Financial technology and the enablers of responding to the goals of sustainable development in Iraq... Realized Arab opportunities for the period 2017-2021

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Abstract

The research dealt with a conceptual presentation of electronic payment technology, its means, types and characteristics, with an explanation of the concept of sustainable development and the United Nations plan to achieve it during the period (2030-2015), and a review and analysis of the impact mechanism of adopting electronic payment technology on the sustainable development plan and its goals, and referring to indicators for measuring the infrastructure supporting this. Technology, and then the research presents these indicators in (Iraq) and some Arab countries (UAE, Qatar and Bahrain), and then presents the developmental and economic opportunities resulting from the adoption of these technologies as a society and institutions in some countries of the Arab region that have succeeded in shifting towards digitizing the payments sector and comparing it with Iraq up to a year (2021),The research reached a set of conclusions, the most important of which is that there are some determinants that work to spread and expand ATMs and points of sale, represented by the ability to meet local demand on the one hand, and the ability to overcome legal and regulatory obstacles to the deployment of these devices on the other hand. A number of recommendations, the most important of which is encouraging and strengthening cooperation between the public and private sectors to provide the necessary financial and technical resources to deploy and operate ATMs and points of sale in various Iraqi regions, and to facilitate and simplify licensing procedures and regulate the operation of ATMs and points of sale.

Keywords: electronic payment methods

Introduction

That you develop and develop a development process that you develop and develop. Other countries begin at a time when they are unable to truly develop in the reality of life and developments that they see in the future, and from this fact this research came; Development The development in information technology and the expansion of the use of applications and outputs of financial technology in particular, the technology industry in particular, Especially electronic payment methods in most

countries of the Western and Arab world. It has become imperative for the Iraqi banking system to shift towards the introduction and application of modern financial technologies in the joints of its payment system and try to consolidate these technologies for all segments of Iraqi society, as it carries with it stimulating engines and many development opportunities, as some have succeeded The countries of the Arab region are reaping these opportunities and they are (UAE, Qatar and Bahrain), and Iraq is still facing challenges that hinder the process of transitioning towards this technology. This research will try to recommend ways to treat it.

First: the importance of research

The importance of the research lies in clarifying the mechanism of the impact of financial technology on the goals of sustainable development through the electronic payment channel and its potential in generating sustainable development opportunities; Arab comparisons were inferred from the countries (UAE, Qatar and Bahrain), with an indication of the reality of Iraq from this technology until the year (2021).

Second: the research problem

The research problem lies in the modest levels of transmission, application and consolidation of electronic payment methods in the Iraqi environment until 2021.

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Third: the research hypothesis

The research stems from the hypothesis that "the Iraqi environment faces multi-faceted challenges, which are existing pitfalls in the path of possibilities for the consolidation of electronic payment technology in Iraqi society."

Fourth: Research objectives

The research aims to reach the following outputs:

1. Statement of the concept of electronic payment, its means, and a review of its impact mechanism on the sustainable development plan (2015-2030)
2. Inferring the development and economic opportunities achieved in some countries of the Arab region and analyzing the results with Iraq .

Fifth: research methodology

In view of the official data available and approved in the research, the deductive approach was adopted in its descriptive and analytical style.

Sixth: Research Structure

For the purpose of reaching the objectives of the research, this study was divided into three sections. The first section dealt with (electronic payments ... a conceptual approach), in which it reviewed the concept of electronic payment and indicated the types and means of electronic payment, and the second section included (financial

technology for payments and possible response to the goals of sustainable development) explaining the mechanism of the impact of electronic payment technology on sustainable development and its goals, with clarification of the indicators of electronic payment infrastructure, The third topic was titled (indicators of the infrastructure of electronic payments and the achieved development and economic opportunities ... Arab comparisons with Iraq for the period (2017-2021)). This topic reviewed the successes achieved in some countries of the Arab region (UAE, Qatar and Bahrain) resulting from the shift towards digitization Payments and their analysis with the Iraqi
environment.

The first topic

Electronic payments ... a conceptual introduction

Technological development led to the use of information and communication technology in all fields, including trade and banking, so the electronic character became predominant, which necessitated the creation of electronic payment methods in line with the nature of this development. Through this topic, the definition of electronic payment methods and their characteristics will be addressed.

First / conceptual framework for electronic payment

1- Definitions of electronic payment: There are many definitions provided for electronic payment methods, as follows:

• It is "the means that enables its owner to publish through direct transmission from a distance through public networks."

• "It is considered a means of payment that enables you to transfer money from any event to a price or technical method."

• "Electronic payment is money or currency that is exchanged electronically, including electronic money transfers and direct payment, and it is also called electronic money."

Among the previous definitions, electronic payment can be defined as "the technical process that guarantees the transfer of funds through electronic media."

2- Characteristics of electronic payment: The characteristics of electronic payment are embodied in the following:

• The international nature, that is, it is an acceptable method in all countries, as it is used to settle the account in transactions that take place through electronic space between users all over the world.

• It takes the form of payment with electronic money, which are regular monetary units. All there is that it is preserved electronically and the fulfillment is done electronically.

• Helps to settle electronic transactions and contracts concluded via the Internet between distant parties in the place where payment is made via the Internet through the exchange of information necessary to give the payment order according to

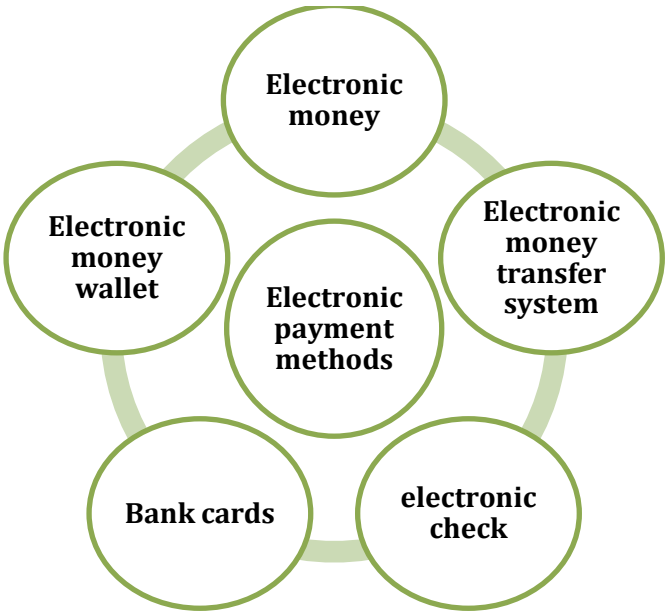
electronic data presented by the network to allow direct communication between the two parties to the contract.

It should be noted that the existence of an electronic payment system for the settlement of transactions that take place via the Internet requires a banking system designed to complete and facilitate the payment process, and that the ability of the authorities to manage remote transactions would provide mutual trust among dealers by these means.

Second: Types of electronic payment methods

There are many types and means of electronic payment, and they can be included in the following scheme (1):

Scheme (1) means of electronic payment



Scheme prepared by the researcher based on: d. Salam Moneim Meshaal, Electronic Payment Methods, Legal Research, Al-Nahrain University, Faculty of Law, 2015, p..5

1. Electronic money: Electronic money is among the most important means of electronic payment. It has a set of definitions, as it is defined by:

• The International Monetary Fund as "cash value in the form of credit units stored in electronic form or in electronic memory for the benefit of the consumer."

• As for the general definition of electronic money, it is “cash value stored on an electronic means that is paid in advance and is not linked to a bank account, and is widely accepted by non-issuers and is used as a payment tool to achieve various purposes.”

2. Electronic money wallet: It is a virtual payment method that is used to pay amounts of small value, directly or indirectly, that is, electronic digital units that are

transferred in a specific way from one person's account to another person, and fulfillment is done in two agency ways:

• The first method: the electronic units are stored on the hard disk of the client's personal computer through a program delivered to him by the company issuing these plates by the bank.

• The second method: to store electronic money in a small computer memory installed on a card carried by the consumer so that he uses it to pay off through this card.

3. Electronic check: An electronic check is defined as "a secured and documented electronic message or document that includes many data represented in (check number, payer name, payer account number and bank name, beneficiary name, value to be paid, unit of currency used, validity date The electronic signature of the payer and the electronic endorsement of the check). (pregnant)

To clarify the way in which the electronic check is used, it is as follows: "When the buyer pays the value of his purchases, he issues an electronic check for the value of what was purchased in favor of the seller, signs it with his electronic signature form, and sends it via e-mail to the seller, who in turn signs the same check with his electronic signature form, then returns it The seller sends it to the participating bank by e-mail, which in turn verifies the electronic signatures of both the seller and the buyer.

4. The electronic money transfer system: after banks used to carry out the transfer process based on a written order signed by the customer, it became possible to give the order electronically due to the emergence of safe systems for its use, which is electronic money transfer. The electronic money transfer system is defined as "a system that allows, in a secure electronic manner, to transfer money transfers or payments from one bank account to another, in addition to transferring information related to these transfers."

5. **Bank cards:** In the recent era of technology, credit cards have been widely used in purchase and payment operations instead of cash. These cards are a credit card that takes a rectangular shape, and it is made of plastic. The difference between it and the debit card is that the amount paid is not deducted. From the bank account directly, but it is deducted from the provider company in the form of a credit amount, and it is paid once a month, and companies that provide the card allow paying the debit amount of money in parts or in full with the imposition of bank interest on retail payment, Among the most common and used types of credit cards are the cards that are issued by the two largest international companies, which are (Master Card) and (VISA Card) for personal use in various financial transactions instead of carrying money that is exposed to theft and damage, and there are also types Several bank cards, including:

• Payment card: It depends mainly on the availability of an actual balance for the card holder with the bank or institution issuing the card in the form of a current account.

For payments, this current account can be funded from the credit payment card by transferring funds from the credit card to the current account, and one of the advantages of this type of card is the saving of customers' time and effort and the increase in the returns of the issuing banks.

• Debit card, monthly payment, or deferred entry: issuance of such cards does not require its holder to pay in advance to the issuing bank in the form of a current account, as in the previous type (payment card), but it is paid to his account with him on a monthly basis (meaning that the credit period for this card does not exceed a month), by sending the bank an account statement to the cardholder that includes the amounts owed by him as a result of his purchases of goods and services, as well as his cash withdrawals from exchange machines or banks, provided that this is within the limits of the card's maximum limit, and the issuance agreement includes that if the cardholder is late in payment within a period specific, the bank carries certain interest.

• Credit card: These are cards issued by banks within the limits of certain amounts that enable the holder to purchase immediately for his needs with a deferred payment for their value, provided that he pays the value of the purchases to the bank within 25 days from the date of receiving the purchase invoice. The customer does not pay any interest to the bank on this service if He paid within the specified period, but he bears interest of 15% on the remaining balance without payment. As for the bank, it charges the customer a commission (3-5%) of the invoice value.

The second topic
Electronic payment technology and enablers of response to the goals of sustainable development

First / sustainable development

Perhaps one of the best developmental achievements during the past two decades was by the United Nations, through its declaration of the Millennium Development Goals for the year (2000), which put forward a new and inclusive vision to improve the quality of life of the poorest and marginalized groups in a deadline that ended in the year (2015) (), and came after it The sustainable development plan that was approved in 2015 with a time limit that ends in 2030, and which presented a program of action for people, land and prosperity, through its (17) goals shown in Plan (2), and its (169) goals and indicators. The unique (231), this plan aims to define the direction of global and national policies concerned with development, and to provide new options and opportunities to bridge the gap between human rights and development. It also constitutes a general framework that guides global and national development action.

One of the most prominent features of this plan is that it integrated the economic, social and environmental dimensions in a comprehensive and balanced manner in order to achieve economic growth, social inclusion, and environmental protection. At that time, the general definition of sustainable development was developed, which is

(development that meets the needs of the present without compromising the capabilities of future generations to meet their needs).

The plan entered into force and officially began to be implemented on January 1 (2016), under which countries committed themselves to making efforts to eradicate poverty in all its forms, combat inequality, address climate change, and leave no one behind.

The 2030 Agenda for Sustainable Development is unambiguously rooted in human rights and is clearly anchored in the Universal Declaration of Human Rights, international treaties in the field of human rights and other relevant instruments such as the Declaration on the Right to Development (paragraph 10). Human beings for all" (Preamble to the 2030 Agenda) and are universally applicable to all persons and in all countries, including developed and developing countries alike. Most importantly, the 2030 Agenda must be implemented in a manner consistent with international law (paragraph 18)

Chart (2) Goals of the Sustainable Development Plan (2015-2030)

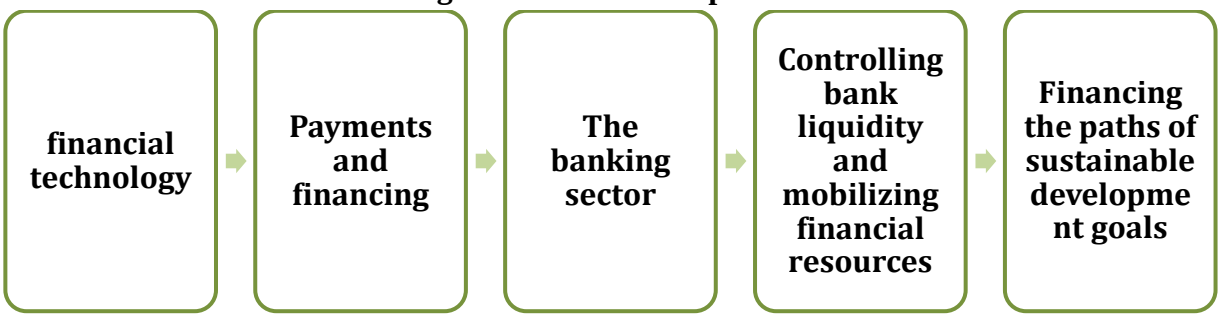
The plan was prepared by the researcher based on United Nations resolutions, .2015

Second: The mechanism of the impact of financial technology for payments in achieving sustainable development

The concept of sustainable development has witnessed a gradual development, and this is evident through tracking human development reports, as sustainable development has gone beyond the economic concept based on the quantitative increase in income to a comprehensive and dynamic international societal concept that puts individuals at the center of the development process, and that people are the real wealth, as A process of change in which the exploitation of resources, investment trends, aspects of technological development, and the change of institutions harmonize. Therefore, this concept focuses on investing in natural resources and not wasting them. On the other hand, we find that financial technology represented by electronic payment methods contributes to preserving these resources in an appropriate and sustainable manner.

There is a relationship and role for financial technology (as a modern financial experience) in the banking sector in enabling it through achieving economic, environmental and social development by enabling various social groups to obtain "electronic services" and benefit from them in meeting their needs, as the results of the technological revolution were reflected in all economic sectors. Which led to the production of a number of financial tools that contributed significantly to the development of the banking industry, and as a result of this widespread spread of it has become an essential part of the activities of human life. The relationship between financial technology and sustainable development can be depicted through the following diagram (3):

Chart (3) Mechanism of the impact of financial technology for payments in achieving sustainable development



The scheme was prepared by the researcher, relying on Susan Ransber, Stimulating Green Financial Technology, Master Thesis, Uppsala University, Sweden, 2018, p. 33.

It is clear from diagram (3) that the banking/financial sector is the bridge between modern financial technologies and sustainable development. To start with, financial technologies offer their services and advantages to the banking sector through its most widespread channels, which are:

1- Payments sector: when it provides bill payment services and payment solutions through the "International Information Network",
(Internet), mobile devices as well as electronic wallets. Also, electronic payment methods play the role of a gateway to the official banking system when performing legal obligations to a person, and they are also a powerful engine for growth. As these methods work to withdraw money from circulation and include it in bank accounts and provide low-cost funds to support investment bank lending and thus the entire economic activity, and this leads to more transparency and responsibility and enhances the efficiency and performance of the economy.

2- The personal finance sector: through the technical services provided by the "customer database", through which (spending, savings, and credit) and all tax liabilities resulting from electronic payments are monitored.

After the banking sector contains this technology and through the aforementioned sectors, the activity of the banking sector will return by withdrawing the amount of cash from circulation, and thus the banking liquidity will be controlled and the money intended for lending will be increased, after which the banking sector will play its role by including a larger number of loan recipients and supporting medium projects And micro and micro .

Especially supporting investment projects that develop the environmental aspect and conserve resources, which leads to the improvement of social welfare through the optimal use of available natural resources and the least possible cost of harm and abuse of the environment and to achieve the goals of sustainable development, and linking modern financial technology technology with its methods, mechanisms and electronic means to the goals of society in achieving Sustainable development, which includes achieving a rapid and beneficial transformation in electronic means and the technological base in order to achieve the ultimate goal, which is (providing the elements of human well-being with the best quality and the best life), while improving the quality of work and production relations, financial and banking services, as well as accelerating their operations .

After activating financial technology and including its innovations in the sectors (payments, personal finance and lending), then it is possible to analyze the resulting impact of adopting financial technologies and technologies in creating opportunities for achieving many of the seventeen goals set in the sustainable development plan.

Third / the relationship of financial technology for payments with the goals of sustainable development

In fact, financial technology has shown the coherence and strong interdependence between it and a world that seeks a more comprehensive, flexible, generalized, and environment-friendly financial system based on global partnerships. As one of its work tracks for the year 2030, the United Nations since 2016 has been studying the link between financial technology and sustainable development. In the same context,

the daily increase in the use of smart phones and the Internet has created the possibility for all segments of society to benefit from digital financial technologies, which enhances the achievement of the most important goals of sustainable development as follows :

1- The first goal (elimination of poverty): by providing access to affordable tools and services for low-income families that help increase their economic opportunities and enhance their standard of living in the long term.

2- The second goal (complete eradication of hunger): through easy access for male and female farmers to the funds needed to increase production and harvest at a lower cost, which contributes to increasing the total agricultural productivity, in addition to providing appropriate platforms for social transfers for those suffering from malnutrition; In this context, financial technology offers farmers different ways to obtain financing through crowdfunding and digital payment systems, in addition to a digital market that can connect all actors (farmers, landowners, investors, and consumers) to a platform that can enhance transparency, empowerment, and public participation in agriculture. ,,, This strategy contributes to increasing competition between suppliers and improving the sustainable capacity of agricultural products, as customers can see prices, compare products, realize their sustainable advantages, and direct payment thanks to financial technology .

3- The third goal (good health and well-being): Digital payments reduce contactless handling of money, especially in light of the (Covid-19) crisis, which limits the spread of viral infections, which leads to an increase in the index of good health.

4- The fourth goal (quality education): Digital finance helps middle- and low-income families improve their financial management and savings through budgeting applications, in order to control and pay education expenses.

5- The fifth goal (gender equality): By empowering and enhancing the financial capacity of women, as digital technologies help to collect data on business owners, which leads to an understanding of their needs and a better assessment of their creditworthiness, and thus being able to design digital financial products that are directed specifically to women. .

6- The tenth objective (reducing inequalities): The work of financial technology does not depend on the customer's social personality, but rather considers him as a human being who has impacts on society at all levels, and its goal is to increase his income and improve his financial flexibility .

7- Goal 13 (Climate Action): Digital finance helps individuals, companies and the government combat and prepare for the harmful effects of climate change, by providing the necessary financial resources to conduct research and development studies and experiments related to future climate changes. flexibility and stimulating sustainable investments,

8- Goal Sixteen (Peace, Justice, and Strong Institutions): Digital payments improve transparency of transactions to and from governments, and help raise the level of accountability around governments' use of public funds, allowing for increased funds available for vital public services, investments and transfers, as well as making electronic payments fulfillment Optimal financial obligations at the level (individuals and institutions).

9- The seventeenth goal (strengthening and revitalizing the global partnership): Electronic payments work to liberate from the bars of commercial closure with the countries of the world, as it works to open and expand electronic trade in goods on the one hand, and the freedom of trade exchange through the international money transfer system that is the most secure and reliable for all trading parties from On the other hand .

The hypothetical role of electronic payments in improving the indicators of the sustainable development goals can also be embodied through the following table (1):

Table (1) hypothetical scenarios of the effects of electronic payments on some of the sustainable development goals

assumed results	The role of electronic payments	Sustainable development goals	
		secured	sequencing
Reducing the poverty rate to less than %20 and the disappearance of hunger	Increasing access to financial services with the simplest tools and lowest costs	Eradication of poverty and eradication of hunger	the first and the second
Raise the index of good health and contribute to ending the Covid-19 pandemic	Reducing contactless handling of cash in light of the spread of the Covid-19 virus	good health	the third
Optimal spending on education within the same family,	Adjusting the financial budget for middle and low-income	good education	the fourth

and thus the return of education indicators to international competition	**families through electronic budgeting applications**		
Raise the level of economic empowerment of women in the labor market, reduce the size of marginalized groups, and promote balanced economic participation	**ng financial resources available to women in a manner that is no different from financing opportunities for men**	**gender equality and reduce inequalities**	**5th and 10th**
Contribute to reducing harmful environmenta l emissions in the future	**Mobilizing and allocating the necessary financial resources to spend on research and development studies on future climate changes**	**climate action**	**Thirteenth**
Improving the indicators of society and good government	**Transparency in fulfilling financial obligations at the level of individuals, and enhancing the work of electronic clearing systems**	**Peace, justice and strong institutions**	**sixteen**

	between the state's joints at the level of institutions		
Liberalizing the restrictions of international exchange of goods and money and enhancing confidence between different countries	**Ensuring the fulfillment of the financial obligations of foreign trade through the electronic commerce channel**	**Strengthening and revitalizing the global partnership**	**Seventeenth goal**

Fourth / indicators for measuring electronic payments

Countries relied on indicators to measure financial technology, but the adoption of a specific indicator in one country differs from another country as a result of the difference in its economies. personal, money transfer, digital currency, crowdfunding).

In the following, we will present the most prominent indicators related to the infrastructure of electronic payments, as it includes indicators that measure the availability of the enabling environment for electronic payments, which is embodied in the infrastructure for the possibility of electronic payment within the country, represented by the following:

• The spread of automated teller machines and POS-ATM points of sale; Which measures the spread of electronic banking in the country.

Open banking operations; What is meant by open banking operations is the process of synchronizing financial customer data by banks with electronic payment companies and electronic payment methods, and it contains many indicators, but we will confine ourselves to the most available indicator for data in the regions of the Middle East and our Arab countries, which is (electronic banking cards in all its forms), where This indicator is considered one of the very important indicators that measure the acceptability of electronic payment methods by the population of the country.

• Paying and transferring money for bills over the phone and the Internet; In order to know the structural environment of this indicator, some of its sub-indicators must be taken, which are (the spread of smart phones, internet flows in mobile phones), and thus the possibility of actual uses of electronic payment applications will be known. Table (2) shows the categories and how to measure the indicators in question.

Table (2) the most prominent indicators for measuring the infrastructure of electronic payments

Automatic teller machines and points of sale (POS - ATM) index	
pointer	**class**
The number of ATMs or points of sale for every (100,000) one hundred thousand adults of the population	**Measuring banking penetration of devices POS - ATM**
Open banking index	
pointer	**class**
The total number of electronic cards for the population / the total population x 100	**Knowing the acceptability of electronic banking cards in all its forms by the population**
Payment index and money transfer for bills over the phone and the Internet	
pointer	**class**
Number of subscribers to communication lines / total population x 100	**The spread of smart phones**
The total number of subscribers to mobile internet service lines / the total number of subscribers to mobile phone lines x 100	**Internet streams in mobile phones**
Number of subscribers to electronic wallet applications / the total number of subscribers to internet service lines on mobile phones x 100	**Index of owning electronic wallets**

:The table was prepared by the researcher based on

- Latin American and Caribbean Perspective , The Role of Payment Systems and Services in Financial Inclusion, Mexico, 2016 , p62 .

The third topic
Indicators of the infrastructure of electronic payments and the achieved development and economic opportunities... Arab comparisons with Iraq for the period (2021-2017)

some Arab countries (2017-2021)

Since the payment system is the technical, organizational and institutional infrastructure that is used to transfer money between individuals, companies and institutions, and in order to analyze the reality of Iraq in terms of electronic payment

services, it is necessary to review the indicators of the infrastructure supporting electronic payment in Iraq, and it simulates the extent of public access to services Electronic payment and collection, taking into account the developed Arab countries in this field, namely (UAE, Qatar and Bahrain).

Prevalence of automated teller machines (ATM) and points of sale (POC)

Among the important means that contribute to access to financial and banking services as soon as possible and at the lowest cost are :

Automated Teller Machine (ATM)

Points of sale (POS)

The spread of automated teller machines and points of sale is also one of the main indicators of the infrastructure supporting the shift towards electronic payments. By providing these devices, individuals can use electronic cards and other electronic banking services with ease, which encourages the shift towards electronic payment and enhances the digital economy, and when the infrastructure is strengthened For electronic payment, individuals in low-income communities can access banking services and enjoy financial inclusion.

As the increase in electronic payment services is one of the main objectives that the Central Bank of Iraq seeks to increase, in order to include the largest possible number of individuals within the financial system and increase operations within the financial system and the use of electronic payment tools, and get rid of dealing in cash gradually, and we will review the trends of the increase in The spread of (ATM) and (POS) devices throughout Iraq over the past (5) years, as shown in Table (3):

Table (3) Number of ATMs and points of sale per 100,000 adults in Iraq for the period (2017-2021)

The number of point-of-sale (POS) devices per (100,000) adults	Number of point of sale devices (pos) (device)	Number of Automated Teller Machines (ATM) per (100,000) an adult	Number of automated teller machines (ATM) (device)	Adult population (inhabitants)	year
4.16	918	2.8	656	22,065,113	2017
9.57	2,200	3.6	865	22,970,121	2018
9.55	2,226	4.1	1,014	23,294,232	2019
31.54	7,540	5.6	1,340	23,902,832	2020
37.31	9,151	6.3	1,566	24,522,262	2021

The table was prepared by the researcher based on the Central Bank of Iraq,

Department of Statistics and Reports, Annual Statistical Bulletin 2021, p. .111 Population per 1device = adult population / available devices (total) Number of devices per (100,000) adult = 100,000/ population per one device

At the local level in Iraq, the number of point-of-sale (POS) devices has witnessed a clear increase, from (9) devices per (100) thousand adults in 2019, to (37) devices per (100) thousand people. exaggerated (), but this penetration of payment services is still below the level of global ambition;
In the United States of America, the number of point-of-sale (POS) devices reached (3318) devices per (100) thousand adults, and in Japan it reached (3247), and in Australia it reached (1189) devices. It is worth noting that there are international restrictions on the deployment of this Devices in any country, the most prominent of which can be summarized as follows :

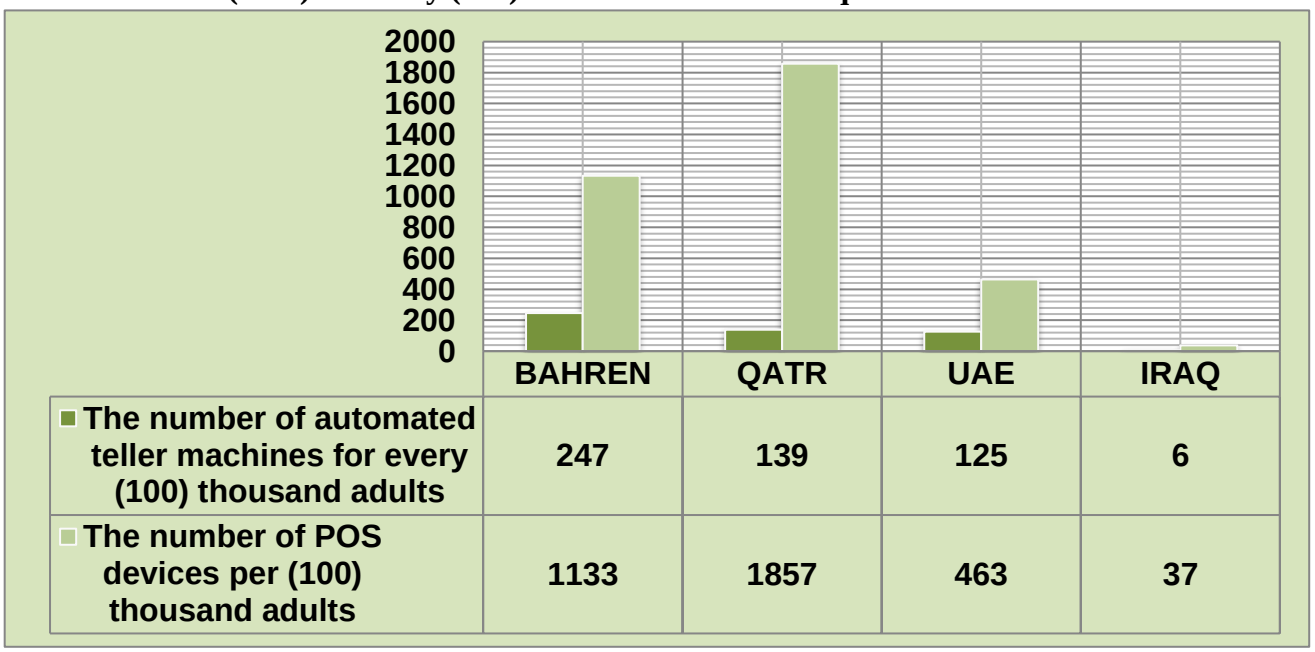
• ***Ability to meet local demand:*** The actual use of POS devices depends on the country's ability to meet local demand when providing these services, through training workers and providing the necessary technical support.
• ***Legal and regulatory obstacles:*** Some countries impose legal and regulatory obstacles on the use of POS devices, which reduces their prevalence in those countries. On the contrary, if there is legal and regulatory support for these devices, they will definitely increase the number of these devices.

Therefore, the reason for the modest prevalence of POS devices in Iraq is the weakness of the aforementioned determinants; In addition, most commercial markets and shops deal with cash and not POS machines, because this culture is not widespread, and this process is still obscure to most shop owners, especially in remote areas.

The reality of Iraq until the year (2021) witnessed the spread of (ATM) devices and achieved an increase in their spread throughout Iraq, and this increase was concentrated especially in large cities such as the capital (Baghdad) and governorates of an internal commercial nature such as the governorates of the Kurdistan Region of Iraq (Erbil, Sulaymaniyah, Dohuk). The justification for this is that these cities are characterized by the proliferation of large commercial enterprises, as can be seen from the prevalence of payment services to the population of Iraq per (100) thousand people in 2017, which is low to the extent of 2019. However, a noticeable improvement occurred during the period between (2019-2021), after the number of ATMs was (4) machines per (100) thousand adults, and in the year (2021) it reached (6) machines per 100 thousand people. An adult, as the spread of (ATM) devices was limited to malls, commercial centers, some government departments, headquarters for borrowing from institutions and bank branches, and there are no devices scattered in public areas, but with the continued security improvement in Iraq, coinciding with the efforts of the Central Bank of Iraq to encourage banks To open the largest possible number of ATMs, this percentage is expected to increase in the coming days .

Referring to the comparison of Iraq with some advanced countries in the Arab region in publishing automatic teller machines (ATM) and point-of-sale devices (POS), we will find what Figure (1) shows as follows:

Figure (1) The number of automated teller machines (ATMs) and points of sale (POS) for every (100) thousand adults in Iraq an



	BAHREN	QATR	UAE	IRAQ
The number of automated teller machines for every (100) thousand adults	247	139	125	6
The number of POS devices per (100) thousand adults	1133	1857	463	37

d some Arab countries for the year (2021)

Figure prepared by the researcher based on:

1- -Table data (6)

2- -The telecommunications sector, the official portal of the UAE government, is available on the website:

https://u.ae/ar-ae/information-and-services/infrastructure/telecommunications

last entry 27\4\2023

2- The Qatari Ministry of Communications and Information Technology, available on the website:

https://mcit.gov.qa/ar last entry 27\4\2023

3- The Bahraini Ministry of Communications and Transportation, available on the website**,** **https://mtt.gov.bh/ar** last entry 27\4\2023

Figure (1) shows the sharp decline of Iraq in the field of deploying automated teller machines (ATMs) and point-of-sale (POS) devices compared to the developed Arab countries in the field of the structural environment for electronic payments, despite the improvement and increase in the number of these devices in Iraq over the years (2017-2021) and a higher number of (3-6) ATM devices per (100,000) adults, respectively As well as the increased coverage of point-of-sale (POS) devices from (4-37) devices, as shown in the previous table (6); However, these numbers are considered very low in the regional comparison shown in Figure (); The reasons for the comprehensive coverage of these devices in the comparison countries are attributed to several institutional measures taken by these countries, including :

1. Providing financial incentives to financial and commercial institutions in order to increase and spread automated teller machines and points of sale (ATM-POS) in both urban and rural areas.
2. For their central banks to establish partnerships with banks and other financial institutions to expand the deployment of these devices.
3. Establishing electronic platforms and advanced applications to provide and disseminate electronic culture, appropriate education and training, as well as financial support and continuous incentives for those working in the field of innovation and development in order to submit developmental and continuous proposals in this regard.

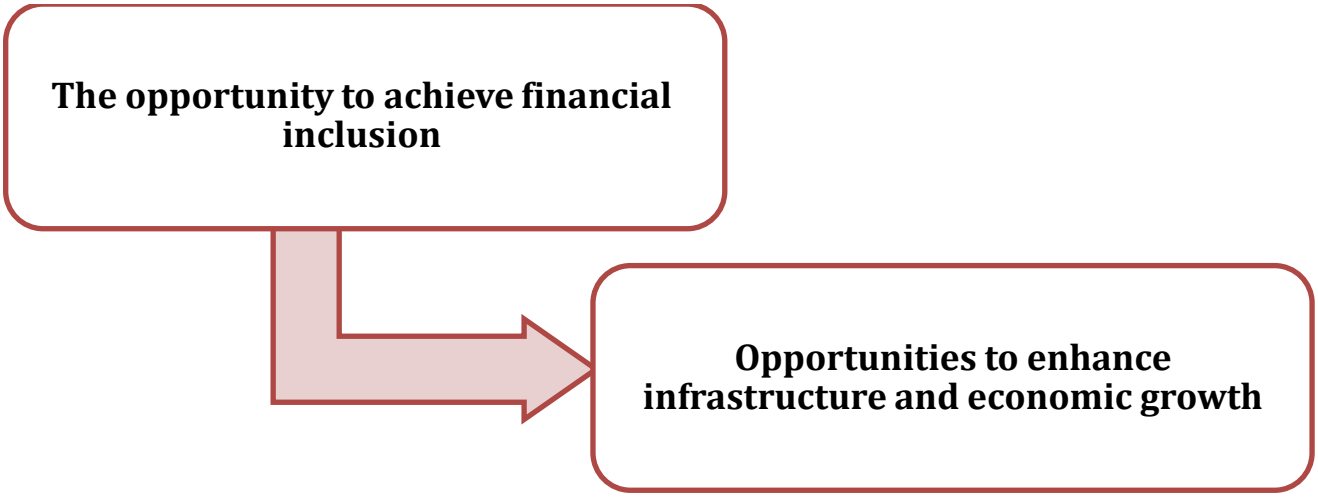
In Iraq, it is worth noting that one of the most important structural weaknesses in this field is the lack of a fixed regulation related to bearing the costs of publishing and increasing the numbers of these devices, which is one of the justifications for the reluctance of the dealing parties in Iraq to shift towards modern technology in electronic payments, and cling to the traditional monetary system.

Second: The achieved development opportunities resulting from the adoption of electronic payment... Arab approaches with Iraq until (2021)

The transition to electronic payment is one of the practices that support sustainable development in many global and regional countries, and some countries in the Arab world have made remarkable progress in sustainable development indicators as a result of adopting electronic payments.

It embodied the structural indicators of the electronic payment environment in Iraq and some of the developed Arab Gulf countries in this field, namely (the United Arab Emirates, the State of Qatar and Bahrain) until the end of the year (2021); The great efforts of the desire to get rid of the traditional paper system to the payment technology system, and the progress in these indicators for the comparison countries resulted in achieving development opportunities that contribute greatly to achieving the goals of the sustainable development plan, as illustrated by the following chart (3):

Chart (3) The development opportunities achieved in the countries (UAE, Qatar and Bahrain) as a result of the shift towards payment technology for the year (2021)



The scheme was prepared by the researcher, based on the transformations of the electronic payment sector in the Arab Gulf countries, challenges and opportunities, a study by the University of Bahrain, 2021, p. 29.

Diagram (3) shows developmentally responsive opportunities; As a result of the shift towards electronic payment applications in the comparison countries, which were embodied in three opportunities; However, its impact was significantly and clearly reflected on achieving progress and increasing the percentages of development and economic indicators. The reality of these opportunities achieved in the comparison countries will be inferred successively until the year (2021).

1- The opportunity to achieve financial inclusion for the comparison countries and Iraq

Financial inclusion enables individuals to access basic financial services and banking products, regardless of their location, through the deployment of automated teller machines (ATMs) and points of sale (POS), as well as providing means of using them to the most remote points of society, which helps in improving their lives and reducing poverty. for the individual and society.

It is worth noting that the opportunity to achieve financial inclusion also has an impact on many development goals such as (eliminating hunger, promoting gender equality and promoting sustainable economic growth), For example, financial inclusion can help promote economic growth in remote areas where individuals have difficulty accessing traditional financial services, by providing payment methods and innovative financial solutions based on digital technology. Financial inclusion can also improve the situation of women, youth and poor groups. and disadvantaged, enabling them to obtain microcredit and improve their chances of working and living in dignity; Therefore, it can be said that financial inclusion is one of the main tools to achieve higher rates in the sustainable development plan. It is also possible to infer the rate of progress in the levels of financial inclusion by knowing its most important statistical indicator, which is; The ***"percentage of official bank account holders"*** among adults in society, as this indicator is one of the important and basic global

indicators for measuring access to financial services by all segments of society. It reflects the ability of individuals to access banking and financial services and lift the poor out of their poverty. The figure shows (2) The regional significance of the comparison countries when they adopted the electronic transformation of payments and what they achieved in raising the percentage of the financial inclusion index:

Figure (2) Percentages of official bank account holders in some Arab countries and Iraq for the year (2021)

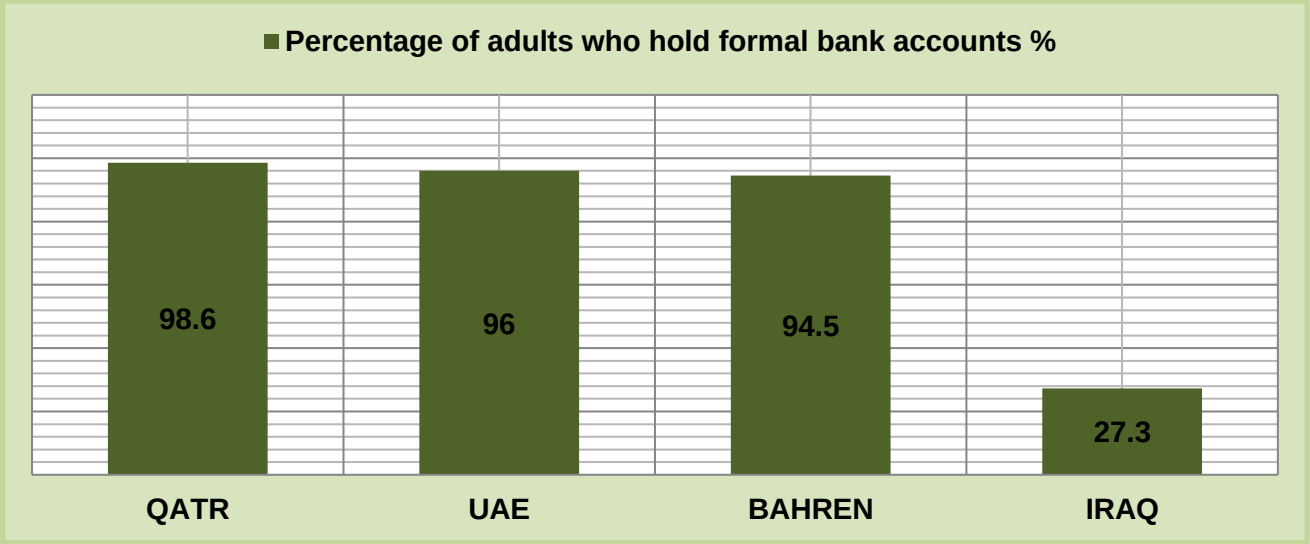


Figure prepared by the researcher based on

1- The Central Bank of Iraq, Annual Statistical Bulletin 2021, p. 113.

2- -The telecommunications sector, the official portal of the UAE government, is available on the website:

https://u.ae/ar-ae/information-and-services/infrastructure/telecommunications

last entry 27\4\2023

2- The Qatari Ministry of Communications and Information Technology, available on the website:

https://mcit.gov.qa/ar last entry 27\4\2023

3- The Bahraini Ministry of Communications and Transportation, available on the website**, https://mtt.gov.bh/ar** last entry 27\4\2023

From this comparison presented in Figure (2), we find that Iraq is one of the countries with low rates of financial inclusion, as the statistical website of the Central Bank of Iraq for the latest census of the year (2021) indicates that the adult population of Iraq, of whom (27.30%) have bank accounts, and on the other hand, we find that there is A rate (72.7%) of adults in Iraq were unable to access financial services. Although the percentage of those who have accounts in financial institutions has doubled, it is still below the required level, and far from the regional average.

At the regional level; Especially the developed countries in this field, namely (Bahrain, the Emirates and Qatar), where we find that the majority of their citizens own a bank account in an official institution, with rates exceeding (90%); The

justification for this progress is attributed primarily to the adoption of modern financial technologies, in addition to several reasons, including:

• ***Government support:*** Governments in these countries play an important role in encouraging citizens and residents to open official electronic bank accounts, by providing a legal and legislative environment that motivates people to do so.

• ***Higher electronic banking regulation:*** by opening an electronic channel between bank accounts; It made it possible for settlement accounts to synchronize their balances with other bank savings accounts. Which led to the provision of banks by increasing the number of bank accounts opened with high organization and coordination.

• ***Digital Transformation:*** Modern technology facilitates the process of opening bank accounts and transferring funds easily and quickly, and makes them more secure, which encourages citizens and residents to use these services.

• ***Financial culture:*** These countries work to enhance financial culture and raise awareness of the importance of official bank accounts to achieve personal and family financial goals. These countries also have a strong and advanced infrastructure for electronic payments, in addition to the presence of training and awareness programs to increase digital and financial awareness of citizens and residents, which helps To increase the number of bank account holders in these countries.

In contrast, these percentages were in Iraq; Despite the development of the ratio over the past (5) years, it still suffers from a decline in regional comparison; The reason for this is that the majority of young people in Iraq do not enjoy financial independence before the age of 25, and individuals under the age of eighteen cannot open and manage their own bank accounts, as the laws define the age of eighteen as the age of puberty and what is below is considered a minor. Which led to low rates of financial inclusion in Iraq, and there are other factors that led to the decline of these rates, which can be summarized as follows :

• ***Political stability:*** Iraq suffers from political and security instability for a long time, which leads to a decline in citizens' confidence in the banking system and the unwillingness to invest in it.

• ***Lack of confidence in the banking system:*** the population in Iraq may have misconceptions about the banking system and lack of confidence in it, which makes them prefer to rely on cash and monetary transactions rather than electronic banking services.

• ***Lack of technical awareness:*** Some residents in Iraq may suffer from a lack of technical awareness and the inability to use modern technology, which prevents them from benefiting from electronic banking services.

• ***Poor infrastructure for electronic payments:*** The lack of technical infrastructure in Iraq may affect the ability to provide reliable and secure electronic banking services, which leads to a decrease in the desire to use these services.

In general, it can be said that the low percentage of owning bank accounts in Iraq is due to a group of economic, social and technical factors, and requires multiple solutions to improve this percentage.

2- Opportunities to enhance infrastructure and economic growth

The results of the opportunities to enhance infrastructure and economic growth are reflected in the eighth goal (decent work and economic growth) and the ninth goal (industry, innovation and infrastructure) of the sustainable development goals. (4) the following:

Table (4) Indicators of the two goals (eighth and ninth) of the indicators of the sustainable development goals 2030

pointer	secured	the goal
The number of ATMs adults 100,000per	**Decent work and economic growth**	**Eighth**
Percentage of adults who have an account with a mobile financial services provider (e-wallets (applications		
Percentage of internet users on mobile phones out of the total % adult population	**Industry, innovation and infrastructure**	**ninth**

Table (4) shows the significance of the contribution of adopting payment technology in raising the rates of achievement of sustainable development goals in the comparison countries; This is when the indicators of the two goals (the eighth and the ninth) intersect and overlap with the indicators of the infrastructure of electronic payments for these countries.

With regard to the indicator of the number of automated teller machines (ATMs) per (100) thousand adults; Bahrain provided the highest percentage of publishing these devices with (247) devices, followed by the State of Qatar with (139) devices, the United Arab Emirates with (125) devices, and Iraq with (6) devices for every (100) thousand adults. Consequently, the percentage of achieving the eighth goal as a result of these results reached (81.2%) for Bahrain, (79.4%) for the State of Qatar, (76.1%)

for the UAE, and Iraq with a very limited completion rate of (17.1%). The same applies to the indicator of the ninth objective, as the results of the indicators were common with the indicators of the electronic payment infrastructure. They attribute the reasons for the paradoxes in the results shown to be the same as those mentioned in the previous section, which leads these facts and indications to the need for an actual move towards changing the reality of payment methods and working to create the necessary environment to achieve them.

Conclusions and recommendations

conclusions

From the foregoing, the following conclusions were reached:

1. Financial technology plays an indicative role on the sustainable development plan and its objectives through the electronic payment channel, by expanding the paths of financial inclusion by relying on the deployment and distribution of ATMs and POS devices to the farthest geographical point.

2. There is an intersection between the indicators of the infrastructure of electronic payment methods and the indicators of economic growth and the provision of job opportunities, which are embodied in the eighth and ninth goals of the sustainable development goals, which indicates the existence of a direct relationship between the infrastructure of electronic payment with the goals of sustainable development.

3. There are some determinants that work to spread and expand ATMs and points of sale, represented by the ability to meet local demand on the one hand, and the ability to overcome legal and regulatory obstacles to deploying these devices on the other hand. Selling (POS) in Iraq is double the above determinants; In addition, most commercial markets and shops deal with cash and not POS machines, because this culture is not widespread, and this process is still obscure to most shop owners, especially in remote areas.

Recommendations

Based on the conclusions reached, we recommend the following:

1- Formation of concerned cadres by the Central Bank and obliging the Association of Iraqi Banks to form fragmented detachments, each according to its geographical area, with the mission of technical education, increasing digital awareness of users, and promoting the benefits of electronic money dealing and the dangers of paper money.

2- Encouraging and strengthening cooperation between the public and private sectors to provide the necessary financial and technical resources to deploy and operate ATMs and points of sale in various Iraqi regions, and to facilitate and simplify procedures for licensing and regulating the operation of ATMs and points of sale, and encouraging operators and banks to invest in these services.

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