline in the provision of digital financial services to individuals who do not own digital devices or phones (Fawzi, 2021, p. 560).

Digital financial services are provided entirely through electronic channels, as follows:
1- ATM Channel:
This is a way to save time, effort, and money. It is an automated device that allows access to banking financial services without human intervention. It operates 24/7 using a plastic card. The ATM card has specifications that enable customers to use it and obtain the desired services, including cash deposits and withdrawals, depositing funds, checking balance information, and transferring funds between accounts (Peter & E. Menike, 2016, 77).
2-Digital Financial Services Channel via Smartphone Applications:
This is one of the ways to provide financial services remotely via phone via text messages and receiving information and services. This is done by providing the customer with a secret number. This enables customers to inquire about their personal accounts or change the password or passcode. This makes it easier for customers to access their bank accounts and conduct transactions via their mobile phone. It is an easy, fast, and advanced electronic means that is effective at any time for secure communication between the bank and customers.
3- Digital Financial Services Channel via the Internet:
This channel is characterized by its ease and immediacy in providing digital financial services. It is the most important banking tool for debit card holders to access. For financial data around the clock, services provided through this channel include paying credit card bills, buying and selling investments, and other financial operations and services.

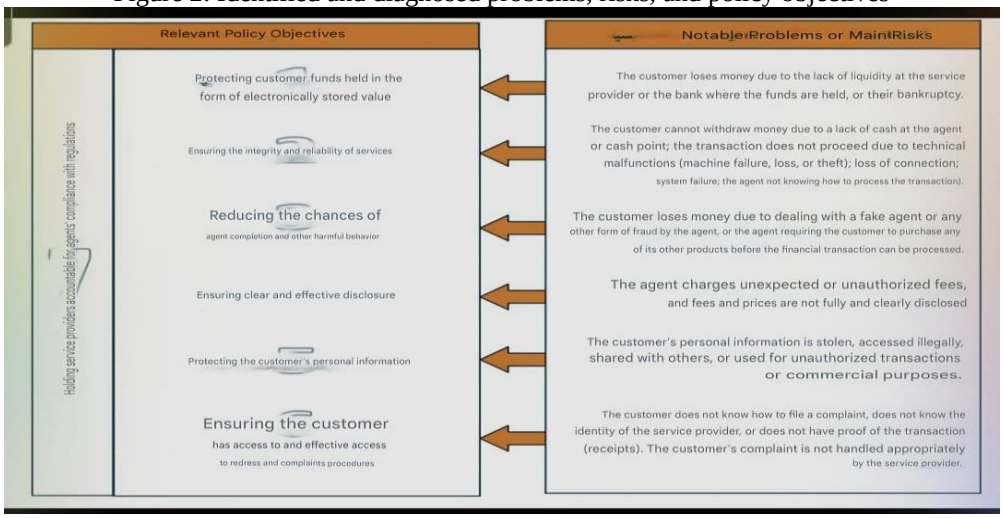
Third: Customer Protection

Protecting customers from fraud and exploitation and providing excellent treatment by financial service providers is of utmost importance. It is essential for financial service providers to provide customers with transparent, credible, and clear information regarding the terms and conditions of financial and banking products, which makes product comparisons in the market easier.
From the perspective of the regulatory and supervisory framework, the primary risks of the branchless digital banking industry lie in the extensive use of external payment processing, particularly the use of agents, which is part of external payment processing. In addition, there are other parties involved in providing services, such as retail outlets, who may not have the legal authorization to do so. Therefore, this framework can assess and identify the risks specific

to these parties, such as companies. As shown in the following table, risks in external payment processing relate to the customer and the user of these services (Abdul Ali, 2023, p. 34).

Table No. (2): Monitoring banking operations in accordance with the Basel Committee guidelines and identifying consumer-related risks

Figure 2: Identified and diagnosed problems, risks, and policy objectives



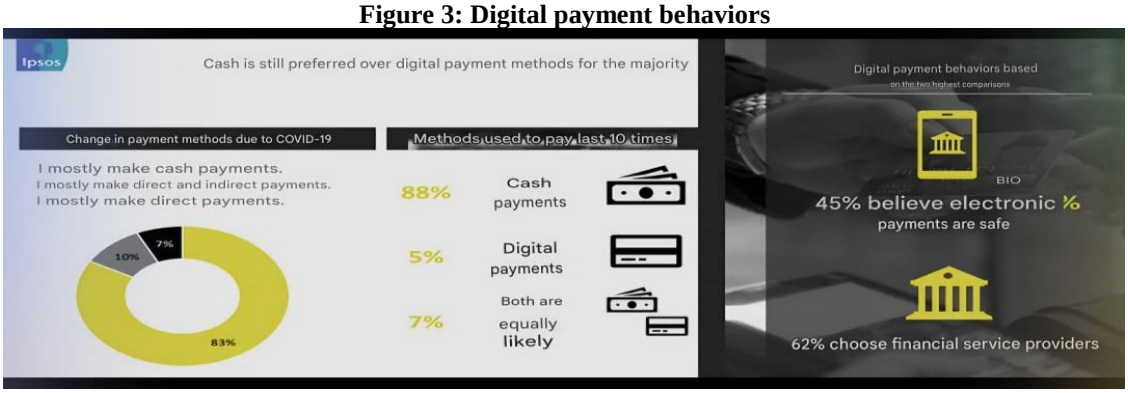
Source : https://www.cgap.org/sites/defaultresearches/documents/CGAP- e-Protecting-Branchless-Banking-Consumers-Policy-Objectives-and-Regulatory-Options-Sep-2010-Arabic.pdf

1- Information Security: Information security is of great importance and one of the most important things that banks must pay attention to because of its importance to their customers. In order to protect information in these institutions, it is necessary to achieve internal security for the customer and feel safe that his information and data enjoy a high degree of security, to avoid hacking within the banking institution, especially with regard to digital matters and to provide a degree of security, several or a group of procedures and policies must be taken for all activities and operations carried out by the bank from a technical point of view. Therefore, information security expresses the degree of strength of protection and security and the difficulty of unauthorized access to this data and information. This expresses the level of reassurance for the customer and the degree of trust and avoiding security gaps and hacks (Fadhila, 2010, p. 11)

2- Technical Operations Management: To contribute to improving banking operations in a way that achieves the greatest possible profit, measures must be taken to achieve the highest production efficiency through sustainable development of banking productivity and improving the quality of financial services, which in turn impacts the customer experience (Jayan & Shawkat, 2020, p. 234).

3- Banking Confidentiality: To protect customer data and information, a reasonable degree of security must be provided, reflecting the possibility of unauthorized and permitted access to customer banking and financial information, and reflecting the commitment to banking confidentiality for all operations and activities.

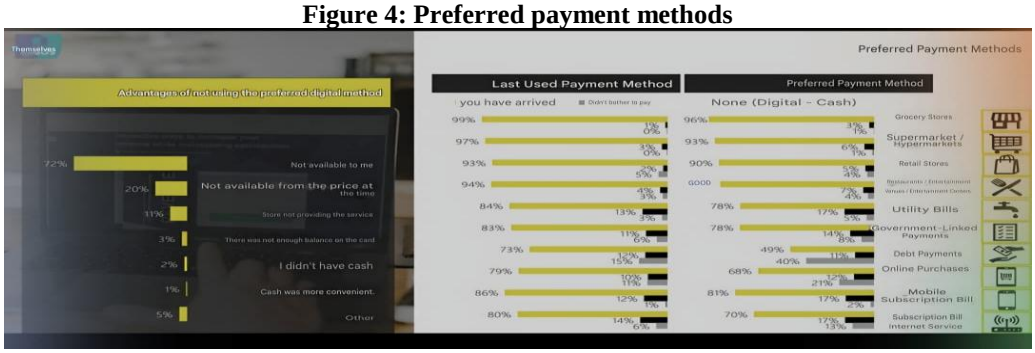
Figure 3: Digital payment behaviors



Source: Market study on the adoption of digital financial services, p. 44 https://www.jopacc.com/sites/default/files/202311/adoption_of_digital_financial_services_final_report_ar_published.pd

The figure above presents the findings of a market study conducted by a group of researchers on the adoption of digital financial services. The study used a survey to gather data on the payment habits of users of these services, and it revealed that the majority still prefer cash payments over digital methods. This is attributed to a lack of awareness and insufficient understanding of how to use digital financial services.

Figure 4: Preferred payment methods



Source: Market study on the adoption of digital financial services, p. 45 https://www.jopacc.com/sites/default/files/202311/adoption_of_digital_financial_services_final_report_ar_published.pd

The same study, however, posed the question of which payment method customers prefer when using digital financial services across various sectors. The study concluded that customers still prefer to use cash for their transactions and financial needs.

The second requirement: The reality of digital financial services and customer protection in Iraq.

Traditional methods are fading due to numerous obstacles and lengthy red tape involved in completing transactions. Digital financial services are a key component in ensuring customer satisfaction and protection in completing transactions, reducing the time and effort required to complete transactions. Furthermore, financial technological advancements are achieving a high level of security and protection for customer data and increasing the efficiency of digital banking products, thus enhancing the customer experience of these services.

1-Internet Service Index in Iraq:

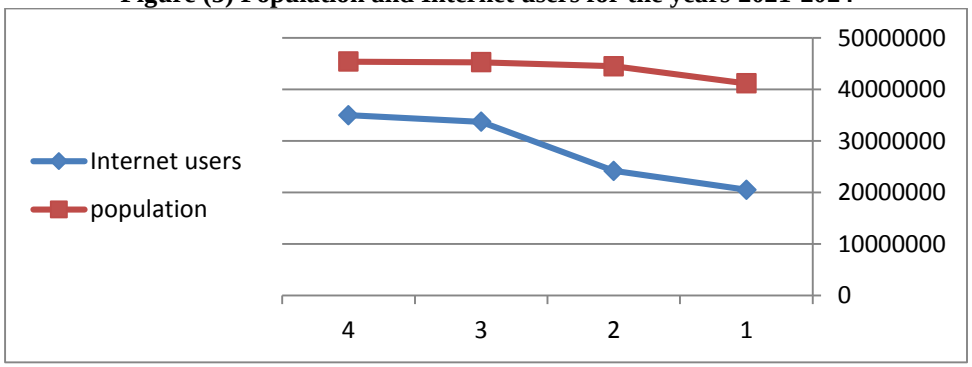
Table (3) shows that the percentage of internet users to the population has witnessed a significant increase over the years of research. The percentage of internet users to the population in 2021 was estimated at 49%, and the percentage gradually increased to reach 77.04% in 2024. This demonstrates the expansion of the culture of electronic transactions and the use of digital financial services, stemming from a degree of trust, security, and awareness of the importance of technology in the banking financial revolution in all economic aspects. This is reflected in clarifying the degree of protection for customers in relation to digital financial services, the confidence in dealing with them, and the confidence that customer data and accounts are highly secure.

Table No. (3) Population and Internet users for the years 2021-2024

Year	population	Internet users	% Users/Population
2021	41179350	20525000	%49.8
2022	44,496,122	24200000	%54.3
2023	45,262,255	33720000	%74.49
2024	45,407,895	34986000	%77.04

Source: Data from the Central Bank of Iraq reports for the years 2021-2024

Figure (5) Population and Internet users for the years 2021-2024



Source: Compiled by the researcher based on Table (3)

2-ATM Number Index:

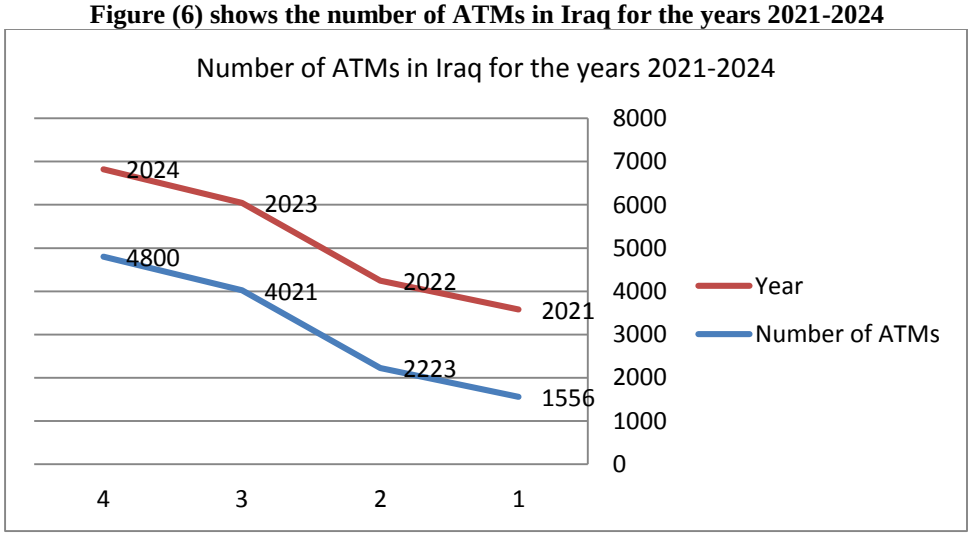
One of the indicators that primarily relies on technology and advanced technologies to facilitate financial transactions, the availability of which is reflected in this indicator. The data in the table below demonstrates a high degree of widespread access to this technology. In 2021, the number of ATMs reached 1,556, while in 2024, the number of ATMs reached 4,800. This indicates an increase in the number of customers and users accessing digital financial services with ease.

Table No. (4) Number of ATMs in Iraq for the years 2021-2024

Year	2021	2022	2023	2024
Number of ATMs	1556	2223	4021	4800

Source: Data from the Central Bank of Iraq reports for the years 2021-2024

Figure (6) shows the number of ATMs in Iraq for the years 2021-2024



Source: Researcher's work based on Table No. (4)

3- Investment Portfolio Index:

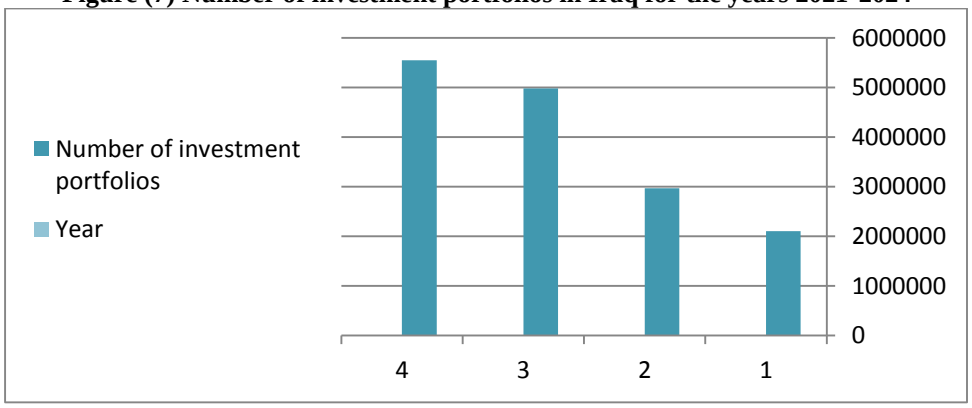
The investment portfolio is one of the indicators that achieves the highest expected return across all types with the lowest risk at various levels of expected returns. The table below shows the number of portfolios in 2012 (2,107,265) compared to 2024 (5,546,340). This percentage reflects the public's awareness and increased digital literacy in dealing with and accessing digital products, and thus confidence in investing in the assets and resources one owns and their diversity.

Table No. (5) Number of investment portfolios in Iraq for the years 2021-2024

Year	2021	2022	2023	2024
Number of investment portfolios	2107265	2970390	4980427	5546340

Source: Data from the Central Bank of Iraq reports for the years 2021-2024

Figure (7) Number of investment portfolios in Iraq for the years 2021-2024



Source: Researcher's work based on Table No. (5)

The data and figures presented above clearly indicate that customers, their level of engagement with and utilization of digital financial services are on the rise, and their inclination toward digital investments is on the rise. This is evident in their confidence and satisfaction with the speed and efficiency of providing digital financial services, completing transactions, and protecting data confidentiality.

Conclusions:

1- Lack of awareness and digital literacy among customers regarding financial and banking services.

2- Lack of transparency regarding fees imposed for accessing digital financial services.

3-Digital financial services are available, but to a limited extent and not comprehensively across all regions.

4-The implementation of financial technology faces numerous obstacles and requires infrastructure and development spending in the field of digital banking and financial services.

5- It was noted that banks in Iraq rely on outdated, ineffective hardware and software, despite progress and efforts to direct investments in the banking sector toward modern technology, technology, and communication.

Recommendations:

1- Protect customers by working to establish a portal to facilitate coordination between agencies to properly address customer grievances.

2- The transparency stipulated in the laws regarding service fees requires follow-up due to their lack of comprehensive implementation.

3-Encourage and increase digital awareness, spread the culture of adopting digital payments, and increase awareness of banking outlets.

4- Enhance communication and the sending and receiving of information by expanding digital financial services and working to implement mobile payments at lower costs and fees.

Sources:

1- Harfoush, Saida, "Financial Technology: A Promising Industry in the Arab World," Scientific Horizons Journal, Volume 11, Issue 3, 2019.

2- Haddadi, Abdel Latif, Brady Ahmed, "Financial Technology: Between the Enormity of the Concept and the Magnitude of the Risks," a paper presented at the National Forum on Fintech Startups: Challenges of Growth and Competition, April 17-18, 2018.

3- Aql, Yasser, Mohamed Abdel Qader, Salam, Helmy Ibrahim, and Ahmed Mustafa Mahmoud, "The Impact of Financial Technology on the Financial Performance of Banks: An Applied Study of Banks Operating in Egypt," Academic Journal of Contemporary Business Research, Volume 3, Issue 3, 2023.

4- Jayan, Reem. Shawkat, Tamara. Operations Management Strategies and Their Impact on Customer Delight, A Survey Study in the Treasure Laboratory, Journal of Economic and Administrative Sciences, 26 (122), 2020.

5- Brish Abdelkader, Quality of Banking Services as an Approach to Increasing the Competitiveness of Banks, University of Chlef, Journal of North African Economics, Issue 3, 2005.

6- Masoudi, Abdelhadi. Banking Challenges of Arab E-Business and the Possibility of Its Development: The Case of Algeria. (Doctoral Dissertation), Omar Al-Telidji University, Laghouat, Department of Economics, 2014.

7- Boudhraa, Abdelali. Artificial Intelligence Applications and Their Impact on Customer Experience and Banking Services. (Doctoral Dissertation), University of Martyr Sheikh Larbi Tebessi, Tebessa, 2023.

8- Mada Abdel Latif Al-Rahili and Hanaa Ali Al-Dahwi, Developing the Real Estate Rental Sector in Line with the Digital Transformation of the Kingdom of Saudi Arabia: A Proposed Study for the Application of Blockchain

Technology, King Abdulaziz University, Kingdom of Saudi Arabia, Journal of Studies and Information Technology, Volume 1.
9- Khaled Subaih Al-Hadi Tahami, The Role of Financial Inclusion in the Relationship between Digital Financial Services and Organizational Performance, Volume 13, Issue 8, April 2022.
10-Sawsan Fawzy Assaf Nashwa Muhammad Abdriya, The Importance of Digital Transformation in Achieving Sustainable Development: Applied to the Commercial Banking Sector in Egypt, Journal of Contemporary Business Studies, Volume 7, Issue 18, Part 1, July 2021.
11-Mar Babiker Musa Ahmed, Electronic Banking and Its Impact on Investment in Sudan, Master's Thesis in Economics, University of Omdurman Islamic, 2010.
12-Reham Ahmed Mamdouh Hassan, The Impact of Financial Technology on Economic Justice, Scientific Journal of Economics and Trade, Volume 50, Issue 2020.
13-Douglas Randall and Jennifer Shean, World Bank, Key Approaches to Accelerating Financial Access and Financial Inclusion, available at:
https://www.findevgateway.org/ar/libra1
14-https://www.findevgateway.org/sites/files/publications/2023/Senegal_DFS%20Risks%20Survey%20Report.pdf

15-Pearce, D. (2011). Financial Inclusion in the Middle East and North Africa Analysis and Roadmap Recommendations. Policy Research Working Paper 5610, World Bank.
16- Kambale, L.(2018, August). DIGITAL FINANCIAL SERVICES A CASE OF MALAWI. (I. T. Union, Ed.) Retrieved August 28, 2022,https://www.itu.int/en/ITU-D/Capacity-
17- Building/Documents/IG_workshop_August2018/Presentations/Session8_LindaKambale.pdf
18- WorldBank. (2021). Developing Digital Payment Services in the Middle East and North Africa. Washington DC.
19-peter, i. A., & E.menike, k. O. (2016). Impacte of Automated Teller Machine on Banking Services Delivry in Nigeria a Stakeholder Analysis. Bta. J. Ed. Tec. Soc., 71.
20- Barann, B., Hermann, A., Cordes, A. K., Chasin, F., & Becker, J. (2019). "Supporting Digital Transformation in Small and Medium-sized Enterprises": A Procedure Involving Publicly Funded Support Units. In Proceedings of the 52nd Hawaii International Conference on System Sciences
21-Agustriyana, D. & Setyadi, A. (2021). "The Influence of Digital Transformation on Leadership. Review of International Geographical Education" (RIGEO), 745-752. https://doi.org/10.48047/rigeo.11.06.91