Al-Qadisiyah Journal for Administrative and Economic Sciences ISSN$_{Online}$: 2312-9883
QJAE, Volume 27, Issue 4 (2025) ISSN$_{Print}$: 1816-9171
DOI: https:// doi.org/ 10.33916/ qjae.2025 .04275291

The Role of Financial Technology in Increasing Cash Credit: An Analytical Study of a Sample of Banks Listed on the Iraq Stock Exchange

Ali Abdul Hussein Raji
mailto:ali.raji@qu.edu.iq

Waad Abdul Karim Ghawi
fina.banks.stp25.10@qu.edu.iq

University of Al-Qadisiyah

Received: 3/8/2025
Accepted: 24/8/2025
Available online: 15 /12 /2025

Corresponding Author : Waad Abdul Karim Ghawi

Abstract : A research problem arises: Is there a role for financial technology in cash credit, and does it reflect on management, shareholders, and businesspeople? The main hypothesis of the studyis that financial technology plays a role in cash credit and reflects on management, shareholders, businesspeople, and traders. To validate the study hypotheses, financial indicators were used, alongside financial analyses and statistical programs (SPSS) and (Excel), to study the role of financial technology in cash credit. The study population represents, consists of commercial banks listed. Two main methodologies were adopted: the inductive approach to review the theoretical aspect through the Evaluation of literature and previous studies related to financial technology and credit, and the deductive approach to analyze financial and statistical hypotheses, The purpose of the research is how modern financial technologies affect the processes of granting and managing cash credit in banks and the banking sector, The most important conclusions supporting the study hypotheses were reached. Aftermaths of the financial Evaluation Revealed a strong The link between e-card value and credit, given the rise in e-card usage cards brings about a heightened expansion in credit, reduces reliance on cash, and enhances the efficiency of the banking system. The main recommendations suggest that banks should incorporate modern technologies into their credit policies by using intelligent data Evaluation systems to evaluate creditworthiness and reduce risks.

Keywords: Banking technology ,Financial technology, Cash Credit, Direct Cash Credit, Credit Granted ..

INTRODUCTION: In recent years, there has been significant development in the field of technology and the increasing reliance on digital systems across various economic sectors, leading to the emergence of financial technology as a key tool for enhancing financial processes and developing credit services. Economic institutions and banks are resorting to adopting financial technology solutions to boost the efficiency of cash credit. The study aims to clarify the role of financial technology in the banking sector and cash credit in terms of management, stakeholders, businessmen, and traders. This research is of great importance due to the modern variables addressed in the study within the field of financial and banking sciences. Where technology has distinguished itself with a central role in the bright banks that contribute to accelerating the provision of their diverse services within advanced and impressive technology, the study focuses on the role of technology in collecting diverse information to support cash credit operations, which positively affects markets, financial institutions, financial services, monetary policies, and financial regulation. Cash credit is defined as the processes by which the bank agrees to grant a specific customer, based on their request, an amount of money, whether in cash or in another form, in exchange for a specified interest, whether in the present or in the future. The studysample consisted of the banks listed, and the time frame ranged from (2015 to 2022). The studywill rely on the indicators of financial Evaluation for electronic cards, the technological assets of the independent variable represented by financial technology, and the money employment indicator for the dependent variable, cash credit. In addition to statistical programs, the study will include a review of the most important literature, theoretical foundations, and knowledge bases of financial technology and cash credit, along with some previous studies.

Section One: Scientific Research Methodology

1. Study Problem: The problem of the study lies in clarifying the role of financial technology in developing the banking sector and providing advanced banking services. This has reflected on banking operations in general, specifically credit, which has led to an integrative "Credit" refers to the ability to borrow financial technology that

aims to improve access to credit. Here, the main problem of the study crystallizes in the main question: "Is there a role for financial technology in credit, and does it reflect on management, shareholders, businessmen, and traders?" Through the main question, sub-questions can be formulated:

a. Does financial technology have a role in credit management in terms of administration, shareholders, businessmen, and traders?

b. Does the presence of technology contribute to increasing credit through programs and intangible assets?

c. Does the role of investment help the bank in granting more credit?

d. Is there a correlation between financial technology and credit?

2. The Importance of the Study:

- Understanding banking technology and the developments that have occurred in it, and understanding the role it plays in developing the banking sector and improving the performance of its institutions through multiple innovations that contribute to completing transactions and services with minimal effort, thereby enhancing credit.
- Statement on the importance of credit for the banking sector by focusing on its indicators, which enhances the amount of available financing, expands the scope of banking operations, and contributes to supporting economic development.
- Financial technology falls within the modern approaches to managing financial and banking affairs, and therefore the study aims to highlight the importance of this transformation and its role in developing operations and services within banking institutions that adopt this technology.

3. Study Objective:

a. A statement of the role of financial technology in the banking sector and monetary credit in terms of management, stakeholders, businessmen, and traders.

b. Clarification of the role of electronic cards for traders and businessmen in facilitating banking operations.

c. A study of indicators of the use of financial technology in the banking sector to measure the level of monetary credit during the study period.

d. An overview of the difficulties facing the development of banking financial technology in Iraq.

4. Study Hypothesis:

a. Fintech plays a role in credit management concerning management, shareholders, entrepreneurs, and traders.

b. Technological assets play a role in increasing credit through programs and intangible assets.

c. Effectively employing funds within the bank has a positive impact on increasing the bank's ability to grant more credit.

5. Study Sample: The study community is represented by the Iraqi banking sector and the study sample comprises the commercial banks listed, which number (42). The study sample consists of the banks listed, totaling (6) banks. represented by (Baghdad Bank, Gulf Commercial Bank, Ashur International Bank, International Development Investment Bank, Iraqi Al-Ahli Bank, Al-Mansour Bank) .

The second section is previous studies:

- The role of the Central Bank of Iraq in promoting digital transformation and the use of financial technology in Iraq for the period (2017-2023) The study aims to demonstrate that this is due to the Central Bank of Iraq's contribution to digital transformation and financial technology. Analyze the impact of digital transformation indicators, financial technology indicators, and financial technology indicators for the banking sector and non-banking financial institutions. Identify the challenges facing the Iraqi banking sector in using financial technology towards digital transformation, The study method relies on the analytical method, Study community: The role of the Central Bank of Iraq in supervising and controlling the banking sector, Conclusions: The Central Bank of Iraq has played a significant role in achieving digital transformation and the use and application of financial technology tools in Iraqi banking, particularly after 2014. The use of financial technology tools, particularly among retired social welfare employees, lacks electronic awareness, which means greater publicity and advertising for electronic financial products is needed, Recommendations: Cooperation between banks and non-banking financial institutions, both governmental and private, should be with the Central Bank of Iraq in implementing digital transformation and the use of financial technologies, specifically electronic collections. When providing data and information to banks in central Iraq, non-banking financial institutions and their specialized banking sectors need to disclose and increase transparency.
- The impact of banking liquidity indicators on monetary credit, The study aims to identify the volume of credit granted to customers and to include a larger number of beneficiaries based on bank liquidity indicators, and the extent of the impact of credit on employment, investment and economic prosperity, The study method relies on the descriptive method Study community: Commercial banks listed on the Iraq Stock Exchange., Conclusions: The relationship between credit, money investment, and cash credit is a direct relationship for commercial banks. That is, the higher the cash credit, the higher the money investment index, and the lower it is. The banking system needs a

strict regulatory system to address the gaps that hinder the flow of banking operations, Recommendations: Banks should study the cash credit process from all aspects and reduce interest rates to include a greater number of beneficiaries and their ability to meet their obligations. They should also provide loans to craftsmen and small businesses to promote economic growth.

Section Two: The Theoretical Foundations of Financial Technology

1. The concept of financial technology: FinTech is defined as a technological innovation that improves the performance of the banking sector by developing new business models, applications, and products, which positively affects markets, financial institutions, financial services, monetary policies, and financial regulations (Ahmed, 2023: 883). It is also defined as a group of products and services that rely on technology to enhance traditional services. This technology is characterized by being more costly, efficient, and easy to access, making it available to a larger number of customers. These services and products are often developed by modern companies (Abdel Rahim and Ben Qaddour, 2018: 13). The researcher sees it as a set of tools, software, and techniques that humans use to develop financial processes and make them easier than before through applications, electronic devices, and mobile phones, making them easier and faster while ensuring transparency and reducing risks. The Digital Research Institute in Dublin defines it as: modern technological innovations in the financial sector, which include a range of digital programs used in banks' financial operations, such as transactions with customers and financial services like money transfers, currency exchange, calculating interest rates and profits, and estimating potential returns on investments and other banking operations (Rabie Jabo, and Rouina 2019, page 209).

2. Objectives of Financial Technology: Financial technology seeks to achieve a set of goals aimed at improving and developing financial services, and among the most prominent of these goals are: (Ben Alqama and Sayhi, 2018: 93)

a. Financial technology aims to reduce current costs, allowing more users to access financial services, including individuals and businesses that do not have access to traditional banking services.

b. Financial technology focuses on meeting the personal needs of customers, as each bank or company has different requirements, and these services are provided through various means specifically prepared for that purpose.

c. Financial technology services and products rely on modern technologies, enabling the execution of procedures and operations more quickly compared to traditional methods.

d. Financial technology products and services are characterized by their cross-border usability, as they can serve customers in different geographic locations without the need for them to be in the same area.

3. Characteristics of financial technology: Banks need financial technology to keep up with developments and avoid the risk of isolation and falling behind in the information age. Due to the employment of modern technology today, it has become possible to collect vast amounts of data from multiple sources, in addition to storing the necessary historical data that forms the foundation of banking operations. The most important characteristics of banking technology companies can be determined as mentioned by (Ahmad, 2023: 887-888).

a. Fintech companies offer multiple payment options and plans for their services, giving them a flexible character that suits the diverse needs of customers.

b. The data policy is based on enhancing the quality of services provided, as it offers business owners in-depth data analytics, enabling them to make quick decisions and effectively invest in opportunities.

c. Traditional financial services are limited to a certain segment of customers who have significant assets or high income, while fintech companies strive to provide access to all users, focusing on designing their services to meet the needs of all categories.

d. Fintech companies focus on meeting customer requirements by providing easy and simple services that meet their needs.

4. Disadvantages of financial technology: Despite the many benefits that financial technology offers, there are some drawbacks that should be considered, which are as follows: (Hamdoosh, Omani, Ben Ali, 2021: 543)

a. Fintech companies are more susceptible to cyberattacks and other security risks compared to traditional financial institutions, as they often rely on technology to deliver their services, and if their systems are compromised, it could lead to a breach of sensitive information.

b. Fintech companies often depend on technology to provide their services, which means that human interaction is often minimal or absent, and this might be a drawback for some individuals who prefer dealing with a person when it comes to financial matters.

c. Fintech companies may not offer the same range of financial products and services that traditional financial institutions provide; for example, they may not offer loans or mortgages, which means that customers may have to use multiple service providers to meet all their financial needs.

d. Fintech companies may be more vulnerable to fraud than traditional financial institutions, as they often rely on technology to provide their services. If their systems are hacked, it could lead to fraudulent activity, especially for the elderly and users who lack proficiency in English.

5. Fintech Indicators: Fintech indicators include a variety of tools and metrics that help measure and evaluate technology in the banking sector. Here are some key indicators.

a. Electronic cards (C. Card): The value of electronic credit cards was used because this type of card, if based on the number of cards, does not provide an accurate indicator. Therefore, the researcher resorted to the value of electronic cards, which is approximately (10,000) ten thousand dinars for each card, representing the cost of issuing them. To obtain Aftermath, this cost was multiplied by the number of cards issued by each bank. It is worth noting that the bank is not obliged to disclose the value of these cards, as they are reported as a value in its financial statements. These cards are not issued by the bank but by the Iraqi Company for Deposit Guarantees, and they are obtained from this company. Nevertheless, they will be used as an indicator to measure the balance of the credit card relative to the balance of cash loans recorded in the bank's records, and the indicator is as follows.

$$\textbf{Credit card balance} = \frac{\textbf{The value of the electronic credit card}}{\textit{Total cash credit}}$$

(Malik et al.2019) .

b. The value of technological assets: The bank has benefited from its technological assets, including what is known as 'intangible assets', which encompass the bank's proprietary systems and software. These assets appear in the financial statements of the concerned bank, while some banks refer to them in the management report. The value of technological assets has been used as an indicator to measure these assets, relative to the total fixed assets listed in the financial statements, and the indicator is shown as follows:

$$\textbf{The value of technological assets} = \frac{\textbf{The value of the bank's technological assets}}{\textit{Total assets of the bank}}$$

(Akeel and others, 2023: 103)

6. The theoretical foundations of credit: Bank credit is a key and effective financing tool that helps in transferring funds from depositors to borrowers, thereby enhancing economic activity. The term credit refers to the lending operations carried out by banks for customers, and it is a set of procedures that allows individuals and entities to obtain products that they did not produce themselves, but rather through other parties (El-Masri, 2014: 104-105). The process of bank credit is considered an exchange of current financial value for a promise of an equal value in the future, and this value is often money with interest paid by the borrower to the bank (Zainab Awad Allah, 1995, : 77).

7. Definition of cash credit: Cash credit is the process of providing funds to institutions, individuals, and enterprises in society, where the debtor commits to repaying the money and its interest either in one lump sum or in installments on specific dates. This process is supported by a set of guarantees that ensure the bank recovers its money in the event the customer stops repayment, thereby protecting the bank from any losses (Abdelbaqi, 2015, p. 246). Credit is one of the essential activities in the development of productive forces, as it determines the course of capital. Without funds or cash resources, it becomes difficult to obtain the necessary production inputs (Abdul Rahman Ibrahim, 2020, p. 100). The researcher sees that a request submitted by the borrower to obtain a loan based on the type of loan needed, such as personal loans, car loans, mortgage loans, business loans, secured loans, and student loans, may require the presence of a guarantor if the borrower is not employed. Meanwhile, if the borrower is employed, they can guarantee themselves for repaying the loan and the associated interest, in order to ensure commitment to repayment and avoid defaulting on the due installments.

8. The importance of monetary trust: The credit system is considered one of the effective financial channels in enhancing and supporting the national economy, as it is an important source for meeting the financing needs of various economic sectors. The importance of bank credit can be summarized through the following functions (Kazem, 2013: 292):

a. Developing Economic Activity: Monetary credit contributes to job creation and increases individuals' purchasing power, which improves living standards. It is essential to determine the amount of credit provided by commercial banks to economic sectors, as a decrease could lead to an economic recession, while an increase could cause inflationary pressures, (Zaeeda, 2006: 34).

b. Increase in money supply: Credit boosts the size of the money supply by granting loans, which contributes to regulating the money supply, and credit facilities are considered a primary source of bank revenues (Aquanno & Brennan, 2018, pp. 814-833).

c. Development of the National Economy: Credit is considered a key element in the development of the national economy, but it can also contribute to the inflation gap. The bank's management seeks to maximize profits by granting credit facilities to reliable customers (Abu Karsh, 2015).

d. Settlement of exchanges: Cash credit instruments, promissory notes, and bonds are considered effective means to facilitate exchange operations, as these instruments represent a debt owed by the issuing party, which facilitates the settlement of financial transactions between different parties and enhances trust in commercial transactions (Dawri, 2012: 16).

9. Advantages of cash credit: Cash credit is one of the most prominent sources of financing that institutions resort to, especially small and new ones, due to the lack of confidence in their credit position with other financial institutions. Cash credit has several important advantages: (Al-Badawi, 2019: 113):

a. Independence of management: Cash credit does not intervene in the boards of directors of borrowing institutions, which helps to maintain the independence of management and its decisions.

b. Cash credit is characterized as one of the best banking investments, due to the high returns it achieves on the invested capital.

c. Increasing capital productivity: Cash credit is an effective means of reallocating the use of funds between individuals and institutions, contributing to better utilization of cash savings.

d. Payment organization: Cash credit operations are organized according to specific timelines for loan repayments, providing borrowers with flexibility in making payments, which helps maintain their activities and prevents liquidity disruptions.

10. Money employment indicator: This index is limited to investing money and operating in cash credit only, separating it from other types of investments. This index is measured in comparison to total fixed assets, helping the bank assess the efficiency of the banking sector in using fixed assets to grant cash credit, and it is calculated using the following mathematical formula.

$$\textbf{Investment Employment Indicator} = \frac{\textbf{Total cash credit}}{\textit{Total fixed assets}}$$

(Al-Jazrawi and Al-Naimi, 2010: 16-18)

Section Three: The Applied Aspect of Research

1. Financial Evaluation of the electronic card index: Electronic cards are considered one of the modern tools in the banking sector, as they are used by management to facilitate withdrawal and payment operations for merchants and businessmen, reducing time. They have also contributed to making banking performance more flexible and highly effective, reflecting the nature of the ongoing development. One of the proofs of this development is allowing bank customers to withdraw and deposit money using the internet and electronic payment methods, whether in the bank's infrastructure, or at the level of marketing activities, It provides flexibility in spending and facilitates expense management, while improving credit ratings. However, it should be used with caution to avoid the accumulation of debts and interests.

Table (1) shows the balance of electronic cards for Baghdad Bank.

$\textbf{Credit card balance} = \frac{\textbf{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2015	875,890,000	—	—	262,000,000,000	—	—	0.33
2016	929,640,000	6.13	6.13	195,000,000,000	-25.57	-25.57	0.47
2017	999,470,000	14.1	7.5	169,500,000,000	-35.31	-13.08	0.58
2018	1,102,860,000	25.9	10.3	161,900,000,000	-38.21	-4.48	0.68
2019	1,230,620,000	40.4	11.5	149,600,000,000	-42.90	-7.60	0.82
2020	1,447,480,000	65.2	17.6	141,600,000,000	-45.95	-5.35	1.02
2021	1,591,090,000	81.6	9.9	121,636,000,000	-53.57	-14.10	1.3
2022	1,759,800,000	100.9	10.6	89,496,000,000	-65.84	-0.26	1.96

Source: Prepared by the researcher based on the annual reports issued by Baghdad Bank.

The highest balance of electronic cards was reached in the year (2022), with a percentage of (1.96), which means that the value of the credit card significantly exceeds the cash credit amount, indicating a significant increase in usage. Meanwhile, the lowest rate occurred in the year (2015) at a percentage of (0.33), which indicates the beginning of limited use of electronic cards compared to cash credit. Electronic cards show an increase during the growth period, from the year (2016) at a percentage of (6.13), while it rose to (100.9) in the year (2022), This reflects a new direction in the bank's policy towards encouraging the full use of electronic cards, eliminating payment via official cash credit, and helping customers make greater use of technology. The affiliation between the value of electronic cards and cash credit is a strong and high-impact one, as the increased use of electronic cards and cash credit transactions grows.

Table (2) Electronic card balance of Gulf Commercial Bank for the period (2015 - 2022)

Credit card balance = $\frac{\text{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2015	34,650,000	—	—	317,421,552,493	—	—	0.1
2016	84,090,000	143	143	318,487,736,124	0.33	0.33	0.02
2017	142,240,000	311	69	204,274,936,809	-35.6	-35.8	0.06
2018	209,900,000	506	48	171,492,000,000	-45.9	-16	0.1
2019	273,150,000	688	30	144,623,000,000	-54.4	-15.6	0.1
2020	309,130,000	792	13	127,003,000,000	-59.9	-12.1	0.2
2021	338,270,000	876	9	112,007,000,000	-64.7	-11.8	0.3
2022	463,680,000	1,238	37	91,886,000,000	-71	-17.9	0.4

Source: Prepared by the researcher based on the annual reports issued by the Gulf Commercial Bank.

The data recorded by Gulf Commercial Bank shows the highest value of electronic cards, totaling (463,680,000) in 2022. In contrast, there was the lowest value for electronic cards in (2015), as it was the beginning of issuing cards by Gulf Commercial Bank that year. We notice the increase in cash credit volume in (2016), As a result of the increase in the value of electronic cards compared to the previous year, the affiliation between them is direct due to the increase in electronic cards, which has led to an increase in the cash credit granted. After that, the value of electronic cards rose while the cash credit decreased over the years (2017, 2018, 2019, 2020, 2021, 2022). Due to the bank's credit granting policy, the value of cards has increased during these years, indicating a trend towards technological transformation, which has led to the advancements achieved in financial technology in improving the system to recognize the increase in granted cash credit. We observe that the increased use of cards in 2018 coincided with a rise in the value of cash credit.

Table (3) Electronic card balance of Ashur International Bank for the period (2015 - 2022)

Credit card balance = $\frac{\text{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2015	132,690,000	—	—	28,440,001,000	—	—	0.4
2016	206,040,000	55.2	55.2	9,623,272,000	-66.1	-66.1	2.1
2017	285,630,000	115.2	38.6	10,463,000,000	-63.2	8.7	2.7
2018	392,290,000	195.6	37.3	5,624,000,000	-80.2	-46.2	6.9
2019	475,370,000	258.2	21.1	14,990,000,000	-47.2	166.5	3.1
2020	530,540,000	299.8	11.6	25,108,000,000	-11.7	67.4	2.1
2021	598,710,000	351.2	12.8	83,804,000,000	194.6	233.7	0.7
2022	682,550,000	414.3	14	241,682,000,000	749.7	188.3	0.2

Source: Prepared by the researcher based on the annual reports issued by Ashur International Bank.

The highest value of electronic cards in 2022 was (682,550,000) dinars, while the total public cash credit was at the same level of increase at (241,682,000,000) dinars, and the card balance was (0.2). The lowest value of electronic cards was recorded in 2015, where it amounted to (132,690,000) dinars, with a total cash of (28,440,001,000) dinars, The highest card balance was recorded in 2018, reaching (6.9), which is the highest rate during the study period, indicating that the value of electronic cards was significantly compared to cash credit that year. The lowest card balance was recorded in 2022, at (0.2); despite the increase in the value of the electronic card, cash credit remained very high, From a low ratio, the ratio between the value of the electronic card and cash credit has evolved in some years (like 2018) to reliance on the electronic card compared to the level of cash credit, reflecting a trend towards electronic transactions. In other years (like 2022), despite the absolute increase in the value of electronic cards, cash credit is growing at a faster pace, reducing the ratio of card balances, and thereby a general development in cash credit which the bank aims to achieve. The chart illustrates the flourishing value of electronic cards.

Table (4) Electronic card balance of the International Development Bank for the period (2015 – 2022)

Credit card balance = $\frac{\text{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2015	58,530,000	—	—	290,690,000,000	—	—	0.02
2016	351,810,000	501	501	279,132,000,000	-3.9	-3.9	0.12
2017	872,090,000	1389.9	147.8	267,038,000,000	-8.1	-4.3	0.32
2018	2,000,760,000	3318.3	129.4	288,003,000,000	-0.9	7.8	0.69
2019	2,126,880,000	3533.8	6.3	345,327,000,000	18.7	1.9	0.61
2020	2,366,340,000	3942.9	11.2	384,900,658,000	32.4	11.4	0.61

2021	2,400,960,000	4002.1	1.4	602,342,281,000	107.2	56.4	0.39
2022	2,456,280,000	4096.6	2.3	842,834,314,000	189.9	39.9	0.29

Source: Prepared by the researcher based on the annual reports issued by the International Development Bank.

We can see from the table detailed above that the peak value of electronic cards for the year (2018) reached (2,000,760,000) dinars, with a percentage of (0.69). The value of cards for the year (2015) declined to (58,530,000) dinars, with a percentage of (0.02). This is attributed to the increased demand for electronic cards, correlated with the rate of cash credit issuance. This increase in electronic cards was matched by a rise in cash credit issuance, which illustrates the positive affiliation between the two, As for the years (2016, 2017), the demand for electronic cards increased by rates of (0.12, 0.32) respectively, along with a decrease in cash credit. This means that the increase in demand for electronic cards is accompanied by a decrease on the other side, resulting in an inverse proportional affiliation between the two. According to the bank's rules regarding granting cash credit facilities, the increase in electronic cards then coincided with an increase in cash credit for the years (2018, 2019, 2020, 2021, 2022) respectively, indicating a direct affiliation between them, and it was confirmed that electronic cards have an effect on cash credit.

Table (5) Electronic card balances of the Iraqi Al-Ahly l Bank for the period (2015 – 2022)

Credit card balance $= \frac{\text{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2016	12,690,000	—	—	124,682,911,000	—	—	0.01
2017	53,740,000	323.4	323.4	134,356,000,000	7.7	7.7	0.03
2018	179,730,000	1316.3	234.4	76,828,000,000	-38.3	-42.8	0.23
2019	239,040,000	1783.6	32.9	168,964,000,000	35.5	119.9	0.14
2020	380,890,000	2901.4	59.3	317,598,636,000	154.7	87.9	0.11
2021	449,860,000	3444.9	18.1	866,613,924,000	595	172.8	0.05
2022	579,520,000	4466.7	28.8	950,955,823,000	662.6	9.7	0.06

Source: Prepared by the researcher based on the annual reports issued by Iraqi Al-Ahly.

The electronic card index recorded its highest value for electronic cards in 2018, amounting to (197,730,000) dinars, with a rate of (0.23), and decreased to its lowest level in 2016 with a value of (12,690,000) dinars, and a rate of (0.01). This decline is attributed to the increase in demand for electronic cards relative to cash credit grants, Unlike the years (2020, 2021, and 2022), the demand for electronic cards has seen a continuous increase, accompanied by a corresponding rise in cash credit rates of (0.11, 0.05, 0.06) respectively, indicating a positive affiliation between the value of electronic cards and strong cash credit, with a correlation rate of approximately 0.88, suggesting that the increase in the value of electronic cards is generally associated with the cash credit rate.

Table (6) Electronic card balance of Al-Mansour Bank for the period (2015 - 2022)

Credit card balance $= \frac{\text{The value of the electronic credit card}}{\textit{Total cash credit}}$							
Year	Value of electronic cards (1)	Growth rate %	Change rate %	Cash credit (2)	Growth rate %	Change rate %	Change rate Card balance = (1)/(2)
2015	0	—	—	112,747,643,000	—	—	0
2016	0	—	—	114,534,681,000	1.5	1.5	0
2017	20,810,000	—	—	116,742,879,000	3.5	1.9	0.01
2018	23,170,000	11.3	11.3	123,811,750,000	9.8	6	0.01
2019	30,020,000	44.2	29.5	142,577,759,000	26.4	15.1	0.02
2020	43,980,000	111.3	46.5	137,915,781,000	22.3	-3.2	0.03
2021	59,170,000	184.3	34.5	149,940,566,000	32.9	8.7	0.03
2022	7,400,000	-64.4	-87.4	191,825,114,000	70.1	0.2	0.003

Source: Prepared by the researcher based on the annual reports issued by Al-Mansour Bank.

Al-Mansour Bank began to adopt the electronic card in advance since 2017. The highest value of electronic cards was recorded in the years (2020, 2021) where it reached (0.03, 0.03) respectively, while the lowest rate was recorded for the year (2023) at (0.003). The rise in demand for electronic cards is explained by the increase in cash facilities granted to customers. In the first three years (2017-2019), after the bank began issuing electronic cards, cash credit rose due to increased demand for these cards, reflecting a strong direct affiliation betweenthem. However, during the COVID-19 pandemic in 2020, demand for electronic cards increased despite a decrease in cash credit grants.

2. Financial Evaluation of the technology assets index : The technological components of the bank include a set of modern technologies that banks rely on to enhance their efficiency and provide modern financial services. The information technology infrastructure includes cloud computing systems, data systems, communication networks, and software applications, commonly referred to as intangible assets, which enhance electronic banking operations and provide a secure and reliable environment for data storage and processing, assisting in the development of technology resource management.

Table (7) The value of technological assets of Baghdad Bank for the period (2015 – 2022)

$\text{The value of technological assets} = \frac{\text{The value of the bank's technological assets}}{\textit{Total assets of the bank}}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)
2015	9,741,752,000	—	—	1,479,042,593,000	—	—	0.65
2016	9,520,191,000	-2.2	-2.2	1,200,424,117,000	-18.8	-18.8	0.79
2017	9,141,211,000	-6.1	-3.9	1,090,152,647,000	-26.2	-9.1	0.83
2018	1,248,991,000	-87.1	-86.3	1,113,000,000,000	-24.7	2	0.11
2019	565,744,000	-94.1	-54.7	1,132,000,000,000	-23.4	1.7	0.04
2020	284,493,000	-97	-49.7	1,420,000,000,000	-3.9	25.4	0.02
2021	364,886,000	-96.2	28.2	1,540,000,000,000	4.1	8.4	0.02
2022	1,013,274,000	-89.5	1.7	1,540,000,000,000	4.1	0	0.06

Source: Prepared by the researcher based on the annual reports issued by Baghdad Bank.

We observe from the data in the table above that the highest value of technological assets was recorded in the year (2017) and amounted to (0.83), while the lowest percentage was in the years (2020, 2021) where it was approximately (0.02). This increase is attributed to the use of technological assets by Baghdad Bank relative to the total assets, Unlike the years (2020, 2021) when total assets increased and the use of technical assets decreased, this subsidiary of the bank is canceling the recognition of intangible assets, including (Baghdad Securities Limited Company and Al-Ameen Insurance Limited Company), As stated in the annual report of the bank, where the bank liquidated the mentioned companies, we observe the impact through the affiliation betweentechnological assets and total assets for the years (2015, 2016, 2017). There is a high impact as the decrease in technological assets is accompanied by a decrease in total assets, thus validating the hypothesis that there is a role for technological assets in credit.

Table (8) The value of technological assets of Gulf Commercial Bank for the period (2015 - 2022)

$\text{The value of technological assets} = \frac{\text{The value of the bank's technological assets}}{\textit{Total assets of the bank}}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)
2015	6,814,912,000	—	—	810,971,493,240	—	—	0.84
2016	5,086,652,000	-25.3	-25.3	802,022,034,419	-1.1	-1.1	0.63
2017	6,728,260,000	-1.2	32.2	603,312,989,000	-25.6	-24.7	1.11
2018	4,915,890,000	-27.8	-26.9	578,337,000,000	-28.6	-4.1	0.85
2019	5,714,380,000	-16.1	16.2	549,146,000,000	-32.2	-5	1.04
2020	3,236,047,450	-52.5	-43.3	510,798,283,000	-37	-6.9	0.63
2021	2,781,875,000	-59.1	-14	538,490,755,000	-33.5	5.4	0.51
2022	3,388,141,000	-50.2	0.21	553,057,328,000	-31.8	0.027	0.61

Source: Prepared by the researcher relying on the annual reports issued by Gulf Commercial Bank.

The highest value of technological assets was achieved in the year (2017), with the value of technological assets reaching approximately (1.11), while the lowest value was in the year (2021), where the ratio was about (0.51). The reason for the increase in technological assets compared to the total assets is attributed to the bank's reliance on advanced technology programs, unlike in the year (2021), Technological assets have decreased to their lowest levels after the end of the COVID-19 pandemic, with customer attendance at the bank dropping by 50%, which forced management to reduce reliance on technology programs to meet needs. This variation indicates that the alignment between technological assets and total assets still exists and depends on the relativity of both variables, meaning it is not fixed absolutely but changes according to the conditions of the bank and customers.

Table (9) The value of technological assets of Ashur Bank for the period (2015 - 2022)

$\text{The value of technological assets} = \frac{\text{The value of the bank's technological assets}}{\textit{Total assets of the bank}}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)
2015	2,875,570,000	—	—	407,730,097,000	—	—	0.71
2016	2,743,601,000	-4.59	-4.59	374,710,708,000	-8.10	-8.10	0.73
2017	2,311,840,000	-19.60	-15.74	376,315,630,000	-7.70	0.43	0.61
2018	3,090,329,000	7.47	33.67	467,479,690,000	14.65	24.23	0.66
2019	1,896,433,000	-34.05	-38.63	415,992,208,000	2.03	-11.01	0.46
2020	2,774,130,000	-3.53	46.28	473,954,153,000	16.24	13.93	0.59
2021	2,844,010,000	-1.10	2.52	613,525,839,000	50.47	29.45	0.46
2022	3,507,642,000	21.98	0.23	779,419,575,000	91.16	0.27	0.45

Source: Prepared by the researcher based on the annual reports issued by Ashur International Bank.

It is clear from Table (9) that the highest percentage of the value of technological assets for the year 2016 reached (0.73). This increase is due to the concentration on technological assets in relation to total assets. In contrast, the lowest value of technological assets for the year 2022 was (0.45), and this decline indicates an increase in total assets relative to technological assets. We notice that the highest growth rate reached by technological assets for the year 2022 was (21.98). The variation between technological assets and total assets is moderate to strong, as the change in technological assets often coincides with a change in total assets. Through the Evaluation, there is a correlation of (0.69), indicating a strong affiliation between them, and the bank operates with a high percentage of technological assets.

Table (10) The value of technological assets of the International Development Bank for the period (2015 - 2022)

The value of technological assets $= \frac{\text{The value of the bank's technological assets}}{Total\ assets\ of\ the\ bank}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)
2015	4,628,533,000	—	—	792,954,000,000	—	—	0.58
2016	3,928,621,000	-15.12	-15.12	654,596,000,000	-17.45	-17.45	0.60
2017	3,260,054,000	-29.57	-17.02	650,770,424,000	-17.93	-0.58	0.50
2018	3,541,881,000	-23.48	8.64	660,960,008,000	-16.65	1.57	0.53
2019	5,460,386,000	17.97	54.17	768,378,726,000	-3.10	16.25	0.71
2020	7,080,541,000	52.98	29.67	1,069,745,295,000	34.91	39.22	0.66
2021	9,211,058,000	99.01	30.09	1,507,924,651,000	90.17	40.96	0.61
2022	10,879,610,000	135.06	0.18	1,798,952,163,000	126.87	0.19	0.60

Source: Prepared by the researcher based on the annual reports issued by the International Development Bank.

It is clear from the data presented in Table (10) that technological assets recorded the highest value for the year 2019 at a rate of (0.71), while the lowest value for technological assets was recorded at a rate of (0.50) in 2017. This increase is attributed to the rise in technological assets in relation to total assets and the employment of the latest programs and advanced technologies, in contrast to the situation in 2017, The technological assets have seen their lowest levels, yet this decline remains high compared to the years of study. The disparity between technological assets and total assets, in terms of rise and fall, ranges from (0.50 - 0.71) with a relative stability of (0.60) in most years of study. The affiliation between technological assets and total assets shows a very strong correlation of (0.98), as an increase in one leads to an increase in the other and vice versa.

Table (11) Value of technological assets of the National Bank of Iraq for the period (2015 - 2022)

The value of technological assets $= \frac{\text{The value of the bank's technological assets}}{Total\ assets\ of\ the\ bank}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)
2015	3,222,626,000	—	—	578,847,033,000	—	—	0.55
2016	2,494,760,000	-22.5	-22.5	612,955,425,000	5.8	5.8	0.4
2017	3,109,543,000	-3.5	24.6	603,980,329,000	4.3	-1.4	0.51
2018	4,246,193,000	31.7	36.5	525,757,058,000	-9.1	-12.9	0.8
2019	8,460,384,000	162.5	99.2	632,803,000,000	9.3	20.3	1.33
2020	11,800,027,000	266.1	39.4	893,205,652,000	54.3	41.1	1.32
2021	16,477,368,000	411.3	39.6	1,821,341,840,000	214.6	103.9	0.9
2022	24,496,009,000	660.1	0.4	2,416,088,780,000	317.3	0.3	1.01

Source: Prepared by the researcher based on the published annual reports Iraqi Al-Ahly Bank

The highest value for technological assets was in the year (2019) with a rate of (1.33), followed by (2020) with a rate of (1.32), and the lowest value was in the year (2016) with a rate of (0.4), indicating a significant concentration on the use of technological assets compared to the total assets. Conversely, the value of technological assets decreased in the year (2016), Where customer interest in technology is weak, along with a lack of banking awareness, technological assets have achieved significant growth during the period, with a growth rate of about (660.1) in 2022 compared to (2015). The correlation coefficient between technological assets and total assets is (0.95), indicating a very high and strong causal affiliation between them. This means that an increase in technological assets is usually accompanied by an increase in total assets, with opposing changes, as the affiliation between technological assets and total assets is a strong causal relationship.

Table (12) The value of technological assets of Mansour Bank for the period (2015 - 2022)

The value of technological assets $= \frac{\text{The value of the bank's technological assets}}{Total\ assets\ of\ the\ bank}$							
Year	technological assets (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Value of technological assets= (1)/(2)

2015	870,381,000	—	—	1,057,589,237,000	—	—	0.082
2016	138,648,138	-84	-84	1,104,063,814,000	4.3	4.3	0.012
2017	310,077,110	-64.3	123.6	1,316,451,509,000	24.4	19.2	0.023
2018	1,360,054,000	56.2	338.6	1,566,367,957,000	48.1	18.9	0.086
2019	1,289,065,000	48.1	-5.2	1,461,478,909,000	38.1	-6.6	0.088
2020	903,772,000	3.8	-29.8	1,287,419,060,000	21.7	-11.9	0.07
2021	685,854,000	-21.2	-24.1	697,917,429,000	-34	-45.7	0.098
2022	676,150,000	-22.3	-0.01	736,839,536,000	-30.3	0.05	0.091

Source: Prepared by the researcher based on the annual reports issued by Al-Mansour Bank.

We notice from the data in the table above that the highest value reached in the year 2021 was (0.098), which means that technological assets constituted about (9.8) of the total assets. The lowest value was in the year 2016 at (0.012), or (1.2) of the total assets. The reason for the increase in technological assets is attributed to the acceleration in digital transformation, Innovation in banking services, unlike in 2016, faces challenges in providing advanced technical services. The technological assets have undergone sharp changes, as they decreased by 84% in 2016 compared to the previous year, then returned to growth in the following years. The correlation coefficient between technological assets and total assets is 0.47, indicating a medium to weak influence affiliation betweenthem. The affiliation between technological assets and total assets is not very strong, which means that an increase in technological assets does not necessarily result in a parallel increase in total assets.

3. **Financial Evaluation of cash credit index: -** It is the process in which the bank grants the customer a cash amount to be used for a specified period in exchange for an agreed-upon interest, with guarantees to ensure the recovery of this amount. Cash credit is fundamental in financing economic activity, whether for individuals or companies, This indicator is used to assess the ability of banks to provide the necessary cash funding for economic activity, and it is considered one of the most important tools of monetary policy that affects liquidity in the market. This indicator reflects the volume of cash financial facilities that the bank grants to clients compared to the size of its assets, The cash credit index scale can be detailed through the tables below, for each bank individually, listed during the financial period (2015 to 2022).

Table (13) Investment of funds for Baghdad Bank for the period (2015 - 2022)

Investment Employment Indicator $= \frac{\text{Total cash credit}}{Total\ fixed\ assets}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	262,000,000,000	—	—	1,479,042,593,000	—	—	17.71
2016	195,000,000,000	-25.57	-25.57	1,200,424,117,000	-18.8	-18.8	16.24
2017	169,500,000,000	-35.31	-13.08	1,090,152,647,000	-26.2	-9.1	15.54
2018	161,900,000,000	-38.21	-4.48	1,113,000,000,000	-24.7	2	14.54
2019	149,600,000,000	-42.90	-7.60	1,132,000,000,000	-23.4	1.7	13.21
2020	141,600,000,000	-45.95	-5.35	1,420,000,000,000	-3.9	25.4	9.97
2021	121,636,000,000	-53.57	-14.10	1,540,000,000,000	4.1	8.4	7.89
2022	89,496,000,000	-65.84	-0.26	1,540,000,000,000	4.1	0	5.81

Source: Prepared by the researcher based on the annual reports issued by Baghdad Bank.

We can see from the table data shown above that the highest percentage of the cash credit index (investment of funds) was in 2015, where it reached approximately (17.71), while the lowest percentage of cash credit was in 2022, amounting to about (5.81). The reason for this increase is that the bank invests a large proportion of its assets in cash credit, unlike in 2022, The cash credit has decreased to its lowest levels due to the bank's policy of granting cash credit. We observe a negative variance over the years of study (at a rate of 65.84 for the year 2022 compared to 2015). The affiliation betweencash credit and total assets is moderate to strong, as there is a significant percentage in cash credit, particularly concerning the percentage of employees.

Table (14) Investment of funds for Gulf Commercial Bank for the period (2015 - 2022)

Investment Employment Indicator $= \frac{\text{Total cash credit}}{Total\ fixed\ assets}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	262,000,000,000	—	—	1,479,042,593,000	—	—	17.71
2016	195,000,000,000	-25.57	-25.57	1,200,424,117,000	-18.8	-18.8	16.24
2017	169,500,000,000	-35.31	-13.08	1,090,152,647,000	-26.2	-9.1	15.54
2018	161,900,000,000	-38.21	-4.48	1,113,000,000,000	-24.7	2	14.54
2019	149,600,000,000	-42.90	-7.60	1,132,000,000,000	-23.4	1.7	13.21
2020	141,600,000,000	-45.95	-5.35	1,420,000,000,000	-3.9	25.4	9.97
2021	121,636,000,000	-53.57	-14.10	1,540,000,000,000	4.1	8.4	7.89

2022	89,496,000,000	-65.84	-0.26	1,540,000,000,000	4.1	0	5.81

Source: Prepared by the researcher based on the annual reports issued by the Gulf Commercial Bank.

It is evident from Table (14) that the highest employment rate of funds was in 2016, reaching (39.71), while the lowest employment rate was in 2022 at (16.61). This increase is attributed to the rising demand for cash credit compared to total assets. In contrast, in 2022, cash credit decreased to (16.61), with an amount exceeding (20) billion less than the previous year due to the non-repayment of debts from previous years, which amounted to over (157) billion. Therefore, the bank's management decided to reduce the granted cash credit. We notice that the variation between cash credit and total assets results in a decline of both; however, cash credit is decreasing at a faster rate than total assets. There is a relative correlation of (0.94) between the change in cash credit and the rate of change in total assets, indicating a strong and cohesive affiliation between them. This means that the change in cash credit and the change in total assets are moving together with a high degree of strength. Thus, cash credit has a significant and strong impact on total assets.

Table (15) Employment of funds for Ashur International Bank for the period (2015 - 2022)

Investment Employment Indicator $= \frac{\text{Total cash credit}}{\textit{Total fixed assets}}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	28,440,001,000	—	—	407,730,097,000	—	—	6.98
2016	9,623,272,000	-66.10	-66.10	374,710,708,000	-8.10	-8.10	2.57
2017	10,463,000,000	-63.20	8.70	376,315,630,000	-7.70	0.43	2.78
2018	5,624,000,000	-80.20	-46.20	467,479,690,000	14.65	24.23	1.20
2019	14,990,000,000	-47.20	166.50	415,992,208,000	2.03	-11.01	3.60
2020	25,108,000,000	-11.70	67.40	473,954,153,000	16.24	13.93	5.30
2021	83,804,000,000	194.60	233.70	613,525,839,000	50.47	29.45	13.66
2022	241,682,000,000	749.70	1.80	779,419,575,000	91.16	0.27	31.01

Source: Prepared by the researcher based on the annual reports issued by Ashur International Bank.

We observe the data detailed in Table (15) mentioned above, which achieved the highest rate of investment of funds (cash credit) for the year 2022 at a rate of (31.01), indicating significant development in the employment of cash credit as a percentage of total assets, and a substantial increase in the comparison of cash credit to assets, reflecting an expansion in cash credit activities, while the lowest rate of investment of funds (cash credit) was recorded in 2018 at (1.20), This indicates an inverse trend in the investment of funds in that year. The cash credit and total assets over the study years show that in more than half of the years analyzed, cash credit equals total assets with a percentage of (57.14), and the balance continued throughout most periods, whether it was increasing or decreasing, indicating a medium to strong affiliation between cash credit and total assets.

Table (16) Investment of funds for the International Development Bank for the period (2015 - 2022)

Investment Employment Indicator $= \frac{\text{Total cash credit}}{\textit{Total fixed assets}}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	290,690,000,000	—	—	792,954,000,000	—	—	36.66
2016	279,132,000,000	-3.90	-3.90	654,596,000,000	-17.45	-17.45	42.64
2017	267,038,000,000	-8.10	-4.30	650,770,424,000	-17.93	-0.58	41.03
2018	288,003,000,000	-0.90	7.80	660,960,008,000	-16.65	1.57	43.57
2019	345,327,000,000	18.70	19.90	768,378,726,000	-3.10	16.25	44.94
2020	384,900,658,000	32.40	11.40	1,069,745,295,000	34.91	39.22	35.98
2021	602,342,281,000	107.20	56.40	1,507,924,651,000	90.17	40.96	39.95
2022	842,834,314,000	189.90	0.30	1,798,952,163,000	126.87	0.19	46.85

Source: Prepared by the researcher based on the annual reports issued by the International Development Bank.

Table (16) shows that the International Development Bank had the highest percentage of funds employed for cash credit in 2022 at a rate of (46.85), while the lowest percentage for funds employed (cash credit) was recorded in 2020 at a rate of (35.98). This is the lowest percentage during the period, but it remains high. The reason for this increase is a significant rise in cash credit compared to assets, indicating the substantial expansion and demand for cash credit in the bank, unlike in 2020, The decline in the percentage of money employment for cash credit due to the COVID-19 pandemic that swept the global economy. An Evaluation of the trends of increase and decrease in cash credit and total assets over the years shows approximately (85.7) highlighting a simultaneous (increase or decrease) between cash credit and total assets. This indicates the existence of a relationship, as the correlation between cash credit and total assets was calculated to be about (0.98), which indicates a very strong affiliation betweenthe two variables.

Table (17) Investment of funds for the Iraqi National Bank for the period (2015 - 2022)

Investment Employment Indicator = $\frac{\text{Total cash credit}}{\text{Total fixed assets}}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	160,038,361,000	—	—	578,847,033,000	—	—	27.65
2016	124,682,911,000	-22.00	-22.00	612,955,425,000	5.89	5.89	20.34
2017	134,356,000,000	-16.00	7.70	603,980,329,000	4.34	-1.46	22.25
2018	76,828,000,000	-51.90	-42.80	525,757,058,000	-9.17	-12.95	14.61
2019	168,964,000,000	5.50	119.90	632,803,000,000	9.32	20.36	26.70
2020	317,598,636,000	98.40	87.90	893,205,652,000	54.31	41.15	35.56
2021	866,613,924,000	441.50	172.80	1,821,341,840,000	214.65	103.91	47.58
2022	950,955,823,000	494.20	0.09	2,416,088,780,000	317.40	0.33	39.36

Source: Prepared by the researcher based on the annual reports issued by the National Bank of Iraq.

The highest investment ratio for the year 2021 was (47.58), while the lowest investment ratio for the year 2018 was (14.61). The reason for the increase is attributed to granting cash credit at a high rate relative to total assets, unlike in 2018 when cash credit fell to its lowest levels with a decrease of (42.8%) compared to the previous year, which is attributed to the non-repayment of credit facilities. The affiliation between cash credit and total assets is illustrated, with a value of (0.985), indicating a very strong affiliation between the two variables.

Table (18) Investment of funds for Al-Mansour Bank for the period (2015 - 2022)

Investment Employment Indicator = $\frac{\text{Total cash credit}}{\text{Total fixed assets}}$							
Year	Total cash credit (1)	Growth rate %	Change rate %	Total assets (2)	Growth rate %	Change rate %	Investment of funds (1)/(2)
2015	112,747,643,000	—	—	1,057,589,237,000	—	—	10.66
2016	114,534,681,000	1.50	1.50	1,104,063,814,000	4.39	4.39	10.37
2017	116,742,879,000	3.50	1.90	1,316,451,509,000	24.48	19.24	8.87
2018	123,811,750,000	9.80	6.00	1,566,367,957,000	48.11	18.98	7.90
2019	142,577,759,000	26.40	15.10	1,461,478,909,000	38.19	-6.70	9.76
2020	137,915,781,000	22.30	-3.20	1,287,419,060,000	21.73	-11.91	10.71
2021	149,940,566,000	32.90	8.70	697,917,429,000	-34.01	-45.79	21.48
2022	191,825,114,000	70.10	0.20	736,839,536,000	-30.33	0.06	26.03

Source: Prepared by the researcher based on the annual reports issued by Al-Mansour Bank.

The highest percentage of money employment was recorded in 2022 at (26.03), indicating a significant increase in the employment of cash credit relative to total assets, while the opposite was true for 2018 where the lowest percentage of money employment for cash credit was (7.90). This is attributed to the increase in total assets against cash credit, We see cash credit growing variably, with relative growth rates in most years. However, total assets did not increase significantly and then decreased in the last two years (2021 - 2022). There is an inverse affiliation between cash credit and total assets, indicating that an increase in cash credit does not necessarily mean an increase in assets.

4. Study the relationship between independent variables and the dependent variable

The relationship between the impact of the independent variables represented by financial technology and its indicators on the dependent variable represented by cash credit is being studied, which will focus on testing the main hypothesis which states that (there is a significant statistical effect of the financial technology variable on cash credit for the fiscal years 2015-2022), and a set of sub-hypotheses that will be achieved through explanation, To test the impact of financial technology on cash credit, a simple linear regression equation will be used, described by the following mathematical model: y_i=β_0+β_1 x_i+e_i

Where y_i is the dependent variable, (β_0 〖,β〗 _1) represents the model parameters, where β_0 is the stability term, β_1 is the marginal slope, and e_i is the random error term that follows a normal distribution with mean 0 and standard deviation σ_i.

The t-test, F-test, and corrected coefficient of determination (R2) are used to determine the proportion of variation in the dependent variable explained by the independent variable. Coding Variables and Building Regression Models

The variables involved in building regression models can be coded as follows: to build more clear regression models, as shown in the table below.

Table (19) shows the codes for the independent and dependent variables involved in building regression models.

Variable symbol	The name of the dependent variable	Variable symbol	The name of the dependent variable
x_1	Electronic cards	y	Cash credit

x_2	Technology assets		
x_3	Financial technology		

Source: Prepared by the researcher based on SPSS

1. The impact of financial technology, electronic cards, and technological assets on cash credit at the Bank of Baghdad

- **The impact of financial technology on cash credit**

Through this regression model, the cash credit variable represents the dependent variable that is affected by the financial technology variable. This model can be formulated mathematically as follows: y_i=β_0+β_1 〖(x_3)〗 _i+e_i ,i=1,2…..8

Where
y_i is the cash credit variable
β_0 is the constant term
(β_1) represents the marginal slope of the above model
〖(x_3)〗 _i: is the financial technology variable
e_i is the random error term that follows a normal distribution with a mean of 0 and a standard deviation of σ_i.
The results listed in the table below represent the impact of financial technology on cash credit.

Table (20) shows the estimated values of the coefficients of the simple linear regression model between the two variables, financial technology and cash credit, during the years 2015-2022 for the Bank of Baghdad.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**7.273**	**0.000**
Fixed Limit	20.379	4.541	0.000	$y = B_0 + B_1 x_3$	
Finance Technology	12.835	3.810	0.000	Predictive Equations $Y = 20.379 + 12.835X_1$	
Corrected coefficient of determination R2=0.321 Coefficient of determination R2=0.353					

Source: Prepared by the researcher based on SPSS

We note that the coefficient of determination (R^2) reached a value of (0.353) and the corrected coefficient of determination reached a value of (0.321), which shows that the interpretability of the regression equation is somewhat high, which indicates that (32.1%) of the changes that occur in monetary credit are due to the financial technology variable, We find that the calculated value of (F) is (7.273), which is a significant value below the significance level of (0.05). We conclude that the model between financial technology and cash credit is largely consistent with the data under study, which goes back to the Bank of Baghdad, We find that the financial technology variable has a direct effect, meaning that when financial technology increases by one unit, the monetary credit variable index will increase by (12.835), and that this variable has a significant effect, which is clear through the (t) test of the beta value coefficient (B1), which amounted to (3.810), and its probability value is (0.000), and upon comparison, we find that this value is less than (0.05), and this is evidence of the significance of the beta coefficient, Hence, our statistical decision is to accept the alternative hypothesis (there is a statistically significant moral effect of the financial technology variable on the cash credit variable for the fiscal years (2015-2022) for the Bank of Baghdad against any other hypothesis.

- **The Impact of Electronic Cards on Cash Credit**

Through this regression model, the cash credit variable represents the dependent variable that is affected by the electronic card variable. This model can be formulated mathematically as follows:

$$y_i = \beta_0 + \beta_1 (x_1)_i + e_i \quad , i = 1,2 \ldots .8$$

Where y_i is the cash credit variable , β_0 is the constant term , (β_1) represents the marginal slope of the above model , 〖(x_1)〗 _i: is the electronic card variable, e_i is the random error term that follows a normal distribution with mean 0 and standard deviation σ_i, The results listed in the table below represent the effect of electronic cards on cash credit , Table (21) shows the estimated values of the coefficients of the simple linear regression model between the variables of electronic cards and cash credit during the years 2015-2022 for the Bank of Baghdad.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**85.541**	**0.000**
Fixed Limit	19.578	22.744	0.000	$y = B_0 + B_1 x_3$	
Finance Technology	7.782	9.248	0.000	Predictive Equations $y = 19.578 + 7.782x_1$	

Corrected coefficient of determination R2=0.923 Coefficient of determination R2=0.934	

Source: Prepared by the researcher based on SPSS .

We note that the coefficient of determination (R^2) reached a value of (0.934) and the corrected coefficient of determination reached a value of (0.923), which shows that the interpretability of the regression equation is somewhat high, which indicates that (92.3%) of the changes that occur in cash credit are due to the variable of electronic cards, We find that the calculated value of (F) is (85.541) which is a significant value below the significance level (0.05). We conclude that the model under study between electronic cards and cash credit is largely consistent with the data under study which goes back to the Bank of Baghdad. We find that the variable of electronic cards, It has a direct effect, meaning that when the number of electronic cards increases by one unit, the cash credit variable index will increase by (7.782), and this variable has a significant effect. This is clear through the (t) test for the beta value coefficient (B1), which reached (9.248) and its probability value is (0.000). When comparing, we find that this value is less than (0.05), and this is evidence of the significance of the beta coefficient. Therefore, our statistical decision is to accept the alternative hypothesis(There is a statistically significant moral effect of the electronic cards variable on the cash credit variable for the fiscal years (2015-2022)) for the Bank of Baghdad, against any other hypothesis.

- **The impact of technological assets on monetary credit:** Through this regression model, the monetary credit variable represents the dependent variable that is affected by the technological assets variable. This model can be formulated mathematically as follows: y_i=β_0+β_1 〖(x_2)〗_i+e_i ,i=1,2…..8

Where : y_i is the cash credit variable , β_0 is the constant term, (β_1) represents the marginal slope of the above model, 〖(x_2)〗_i: is the technological assets variable, e_i is the random error term that follows a normal distribution with mean 0 and standard deviation σ_i, The results listed in the table below represent the effect of technological assets on cash credit, Table (22) shows the estimated values of the coefficients of the simple linear regression model between the variables technological assets and cash credit during the years 2015-2022 for the Bank of Baghdad.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**7.691**	**0.000**
Fixed Limit	**9.894**	**6.788**	**0.000**	$y = B_0 + B_1 x_3$	
Finance Technology	**8.633**	**2.773**	**0.000**	**Predictive Equations**	
Corrected coefficient of determination R2=0.543 Coefficient of determination R2=0.561				$y = 9.894 + 8.633x_2$	

Source: Prepared by the researcher based on SPSS .

The coefficient of determination (R^2) reached a value of (0.561) and the corrected coefficient of determination reached a value of (0.543), which shows that the interpretability of the regression equation is somewhat high, which indicates that (54.3%) of the changes that occur in monetary credit are due to the variable of technological assets. We find that the calculated value of (F) is (7.691), which is a significant value below the significance level of (0.05). We find that the technological assets variable has a direct effect, meaning that when technological assets increase by one unit, the monetary credit variable index will increase by (8.633), and that this variable has a significant effect. This is clear through the (t) test for the beta value coefficient (B1), which reached (2.773) and its probability value is (0.000). Our statistical decision is to accept the alternative hypothesis (there is a statistically significant moral effect of the technological assets variable on the cash credit variable for the fiscal years 2015-2022) for the Bank of Baghdad, against any other hypothesis.

2. The impact of financial technology, electronic cards, and technological assets on cash credit at Gulf Commercial Bank:

a. The impact of financial technology on cash credit: Table (23) shows the estimated values of the coefficients of the simple linear regression model between the variables of financial technology and cash credit during the years 2015-2022 for the Gulf Commercial Bank.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**8.209**	**0.000**
Fixed Limit	**37.147**	**2.026**	**0,089**	$y = B_0 + B_1 x_3$	
Financial technology	**17.654**	**4.458**	**0.000**	**المعادلات التنبؤية**	
Corrected coefficient of determination R2=0.129 Coefficient of determination R2=0.147				$Y = 37.146 + 17.654X_1$	

Source: Prepared by the researcher based on SPSS .

We see that the coefficient of determination (R^2) reached a value of (0.147) and the corrected coefficient of determination reached a value of (0.129), which shows that the interpretability of the regression equation is somewhat high, which indicates that (%12.9) of the changes that occur in cash credit are due to the financial technology variable. Through the results included in Table (23), we find that the calculated value of (F) is (8.209), which is a significant

value below the significance level of (0.05), We conclude that the model under study between financial technology and cash credit is largely consistent with the data under study, which goes back to the Gulf Commercial Bank. We find that the financial technology variable has a direct effect, meaning that when financial technology increases, One unit, the monetary credit variable index will increase by (17.654), and this variable has a significant impact, and this is clear through the (t) test of the beta value coefficient (B1), which reached (4.458) and its probability value is (0.000), and upon comparison we find that this value is less than (0.05), and this is evidence of the significance of the beta coefficient, and therefore our statistical decision is to accept the alternative hypothesis that states: (There is a statistically significant moral effect of the financial technology variable on the cash credit variable for the fiscal years (2015-2022)) for the Gulf Commercial Bank, against any other hypothesis.

b. **The impact of electronic cards on cash credit:** Table (24) shows the estimated values of the coefficients of the simple linear regression model between the variables electronic cards and cash credit during the years 2015-2022 for the Gulf Commercial Bank.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**22.337**	**0.000**
Fixed Limit	**37.945**	**15.712**	**0,000**	$y = B_0 + B_1 x_3$	
Electronic cards	**56.714**	**4.726**	**0.000**	**المعادلات التنبؤية**	
Corrected coefficient of determination R2=0.765 Coefficient of determination R2=0.786				$Y = 37.945 + 56.714X_1$	

Source: Prepared by the researcher based on SPSS .

It appears that the coefficient of determination (R^2) reached a value of (0.786) and the corrected coefficient of determination reached a value of (0.765), which shows that the interpretability of the regression equation is somewhat high, which indicates that (76.5%) of the changes that occur in cash credit are due to the variable of electronic cards. Through the results included in Table (24), we find that the calculated value of (F) is (22.337), Which has a significant value below the significance level (0.05) we conclude that the model under study between electronic cards and cash credit, is largely consistent with the data under study which goes back to the Gulf Commercial Bank. We find that the electronic cards variable has a direct effect, meaning that when the electronic cards increase by one unit, the cash credit variable index will increase by an amount of (56.714), This variable has a significant effect, and this is clear through the (t) test for the beta value coefficient (B1), which reached (4.726), and its probability value is (0.000). When comparing, we find that this value is less than (0.05), and this is evidence of the significance of the beta coefficient. Therefore, our statistical decision is to accept the alternative hypothesis, (There is a statistically significant moral effect of the electronic cards variable on the cash credit variable for the fiscal years (2015-2022)) for the Gulf Commercial Bank, against any other hypothesis.

e. The impact of technological assets on cash credit: Table (25) shows the estimated values of the coefficients of the simple linear regression model between the variables technological assets and cash credit during the years 2015-2022 for the Gulf Commercial Bank.

Dependent variable / **Independent variable**	**Cash credit**			**F calculated**	**Sig**
	Value (β)	**T calculated**	**Sig**	**10.047**	**0.000**
Fixed Limit	**17.391**	**1.500**	**0,1842**	$y = B_0 + B_1 x_3$	
Technology assets	**14.765**	**4.023**	**0.000**	**المعادلات التنبؤية**	
Corrected coefficient of determination R2=0.126 Coefficient of determination R2=0.148				$Y = 17.391 + 14.765X_1$	

Source: Prepared by the researcher based on SPSS .

The coefficient of determination (R^2) reached a value of (0.148) and the corrected coefficient of determination reached a value of (0.126), which shows that the interpretability of the regression equation is somewhat high, which indicates that (12.6%) of the changes that occur in monetary credit are due to the variable of technological assets, We find that the calculated value of (F) is (10.047) which is a significant value under the significance level of 0.05. We conclude that the model under study between technological assets and cash credit is largely consistent with the data under study which goes back to the Gulf Commercial Bank. We find that the variable of technological assets has a direct effect, This means that when technological assets increase by one unit, the monetary credit variable index will increase by (14.765), and this variable has a significant effect, and this is clear through the (t) test of the beta value coefficient (B1), which reached (4.023) and its probability value is (0.000). When comparing, we find that this value is less than (0.05), and this is evidence of the significance of the beta coefficient. Therefore, our statistical decision is to accept the alternative hypothesis, which states: (There is a statistically significant moral effect of the technological assets variable on the cash credit variable for the fiscal years (2015-2022) for the Gulf Commercial Bank, against any other hypothesis.

Section Four: Conclusions and Recommendations

A. Conclusions: Through studying the theoretical and practical aspects, the study reached several results, and from this, the researcher presented a series of conclusions as follows:

1. This role belongs to the management and is reflected on the shareholders, businessmen and traders through the increase in the volume of credit granted and the elimination of traditional operations . Electronic cards play a role in economic and administrative activities by facilitating and speeding up payment transactions and commercial and financial exchanges, which increases the efficiency of economic transactions, stimulates banking operations in the banking sector, accelerates cash lending processes, positively affects management, achieves benefits for shareholders, and improves the business results of entrepreneurs.
2. Electronic cards play a role in economic and managerial activities by facilitating and accelerating payment, commercial and financial exchanges, increasing the efficiency of economic transactions, stimulating banking operations in the banking sector, speeding up the process of cash lending, which positively affects management, brings benefits to shareholders, improves the results of entrepreneurs ' business.
3. Banks did not invest enough in the financial indicators used by the researcher, such as the electronic card ratio for monitoring, measuring and credit development, due to their accuracy in analyzing financial performance. This is due to the fact that the administration does not apply strict standards.
4. Reviewing the difficulties and challenges facing the development of financial technology in Iraq and providing solutions to the challenges facing the banking sector in the study community, which leads to enhancing the quality of banking services provided to current and future merchants and businessmen.
5. banks should encourage customers to issue new electronic cards, which contributes to raising the levels of coverage, access to knowledge, and increasing their profits through the user base of digital cash credit .
6. The results of the financial analysis showed that technological assets have a big role in the automation of electronic banking operations, through modern programs and technologies, they execute several orders in record time and at the push of a button .

B. Recommendations: present clear and implementable solutions to the problems raised in the study, thus increasing the value of the study and ensuring that it has a tangible impact on reality.

1. The banking sector should work on increasing the transparency of cash credit transactions, which helps to build trust between banks and customers and increases the demand for financial services.
2. Commercial banks should promote the use of electronic cards among customers by offering special offers and incentives to encourage their use.
3. Updating laws and regulations and adapting to the rapid development of financial services services, with the establishment of digital controls to stand in front of the safety and security of digital financial transactions, facilitating solutions related to the issuance of electronic cards and digital financing services .
4. Encourage the use of artificial intelligence solutions, technological assets, helping to analyze complete data to optimize and speed up the execution of transactions .

Sources

1. **Arabic Sources:**

1. Abdul Hamid, and Nivin Yasser Abd Aziz (2013). "The Impact of Electronic Banking Applications on the Performance of Banks in the Egyptian Banking Sector." Scientific Journal of Research and Business Studies, Helwan University, Faculty of Commerce and Business Administration, Volume 27, Issue 3.

2. Abdul Rahman Ibrahim. The Role of Banks in Financing Small and Medium Enterprises in Iraq and Egypt: A Comparative Legal and Economic Study. Berlin: Publications of the Arab Democratic Center for Strategic and Economic Studies, 2020.

3. Abu Karsh, Sheriff. "Bank Credit Risk Management." The First Scientific Conference for Investment and Finance in Palestine Between the Development Prospects and Modern Challenges, Islamic University, 9 March 2015.

4. Ahmad J.W. (2023). "The Role of Accounting Standards in the Partnership between Financial Technology Companies and the Banking Sector to Mitigate Credit Risks: A Practical Study." Scientific Journal of Research and Business Studies, 37(02).

5. Ahmad, Jihan (2023). "The Role of Accounting Standards in the Partnership between Financial Technology Companies and the Banking Sector to Mitigate Credit Risks." Scientific Journal of Research and Commercial Studies, Volume 37, Issue 2.

6. Ahmed Abdel Aleem Al-Ajmi. "Electronic Payment Systems and Their Impact on the Authority of the Central Bank." Dar Al-Jamia Al-Gadida, Alexandria, 2013.

7. Al-Baldawe, Raef Nabil, and Ismail Haitham Abdul Khaleq (2019). "Evaluation of the Interaction Between Bank Credit and Government Spending in Iraq for the Period 2014-2017." Iraqi Journal of Economic Sciences, Volume Seventeenth, Issue Sixty-One.

8. Al-Douri, Sara Ali Hassoun. "The Role of Accounting Disclosure in Bank Credit Decision Making." Iraq: University of Baghdad, 2012, page 16.

9. Al-Jazaeri, Ibrahim Mohammed Ali, and Al-Naimi, Nadia Shakir. "Evaluation of Bank Credit Using a Selection of Financial Indicators." Journal of Management and Economics, Mustansiriyah University, College of Management and Economics, Issue 83, Iraq.

10. Al-Moussawi, Ali Amir Khalil. "Development of Financial Resources and Its Impact on the Bank Credit Portfolio: A Comparative Study Between a Sample of Iraqi Government and Private Commercial Banks." Master's Thesis, University of Baghdad, College of Administration and Economics, 2010.

11. Al-Shammari, Nazim Mohammed Nuri, and Al-Abdullah, Abdul Fattah Zuhair. Electronic Banking. First edition, Dar Wael for Publishing and Distribution, Jordan, 2008.

12. Awad Allah, Zainab Hussein. The Economics of Money and Finance. Cairo: University House, 1995.

13. Bou Sabai Al-Ayash Rabi, Salim Jabo, Musab Rawina. "Prospects of E-Commerce in the Age of the Financial Technology Revolution and Blockchain: Modern Trends in International Trade and Challenges for Sustainable Development." Al-Wadi: Shahid Hama Lakhdar University, pages 201-207.

14. Dowdine, Bashar Mahmoud. The Legal Framework of Contracts Concluded via Internet Companies. Dar Al-Thaqafa, Amman, Jordan, 2010.

15. Ibrahim Al-Masry. Monetary Economics (Money, Banks, Basel). Dar Al-Hekma for Printing, Publishing, and Distribution, 2014.

16. Ismail Ibrahim Abdul Baqi. Management of Commercial Banks. Amman: Dar Ghida for Publishing and Distribution, 2015.

17. Mahmoud, Bashir Ahmed Issa, and Al-Bashir, Ibrahim Fadl Al-Mawla. "The Impact of ATM Service Quality on Customer Satisfaction in Sudanese Banks." Research presented for obtaining a master's degree in Banking and Finance at Sudan University of Science and Technology, Graduate Studies College, Sudan, 2016.

18. Malika bin Alqama, Youssef Sahihi. "The Role of Financial Technology and Supporting the Financial and Banking Services Sector." Al-Ijtihad Journal for Legal and Economic Studies, Ameen Al-Aqial Hajj Moussa Akhmouk, Algeria, 2018, Volume 7, Issue 3.

19. Mamandi, Ghazi. Bank Management. Department of Banking and Finance, College of Administration and Economics, Salahaddin University, first edition, Haji Hashim Press, Erbil, 2012.

20. Mukaka, M.M. (2012). "Statistics Corner: A Guide to Appropriate Use of Correlation Coefficient in Medical Research." Malawi Medical Journal, 24(3).

21. Noor Muhammad Thabet Kazem. "Evaluating the Effectiveness of Bank Credit Management: A Conceptual Framework." Al-Anbar University Journal of Economic and Administrative Sciences, Volume 5, Issue 10, 2013.

22. Osama Wagdy Wadi, and Madiha Mohamed Metwally (2021). "The Impact of Investment in Financial Technology on the Profitability and Leadership of Egyptian Banking Units." Journal of Financial and Commercial Research, Port Said University, Faculty of Commerce, Volume 22, Issue 3.

23. Salah Al-Din Al-Sisi. Contemporary Banking Issues: Bank Credit - Banking Guarantees - Documentary Credits. First edition, Arab Thought House, Cairo, 2004.

24. Salam Hashim Mohammed, Haidar Thajeel Jawad. "The Margin of Bank Interest Rates and Its Effect on Bank Deposits and Cash Credit (Loans and Advances) in Iraq, Japan, and China as a Model for the Period (2004-2016)." Al-Muthanna Journal for Administrative and Economic Sciences, Volume 10, Issue 4, 2020.

25. Wafaa Hamdouche, Lamiaa Omani, and Somaya Ben Ali. "The Role of Financial Technology in Enhancing the Performance of the Algerian Banking Sector: Motivations and Challenges." New Economy Journal, Volume 12, Issue 4, 2021, University of Khemis Miliana, Algeria.

26. Wahiba Abdul Rahim, Ashwaq Ben Qaddour. "Trends in Financial Technology in Light of Successful Company Experiences." Al-Ijtihad Journal of Legal and Economic Studies, Amin Al-Aqal Hajj Musa Akhmoq, Algeria, Volume 7, Issue 3, 2018.

27. Yasmin Kouashi. "Criminal Protection of Electronic Signatures and Electronic Authentication Under the Law." Arab Bin Mehidi University, Um El Bouaghi, 2016-2017.

28. Zayda, Duaa Mohammed. "Troubled Credit Facilities in the Palestinian Banking System: An Applied Study on Banks Operating in the Gaza Strip." Unpublished Master's Thesis, Islamic University, Gaza, 2006.

2. **Foreign Sources:**

A. Aquanno, Scott, & Brennan, Jordan. "The Politics of Canadian Monetary Policy: Reassessing Canadian Inflation, Part II." Journal of Economic Issues (M.E. Sharpe Inc.), 50(3), 2018.

B. Auta, E. M. (2010). "E-banking in Developing Economy: Empirical Evidence from Nigeria." Journal of Applied Quantitative Methods, 5(2).

C. Brealey, Richard A., Myers, Stewart C., & Allen, Franklin. Principles of Corporate Finance. 10th ed. New York: McGraw-Hill, 2011.

D. Malik, N., Oktavia, A., Sri, M., & Anindyntha, F. (2019). "Financial Banking Performance of ASEAN-5 Countries in the Digital Era." Jurnal Keuangan dan Perbankan, 24(1).

E. Mukaka. M.M. (2012) " Statistics Corner: A Guide to Appropriate Use of Correlation Coefficient in Medical Research" Malawi Medical Journal; vol.24,no3 .