



## RESEARCH ARTICLE

# Digital Transformation and Its Impact on the Banking Sector's Competitiveness in Iraq

Tarek Sadraoui <sup>1\*</sup>, Radhwan Mhmood Flayyih AL-Bayatl <sup>2</sup><sup>1,2</sup>Faculty of Economics and Management of Sfax, University of Sfax, Tunisia

ARTICLE INFO	ABSTRACT
Received: Sep 23, 2024 Accepted: Nov 9, 2024	This research intended to examine the significance of digital transformation (DT) on the Banking Sector's Competitiveness (BSC) in Iraq from (2003-2023). This is to formulate the necessary proposals to enhance the role of DT in supporting the BSC in Iraq in the future. This study was based on the following hypotheses: The weak impact of DT on the BSC in Iraq is due to the challenges facing DT in Iraq in general and the banking sector in particular. A significant correlation exists between DT and the BSC in Iraq (2000-2023). This study relied on the deductive approach (descriptive tool and analytical tool). In addition to the method (correlation matrix), this study found positive correlations between the indicators of Information & Communication Technology (ICT), fixed-line telephone subscriptions per 100 people (x2, mobile phone subscriptions (MPS) per 100 people (x3), and all indicators of the BSC. In contrast, the information and communication technology indicators were negative compared to the banking depth indicator. These relationships were significant, except for the relationship between internet users' percentage of the total population and banking depth in Iraq during the study. In light of this, the study presented a set of proposals to enhance the role of DT in improving the BSC in Iraq, including developing digital infrastructure by investing in technology, improving internet connectivity, enhancing cybersecurity, and implementing strict security measures, using big data to analyze customer behavior, supporting customers through digital channels, and enhancing financial inclusion.
<b>Keywords</b> Digital transformation Competitiveness Banking sector	
<b>*Corresponding Author:</b> tarek.sadraoui@gmail.com tsadrawi@imamu.edu.sa	

## INTRODUCTION

Digital technologies help accelerate communication and communication processes inside and outside institutions and improve productivity and efficiency in various tasks (Inel, 2019). DT can improve administrative and financial processes, increase transparency, and control operations and costs (Abass et al., 2023; Hasan et al., 2023; Hasan et al., 2023; Flayyih et al., 2024). Thus, DT is crucial for companies and institutions that want to succeed and develop sustainably in the modern digital age (Balbay, 2022). On the other hand, the banking sector plays a leading role in economic and social life, and the banking sector is one of the most important economic subdivisions, as banks undertake borrowing, financial mediation, and directing investments (Al-Rafaei, 2023; Awais et al., 2024). The BSC can be achieved by adopting DT strategies that enhance efficiency and effectiveness in banking operations, improve customer experience, and provide advanced and innovative banking services (Abass et al., 2023). This study aimed to answer the following core question: How can the role of DT on the BSC in Iraq be analyzed? This fundamental problem raises a set of sub-questions: 1) How did

economic theory and literature address the relationship between DT and the BSC? 2) What is the reality of DT and the BSC in Iraq from (2000-2023)? 3) What proposals can be followed to enhance the role of DT in achieving the competitiveness of the Iraqi banking sector in the future? The main objective of this study is to "analyze the role of DT on the BSC in Iraq." The following sub-objectives emerge from this primary objective: 1) Developing a theoretical framework that defines the relationship between DT and the BSC, 2) Describing and diagnosing the reality of DT and the status of the BSC in Iraq from 2000-2023), and finally, some necessary proposals are presented to enhance the role of DT in supporting the BSC in Iraq in the future.

### **Previous studies**

The economic literature is full of many studies that are associated with current study which is DT and its impact on the BSC in Iraq, which can be briefly identified by monitoring the objectives of each study and the most important results are reached, the study (Al-Batrani & Al-Jazzar, 2023), which aimed to determine the degree of availability of requirements for applying DT (human competencies, infrastructure, big data) in the Egyptian Stock Exchange banks (ESE), and to determine the impact of using DT applications (human competencies, infrastructure, big data) on their performance. The researcher utilized a descriptive-analytical approach to achieve research aims. The study concluded that there is a difference in the availability of requirements for applying DT in the banks of the study sample, in addition to the presence of a substantial impact of the DT dimensions (human competencies, infrastructure, and big data) on their performance. The study (Tran., Le, & Hang, 2023) investigated the impact of digital transactions on the performance of banks for the years 2012-2019. The study found an impact of transactions managed through digital technology on the activities of banks and their branches by improving the quality of services through new channels in developing countries. These high-quality services and products improve banks' customer relationships and increase operating revenues. A study (Alam, 2020) aimed to enhance the competitiveness of electronic banking services (ATM, electronic payment, mobile banking, credit card, internet banking) in light of DT technology and financial inclusion, and thus the competitiveness and financial performance of banks in Egypt regionally and internationally, and thus the competitive capabilities of the economy. The study relied on the descriptive analytical approach. The study concluded that electronic banking services contribute significantly to saving effort, time, and costs for all customers, expanding market share, and achieving a competitive advantage for banking institutions. A study (Dawoud & Al-Mahdi, 2020) aimed to analyze and determine the level of electronic banking in Algeria from (2011 to 2019), to determine the extent of its impact on the indicators of DT of banking on the financial performance of the Algerian banking sector.

The descriptive analytical approach was relied upon. The study concluded that the indicators of DT positively impact the per capita share of ATMs and the percentage of increases in the number of bank cards on the return on bank assets in the Algerian banking sector. The study (Al-Haddad, 2020) aimed to explore the application of DT technology in banking institutions and determine the impact of this application on two main axes: the first is internal audit activity, and the second is financial inclusion within Egyptian commercial banks and its reflection on achieving sustainable development according to Egypt's Vision 2030.

The study relied on the inductive approach. The study concluded that applying DT mechanisms in banks strongly impacts the development of internal audit procedures. The results also proved the role of digital technology in performing banking transactions and using modern technologies to provide banking services to achieve financial inclusion in Egyptian banks. The study (Shahata, 2020) looked at the extent to which the quality of services provided by administrative organizations to beneficiaries is affected by DT enhancing the work of e-government by focusing on meeting standards and requirements to avoid problems in its application in Arab countries, especially Egypt, by emphasizing the application of principles and mechanisms of digital management. The study also

showed the importance of setting appropriate accounting rules for its success in accountability and accountability in the event of negligence. Therefore, DT's success primarily involves a vision and financial and structural support from senior management to create value for the government organization and achieve future strategic goals. The study results indicated the need to pay attention to the human aspect in the organization by providing advanced capabilities to develop and enhance their skills through efficient training programs to achieve digital excellence in the work environment.

The study (Djalalovna & Olloyorovna, 2023; Al-khresheh., 2021) was conducted to determine the extent of improvement in the competitiveness of banks and increase the efficiency of the services they provide by identifying the opportunities and conditions that must be met, which is reflected through the role played by digitally managed banking services. The study concluded that managing banking transactions digitally reduces costs, improves the efficiency and performance of banks, and improves their competitiveness.

The focus was on benefiting from financial technology, developing digital banks, improving business processes, and facilitating the provision of customer services via the internet and mobile phones. It stressed that banks that adopt digital banking services and seek to increase their efficiency will be more able to compete and succeed in the banking market. The study (Ahmed, 2022; Al-khresheh., 2024) aimed to identify the impact of the digital economy on increasing the competitiveness of commercial banks in Egypt in light of the banking sector adopting a strategy to launch more electronic banking services in order to reach the most extensive customer base and enhance financial inclusion, one of the essential items in Egypt's Vision 2030.

The field study concluded that the digital economy achieves multiple advantages for banks and customers, including ease of conducting transactions, reducing financial costs, and digitizing internal operations, contributes to reducing illegal operations, combating money laundering, and providing banking services at the highest level of efficiency and quality, thus increasing the competitiveness of banks, applying the latest international standards, and maximizing the local product of the Egyptian economy. The study (Ghanimi, 2016; Jam et al., 2016) aimed to achieve a main objective represented in trying to highlight the role of IT governance mechanisms in improving the quality of accounting information and increasing the competitiveness of commercial banks, especially in light of technological progress and the risks that banking activities may be exposed to at present. The study concluded that IT governance helps in providing the necessary indicators and standards to measure performance in companies and banks and also contributes to supporting the competitiveness of banks in particular, which achieves the interests of all parties related to the bank, as well as that the application of IT governance mechanisms contributes to activating the process of managing risks associated with activities and providing electronic services in banks, which ensures the achievement of strategic objectives represented in increasing the expected return, growth, and continuity.

The study (Muhammad, 2013) aimed to measure the competitiveness of Iraqi government banks and their role in adopting a competitive advantage by focusing on electronic banking services. The study concluded that Iraqi government banks rely on their websites on the internet to introduce themselves and their branches, in addition to introducing customers to their traditional and straightforward electronic services that are still in their infancy and depend on electronic plastic cards, ATMs, and fast transfers. The study seeks to test the following hypotheses:

**H1:** *The weak impact of DT on the BSC in Iraq is due to the challenges facing DT in Iraq in general and in the banking sector in particular.*

**H2:** *A significant correlation exists between DT and the BSC in Iraq (2003-2023).*

The study relies on the inductive approach to test these hypotheses based on the descriptive and analytical tools to diagnose the reality of DT and the state of the BSC in Iraq. The analytical tool is used to analyze the impact of DT on the BSC in Iraq (2003-2023).

## **Theoretical Framework for DT and the BSC**

### **What is Digital Transformation?**

In the era of the digital economy, digitization has become a necessary strategy for managing institutions rather than a technical issue, according to many studies. In American and British companies, 90% of business leaders confirmed that IT and digital technology will increasingly contribute to the development of the overall business of institutions in the next ten years (Wang, 2020). DT refers to using computer technology and the internet to create more efficient and effective economic value, according to a study (Muehlburger et al., 2019). DT is a process of fundamental changes within the company's value creation chain or internal structure that is either a cause or a prerequisite for using technology.

According to a study (Vial, 2019), DT is a process aimed at improving entities and institutions by launching significant changes to their characteristics using groups of information, computing, and communication technologies. The BSC: The Organization for Economic Co-operation and Development stated that competitiveness shows the extent of a country's ability to produce goods and services that will increase the real income of its citizens while obtaining high international standards in terms of competition in free and fair markets. (Zaghdar, 2011). The importance of a country's competitiveness stems from encouraging innovation in improving production and operational processes and allocating materials optimally, which will overcome difficulties in service efficiency, reduce costs, increase productivity, and improve consumer satisfaction. A competitive environment ensures good living standards by enhancing economic growth and efficiency (Elasrag, 2013).

### **The relationship between DT and the BSC:**

The banking sector digitization can be predicted to keep pace with the growing expectations of the world, and the increasing use of smartphones has reduced human errors and increased convenience. Cyber threats are rising; hence, banks must be vigilant and prepared to deal with cyber attacks. Digitization is vital for data processing, storage, and transmission, as it allows information of all types to be transferred in all forms with the same efficiency (Harchekar, 2018). The essential services digital banks seek to invest, trade, and transfer money through electronic services such as mobile phone applications will drive the growth of the banking sector.

Digital banks achieve many advantages (Naveena, 2018). The importance of developing banking work in light of digitization has emerged through the association of modern trends in the development of financial systems with enhancing digitization processes. These changes contribute to the increased spread of new fiscal technologies, which reduces risks and increases the efficiency of financial institutions, thus enhancing their profits. The banking area is influenced by digital innovations, enhancing its competitive position and providing security for the institution and customers. Digitization contributes to transit banks' services to a high financial and technological development level. It improves access to services and products, which supports the development of the banking system towards digital services. (Vaganova et al, 2019).

### **The reality of DT and the BSC in Iraq from (2003-2023)**

#### **The reality of DT in Iraq:**

IT is an essential form because of its practical and technological development (Shandi, 2016). This section focuses on monitoring the reality of DT in Iraq from (2003-2023) by monitoring the indicators of the digital economy in Iraq and the challenges facing DT (2003-2023).

### Digital Economy Index in Iraq:

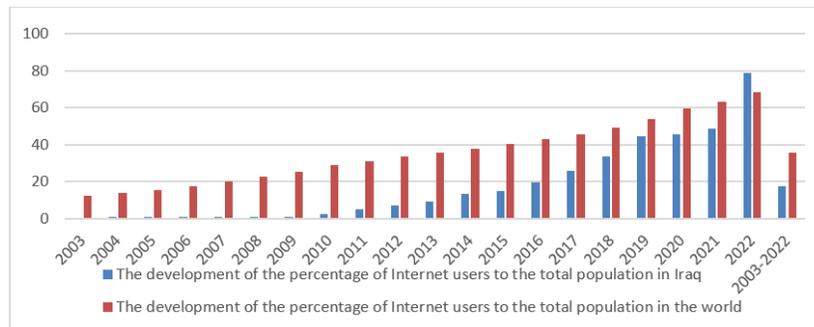
There are many indicators to monitor the reality of DT in Iraq from (2003-2023), including the following:

#### The development of IT indicators in Iraq:

There is a set of indicators that can be used to analyze the development of ICT to know the extent of technological development in the Iraqi economy, and these indicators are as follows:

##### a) The development of internet users in Iraq as a percentage of the population:

The high number of internet users in Iraq indicates a high level of ICT in economic institutions, including monetary and financial institutions, as the availability of internet use allows financial transactions to be carried out with the utmost speed, efficiency, and accuracy, especially electronic payment tools (cards, mobile phones, internet); and the spread of points of sale and ATMs. The following Figure shows the development of internet user rates at the global and local levels (Iraq) from (2003 to 2022).

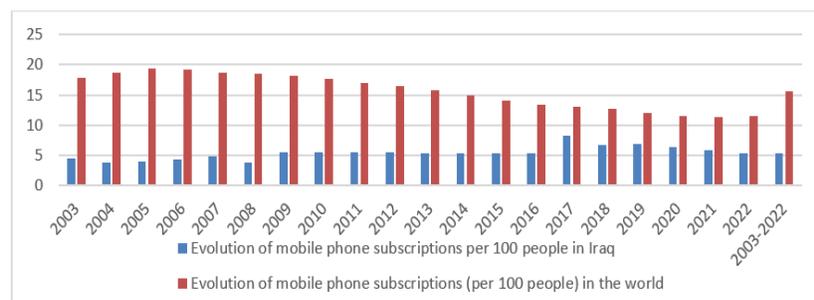


**Figure (1) The development trend of internet user rates in Iraq and the world (2004-2022).**

Looking at the previous Figure, it is clear that internet users percentage in Iraq increased from (2003 to 2010). This increase continued significantly from (2011 to 2022). It is also noted that there is a general trend for the development of internet users percentage to the total population, increasing at the level of Iraq and the global level. However, the average percentage of internet users at the level of Iraq, which is (17.81)%, is less than the average percentage of internet users at the global level, which is (36.10)% from (2003 to 2022).

##### b) Development of fixed-line and mobile cellular subscriptions in Iraq:

Both fixed-line and mobile subscriptions represent one of the most important indicators for measuring progress made by ICT in any country. The following Table shows the development of fixed-line and MPS in Iraq and the world for the period (2003-2022), as shown below:

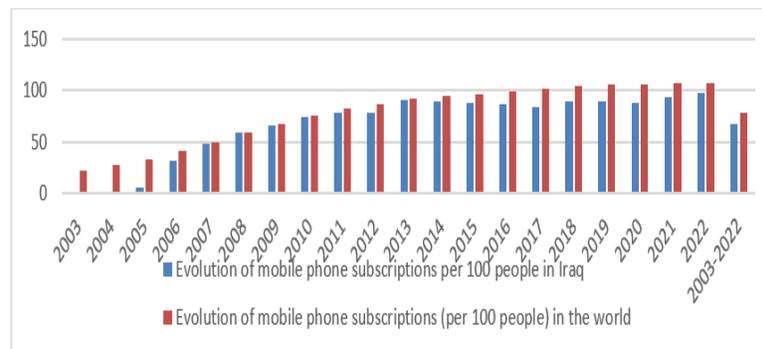


**Figure (2) The development trend of fixed-line subscription rates (per 100 people) in Iraq and the world from (2003-2022)**

It is noted from Figure (2) that both fixed-line and MPS have developed significantly in Iraq and globally from (2003-2022). It is noted that there is a general trend for the development of fixed-line subscriptions with an increase in Iraq and a decrease in the world, as the values of fixed-line subscriptions per 100 people in Iraq were less than their view on the world level.

### c) MPS per 100 people:

MPS means subscriptions to the public mobile phone service that provides access to the public switched telephone network using cellular technology. The following Table shows the development of MPS rates (per 100 people) in Iraq and the world from (2003-2022), as follows:



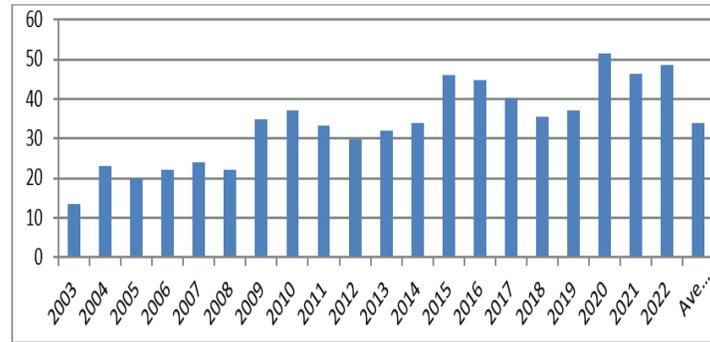
**Figure (3) The trend of development of MPS rates (per 100 people) in Iraq and the world from (2003-2022)**

From the previous Figure, we find that from (2003-2010), it increased from (1) subscriber per (100 people) in 2003 to 74.41 subscribers in 2010, i.e., an increased rate of (7341.07) %. Comparing this rate during the same period, we find that MPS worldwide increased from 22.20 subscribers in 2003 to 75.85 subscribers in 2010. i.e., an increase rate of (241.61)% worldwide. This increase continued from (2011 to 2022). Therefore, a general trend is observed in the development of MPS rates in Iraq and the world, increasing, and this indicates a consensus in the development of ICT in Iraq from (2003-2022) and in the world as well. However, the development trend was in favor of the Iraqi economy.

**The reality of the banking sector in Iraq:** The performance of the banking system is one of the most important indicators indicating the evaluation of the path of reforms, and the financial and monetary system is one of the most important pillars of the economy, which is the first and most accurate indicator of the economic situation of any country (Al-Akhdar, 2015). The performance of the banking sector is closely related to the BSC, and this section focuses on monitoring the reality of the BSC in Iraq from (2003-2023), by addressing indicators of banking development and the challenges of advancing the Iraqi banking sector, as follows:

**Indicators for measuring the development of the banking system in Iraq:** The indicators used to measure the degree of banking development vary from one researcher to another. However, (6) indicators are used in the literature to measure the development of the banking system. These indicators can be presented as follows:

**The ratio of broad money supply (BMS) (M2) to gross domestic product (GDP):** This indicator reflects the degree of cash in the economy and is widely used in many studies to measure banking development. The following Figure shows the development of this ratio in Iraq from (2003-2022), as follows:

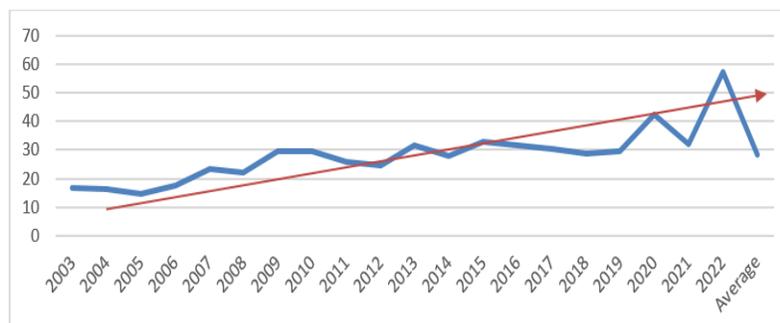


**Figure (4) Development of (GDP/M2) ratio in Iraq from (2003-2022)**

It is noted from the previous Figure that there is a fluctuation in the (GDP/M2) ratio in Iraq during the conducted of the study. In this regard, it can be said that the ratio of M2 to GDP is positively related to the BSC and leads to enhancing financial stability and economic growth, as the high ratio of M2 to GDP means an abundance of liquidity in the economy and the ability of banks to expand lending, which enhances the competitiveness of banks by increasing the financing base of banks through deposits, the ability to expand the portfolio of assets and loans, diversifying banking products and services provided, improving profitability and operational efficiency, financial stability and economic growth. Moreover, the high ratio of M2 to GDP reflects the abundance of liquidity in the economy and the ability of banks to support economic growth, which enhances the stability of the banking sector and its ability to confront shocks and financial risks.

#### **The ratio of total deposits to GDP:**

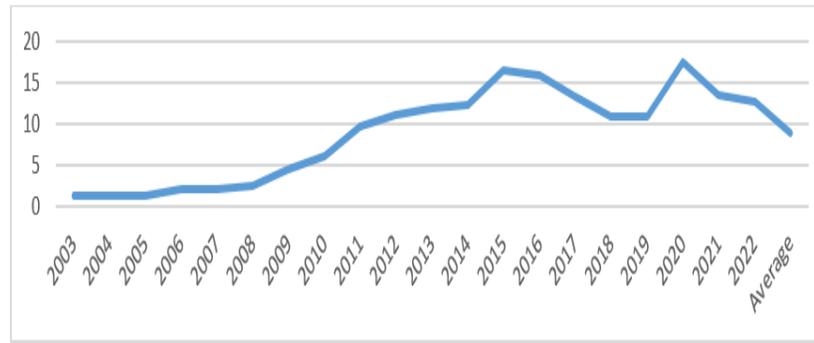
This indicator provides a better reality to describe the development of the banking system, especially in developing countries, meaning that the second indicator measures the ability of banks to mobilize deposits in their various forms, such as current deposits, savings deposits, and fixed deposits, and also measures the overall ability of banks to attract savings. The following Figure shows the development of the ratio of total deposits to GDP in Iraq from (2003-2022), as follows:



**Figure (5) Development of the ratio of total deposits to GDP in Iraq from (2003/2022)**

It is noted from the previous Figure that the banking system has developed significantly due to the increase in total bank deposits to the GDP from (2003 to 2022). However, this development could have given a true picture of the development of the banking system due to the rise in exchange rates during the conduct of the study (Khalaf, 2011).

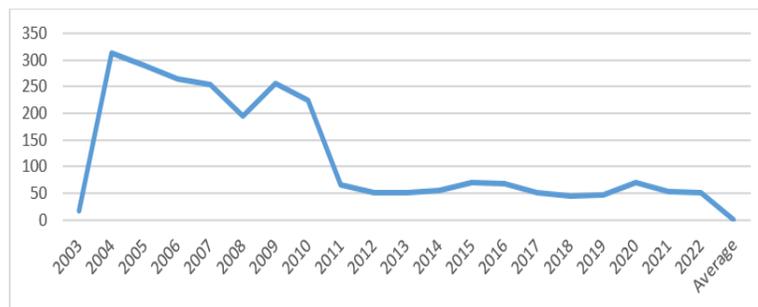
**Credit ratio of the private sector (CRPS) to GDP:** As for financial mediation in the economy, CRPS to GDP has been allocated to measure the financial facilities and services provided by banks, such as loans, as evidence of the development of financial mediation and also to know the extent of the banking sector's participation in developing its system in an integrated manner. Figure (6) shows the growth of bank credit in the private sector to GDP in Iraq from (2003 to 2022), as follows:



**Figure (6) CRPS development to GDP in Iraq from (2003-2022)**

It is noted from the previous Figure (6) the successive increase in bank credit directed to the private sector during the conducted of the study, with an increase in the ratio of total bank credit to GDP during the same period, as the maximum value of this ratio reached about (17.54)% in 2020. One of the reasons for reaching this ratio is the decline in GDP this year due to the decline in oil prices. At the same time, the minimum value of this ratio reached about (1.29)% in 2005, while the average ratio of total bank credit to GDP from (2003-2022) reached about (8.8)%. This continuous increase during the study indicates a positive impression of the development of the banking system and efficiency in the expansion of financial services as a reflection of the development of financial mediation in the economy (Juma, 2018). In general, increasing the ratio of credit to the private sector contributes to developing and enhancing the BSC in Iraq because there is a close relationship between the ratio of credit to the private sector and the BSC in Iraq.

**Banking Depth Index:** The banking depth index is considered one of the important indicators in the banking system in general. It shows the extent of the banking system's ability in the economic environment by calculating the banks' assets of the banking system to the gross domestic product. The increase in the banking depth index means increasing the provision of funds available to individuals and institutions. The banking depth within the economy depends on the size of the banking system's assets, and the following Figure shows the development of banking depth in Iraq from (2003 to 2023).



**Figure (7) Development of the banking depth index in Iraq from (2003-2022)**

The previous Figure shows a downward trend in the banking depth index (the level of development of banking mediation through easy access to banking services and their low cost - and through the previous Figure, it is noted that there is a noticeable fluctuation in the percentage of the financial depth index in Iraq during the conducted of the study, as the maximum value of the financial depth index reached (313.32)% in 2004, with an annual growth rate of (1634.04)%, and the minimum value of this index reached (18.7)% in 2003, with an annual growth rate of (120.02), while the average banking depth index during the conducted of the study reached about (124.80)%. The increase in the values of this index indicates an increase in the ability of the banking system to

provide available funds to individuals and institutions. It is worth noting that strengthening the financial depth in Iraq through developing the banking sector and the financial infrastructure will contribute significantly to improving the BSC.

The Iraqi banking system witnessed extensive developments after 2003, the most important of which was the Central Bank and Commercial Banks Law issuance in 2004. Given the importance of IT in banking, banks in many countries - including Iraq - began to shift from manual work to electronic work that relies more on IT tools, improving their banking performance and competitiveness. Therefore, the current item focuses on analyzing the role of ICT in enhancing the BSC in Iraq during the conducted of the study, as follows:

#### **Analysis of the relationship between ICT indicators and the BSC measured by the ratio of BMS (M2) to GDP**

There is a close relationship between ICT indicators and the BSC, which is a reciprocal and positive relationship, and the ratio of BMS to GDP reflects the extent of development of the banking sector and its competitiveness. To show the relationship between the indicators of ICT ( internet users percentage to the total population (x1), fixed-line telephone subscriptions per 100 people (x2), MPS per 100 people (x3), and the BSC measured by the ratio of BMS (M2) to GDP, symbolized by the symbol (y1), the correlation matrix between them is used during the conducted of the study, as shown in the following Table:

**Table (1) Correlation coefficient between ICT indicators and the BSC measured by the ratio of BMS to GDP in Iraq from (2003-2023).**

<b>Banking sector competitiveness index (y1)</b>	<b>ICT indicators (x1, x2, x3).</b>	<b>Correlation coefficient</b>	<b>P-value</b>
Y1	X1	0.897	0.000
Y1	X2	0.666	0.001
Y1	X3	0.773	0.000

The previous Table shows that the competitiveness index of the banking sector, measured by the ratio of BMS to GDP (y1), is directly related to the indicators of ICT, which are (the ratio of internet users to the total population (x1), fixed-line telephone subscriptions per 100 people (x2), MPS 100 people (x3), in a direct relationship. These relationships were all significant, as the probability value of all relationships (x1, y1), (x2, y1), (x3, y1) was less than 5%. The existence of a statistically significant relationship between these variables in Iraq during the conduct of the study indicates the great importance of ICT in enhancing the BSC by increasing the ratio of BMS to GDP from (2003 to 2023).

#### **Analysis of the relationship between ICT indicators and the BSC measured by the ratio of total deposits to GDP**

Total deposits positively affect the BSC and enhance its financial stability. In this regard, studies indicate that investment in ICT improves the performance of banks and increases the percentage of deposits (Rashid, 2017), (Bin Othman & Shatiba, 2021). To show the relationship between ICT indicators and the BSC measured by the ratio of total deposits to the gross domestic product, symbolized by the symbol (y2), the correlation matrix between them is used during the conducted of the study, as shown in the following Table:

**Table (2) Correlation coefficient between ICT indicators and the BSC measured by the ratio of total deposits to GDP in Iraq from (2003-2023)**

Banking sector competitiveness index (y2)	ICT indicators (x1, x2, x3).	Correlation coefficient	P-value
Y2	X1	0.875	0.000
Y2	X2	0.595	0.005
Y2	X3	0.840	0.000

The previous Table shows that the competitiveness index of the banking sector, measured by the ratio of total deposits to GDP (y2), is related to the indicators of ICT, which are (the ratio of internet users to the total population (x1), fixed-line telephone subscriptions per 100 people (x2), MPS per 100 people (x3), in a direct relationship. These relationships were all significant, as the probability value of all relationships (x1, y2), (x2, y2), and (x3, y2) was less than 5%. A statistically significant relationship between these variables in Iraq during during the conduct of the study indicates the importance of ICT in enhancing the BSC by increasing the ratio of total deposits to GDP (203-2023).

#### **Analysis of the relationship between ICT indicators and the BSC measured by the ratio of credit to the private sector to GDP**

Increasing the ratio of credit directed to the private sector as a percentage of GDP is an essential factor in enhancing the BSC in Iraq (Al-Mahdi, 2023). To show the relationship between ICT indicators and the BSC measured by the ratio of credit to the private sector to the gross domestic product, symbolized by the symbol (y3), the correlation matrix between them is used during the conducted of the study, as shown in the following Table:

**Table (3) Correlation coefficient between ICT indicators and the BSC measured by the ratio of credit to the private sector to GDP in Iraq from (2003-2023).**

Banking sector competitiveness index (y3)	ICT indicators (x1, x2, x3).	Correlation coefficient	P-value
Y3	X1	0.855	0.000
Y3	X2	0.571	0.007
Y3	X3	0.796	0.000

Source: Conducted by the researcher, using Eviews 10.

The previous Table shows that the competitiveness index of the banking sector, measured by the ratio of credit to the private sector to GDP (y3), is linked to the indicators of ICT, which are (the ratio of internet users to the total population (x1), fixed-line telephone subscriptions per 100 people (x2), MPS per 100 people (x3), in a direct relationship. These relationships were all significant, as the probability value of all relationships (x1, y3), (x2, y3), and (x3, y3) was less than 5%. A statistically significant relationship between these variables in Iraq during the conduct of the study indicates the importance of ICT in enhancing the BSC by increasing the credit ratio to the private sector to GDP (203-2023).

#### **Analysis of the relationship between ICT indicators and the BSC measured by the banking depth index.**

ICT plays a pivotal role in enhancing banking depth and enhancing the competitiveness of banks, which is an urgent necessity to keep pace with the developments of the modern digital economy (Al-Tumi, 2017). To show the relationship between ICT indicators and the BSC measured by the banking depth index, symbolized by the symbol (y4), the correlation matrix between them is used during the conducted of the study, as shown in the following Table:

**Table (4) Correlation coefficient between ICT indicators and the BSC measured by the banking depth index in Iraq from (2003-2023).**

Banking competitiveness (y4)	sector index	ICT indicators (x1, x2, x3).	Correlation coefficient	P-value
Y4		X1	-0.519	0.015
Y4		X2	-0.603	0.004
Y4		X3	-0.526	0.001

Source: Conducted by the researcher using the Eviews 10.

It is clear from Table (4) that the competitiveness index of the banking sector measured by the banking depth index (y4) is related to the ICT indicators, which are (internet users percentage to the total population (x1), fixed telephone subscriptions (FTS) per 100 people (x2), MBS per 100 people (x3), in an inverse relationship. All of these relationships were significant, as the probability value for all relationships (x1, y4), (x2, y4), and (x3, y4) was less than 5%. Despite the significance of these relationships, which confirm the importance of the relationship between ICT and the BSC, they were inverse and average from (2003 to 2023).

### CONCLUSION:

The study focused on analyzing the relationship between the impacts of DT and the BSC in Iraq. This was done using the inductive approach (analytical tool, quantitative method (correlation matrix). The study reached a set of results, which can be summarized as follows:

- 1) There is a significant and direct correlation between the indicators of ICT, which are (internet users percentage to the total population, FTS per 100 people, MPS per 100 people, and the competitiveness index of the banking sector measured by the ratio of money supply in the broad sense to the gross domestic product. This indicates the importance of ICT in enhancing the BSC in Iraq (2003-2023).
- 2) There is a significant and direct correlation between the indicators of ICT, which are ( internet users percentage to the total population, FTS per 100 people, MPS per 100 people, the competitiveness index of the banking sector measured by the ratio of total deposits to the gross domestic product. This indicates the importance of ICT in enhancing the BSC by increasing the ratio of total deposits to GDP (2003-2023).
- 3) ICT indicators have a significant and direct correlation. They are (the internet users ratio to the overall population, FTS per 100 people, MPS per 100 people, and the competitiveness index of the banking sector measured by the ratio of credit to the private sector to the gross domestic product. This indicates the importance of ICT in enhancing the BSC by increasing the credit ratio to the private sector to the GDP (2003-2023).
- 4) There is an inverse correlation between the indicators of ICT (the internet users ratio to the overall population, FTS per 100 people, MPS per 100 people). These relationships were all significant, except the relationship between the ratio of internet users to the total population and the banking depth index from (2003 to 2023). The existence of an inverse relationship indicates the existence of many challenges that limit the developmental role of DT in Iraq.

**The situation requires following a set of strategic proposals to enhance the role of DT in improving the BSC in Iraq, as follows:**

- 1) Developing digital infrastructure and investing in technology: Banks must update their technological systems to provide efficient and fast banking services.

- 2) Improving internet connectivity: Enhancing internet services in remote areas to enhance access to digital banking services.
- 3) Mobile applications: Developing easy-to-use banking applications that allow customers to easily manage their accounts and transfer money.
- 4) Self-services: Creating self-service points such as advanced ATMs.
- 5) Enhancing cybersecurity and implementing strict security measures: Protecting customer data and transactions from cyber threats through advanced technology.
- 6) Awareness and training: Training employees and customers on best cybersecurity practices.
- 7) Personalizing services: Using big data to analyze customer behavior and provide personalized services.
- 8) Customer support through digital channels: Providing multiple support channels like live chat and email.
- 9) Enhancing financial inclusion targeting the unserved: Designing banking solutions that target groups that do not have bank accounts.
- 10) Promoting financial technology: Encouraging technology to facilitate access to financial services. By implementing these proposals, the banking sector in Iraq can enhance its competitiveness and increase its efficiency in providing financial services.

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