

# Impact Of Digital Finance On Facing The Financial Crises Caused By The Corona Pandemic

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## Abstract:

During the past two decades, digital played a prominent role in bringing about tangible development in several fields, especially banking. As it provided new opportunities for entrepreneurship and promoted creativity and innovation activities, and was adopted as a tool to confront financial crises. A sample of individuals working in commercial banks listed in the Iraq Stock Exchange was selected. The coefficient of determination ( $R^2$ ) and least squares modeling were used to test the hypotheses of the study and using the statistical programs (SPSS), (SMART PLS). A set of conclusions has been reached, including the existence of a significant negative effect of digital finance in financial crises. Based on the conclusions, a set of recommendations were presented, the most important of which is the need to adopt digital finance to overcome challenges and face financial crises.

**Key words:** Digital Finance, Banking Services, Internet Banking, financial crises.

## I. INTRODUCTION

The literature began to address the concept of digital finance for the urgent need for it, as the crises that appeared in the twenty-first century resulted in the emergence of such concepts (especially the financial crisis in (2008)). Hence, studies indicated the adoption of digital finance to face financial crises (Arner, 2020). The exploitation of technology for the purpose of financing has become an imperative (Vasenska et al., 2021). Over recent years, great emphasis has been placed on the digitization of financial services worldwide, due to the potential to change traditional systems, particularly in developing countries (Luo & Zeng, 2020). (Babarinde et al., 2021) points out that technological innovations are the driving force and a critical success factor for companies to enhance their capabilities to cope with emergency conditions, and digital financial services (DFS) are of great importance to the public, as they enhance the security of their money. Digital finance is a type of financial service that uses digital products such as personal

computers, the Internet, mobile phones and cards linked to a digital payment system (Babarinde et al., 2021). Technology is usually harnessed to find solutions to problems and confront crises.

Regarding the crisis caused by the corona pandemic, the economic impact of the Covid-19 epidemic was unprecedented and many official authorities described it as “great isolation” (Ba & Bai, 2020). The coronavirus pandemic has resulted in widespread disruption in the economy which has reduced demand for products (Sharpe et al., 2021). Here, we explore the impact of the use of digital financial platforms in reducing the current crisis. The development of digital technology has contributed to a revolution in all fields, especially banking. The need for digital increased, especially after the emergence of the corona pandemic, as all institutions gradually sought to devise certain means to adapt to the current trend, including working and performing tasks from home to face the secretions of the current crisis (COVID 19), which was represented by social distancing and many activities attended ... etc. (Uzoma et al., 2020), (Wang et al., 2021).

The study problem was represented by answering the question (What is the impact of digital finance on the financial crises caused by the corona pandemic??). Thus, the study aims to measure and analyze the impact of digital finance on the financial crises caused by the corona pandemic.

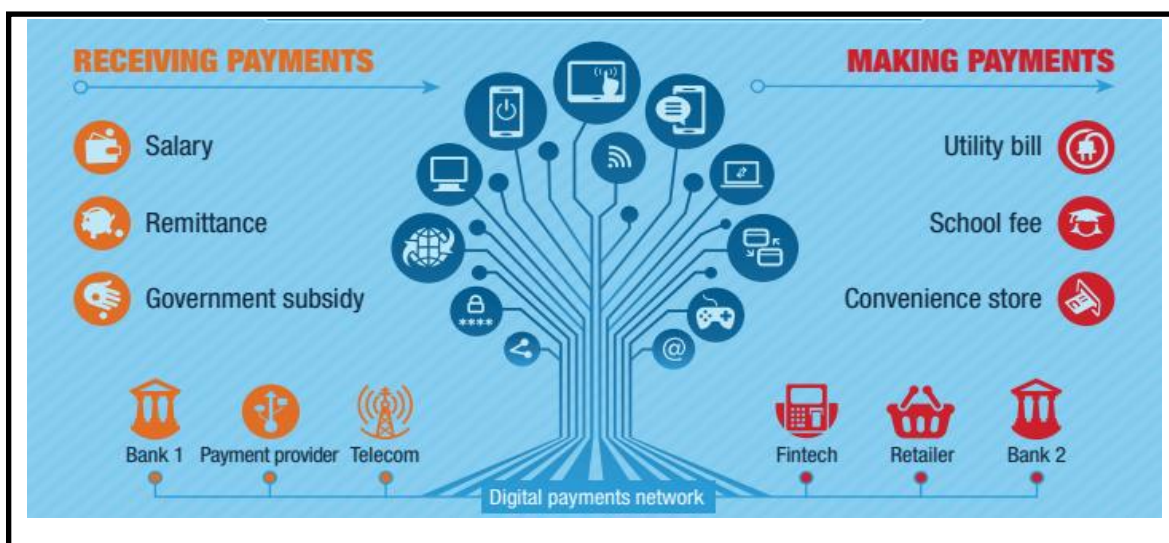
## **II. LITERATURE REVIEW**

### **2.1 The concept of digital finance**

The concept of digital finance was linked to the concept of financial inclusion. The goal of digital finance was to deliver financial services to the largest possible segment of customers, especially in the nineties of the last century. Many governmental and non-governmental institutions specialized in this regard have sought to adopt several programs to provide financial services through technological tools (mobile phone, the Internet) in Africa and East Asia (Koh et al., 2018). After that, the literature began to address the concept of digital finance for the urgent need for it, as the crises that appeared in the twenty-first century resulted in the emergence of such concepts (especially the financial crisis in 2008). Hence, studies indicated the adoption of digital finance to face financial crises (Arner, 2020). The exploitation of technology for the purpose of financing has become an imperative (Vasenska et al., 2021), (Liu et al., 2021). Fischer (Manyika et al., 2016), (Kofman & Payne, 2021) indicates that through digital finance, financial services can be delivered to 1.6 billion people in emerging economies. It could also increase the amount of loans granted to individuals and businesses by \$2.1 trillion and allow governments to save \$110 billion annually by reducing tax evasion. Financial service providers will also benefit, as they can save \$400 billion annually in direct costs while sustainably increasing their budgets by up to \$4.2 trillion (Manyika et al., 2016), (Baker, 2021).

Although there is no agreement on a standard definition of digital finance, there is some consensus that digital finance includes all products, technology and/or infrastructure that enable individuals and businesses to access online payments, savings and credit facilities without the need to visit a branch. Bank or direct dealing with a financial service provider (Ozili, 2018), (Ebong & George 2021). As defined by the Financial Stability Board, digital finance refers to emerging business models that are driven by big data, cloud computing, artificial intelligence and other new technologies in the financial market (Aisaiti et al., 2019), (Midika 2014). (Ozili, 2018), (Manyika et al., 2016), defines digital finance as a set of financial services provided through mobile phones, personal computers, the Internet, or cards connected to a reliable digital payment system. While (Shen et al., 2018) defined digital finance as reaching the largest possible number of customers (financing sources) and across large geographical areas through the use of digital technology. (Al-Dmour et al., 2020) also defines digital finance as the process of facilitating interaction and communication between customers and financial institutions through financial programs and products.

Figure (2) shows how institutions and individuals transfer money through digital financial tools (Manyika et al., 2016).



**Figure 1:** Transferring funds through digital financial instruments

**Source:** (Manyika et al., 2016).

### 2.1.1 The dimensions of digital finance

**1-Internet Banking (IB):** This dimension refers to a set of financial services that the bank provides or obtains from its customers through the Internet (Furst et al., 2002), (Keli kume, 2021). It is a form of electronic banking services, and it is an electronic portal that enables customers to obtain a range of different financial services such as paying bills, investments and obtaining the necessary financing (Raza et al., 2020). (Sharma et al., 2020:1) believes that (IB) is banking applications that allow

customers and institutions to conduct financial transactions (checking account balances, paying bills, transferring funds and scheduling payments) through the use of Wi-Fi, World Wide Web and Internet technologies in The place and time of their choice.(Arif et al., 2020) indicates that online services are more attractive compared to traditional services, and that these services are increasingly used day after day in many countries, especially Asian countries.

**2- Mobile Banking (MB):**This dimension refers to financial banking services provided with the help of smart mobile devices (Al-Dmour et al., 2020).Mobile Banking is defined as a channel that allows customers to use their mobile devices to communicate and interact with banks (Malaquias & Silva, 2020), (Shankar et al., 2020).The literature highlights mobile banking as a platform through which to develop mobile technology and financial applications (Al-Dmour et al., 2020).Banks use different methods of Mobile Banking, such as SMS (Short Message Banking), Wireless Access Protocol (WAP), and Interactive Voice Response (IVR) (Thusi & Maduku, 2020), (Al-Otaibi et al., 2018).

**3- Credit Card (CC):**Credit cards have features that make it easier for (individuals and institutions) to finance their investments, as it gives customers flexibility in terms of loan repayment period and loan amount (Hamid & Loke, 2021).Credit cards provide sufficient flexibility for enterprises to defer payment to a future date, and thus can allow enterprises to spend despite low liquidity (Bertaut & Haliassos, 2006) A credit card is a card adopted by customers for the purpose of making or receiving payments for investment or Buying and Selling Goods (Amin, 2007)

## **2.2The concept of financial crises caused by the corona pandemic**

The financial crises caused by the corona pandemic are represented by a decrease in funding resulting from closures due to the pandemic and crises resulting from contact cases.As some transactions require review (direct contact) to the concerned institutions.So digital financing has become a necessity to confront this type of crisis, as funding limits Digital from direct contact and at the same time saves money in a timely manner.

We will address financial crises in general and then explain the concept of financial crises resulting from the corona pandemic. A financial crisis is generally defined as a situation in which the value of financial institutions or financial assets rapidly declines. The financial crisis is usually associated with panic, as investors sell assets or withdraw their money with the expectation that the value of these assets will fall (Bhatia, 2011).(Golomzina, 2013) defines the financial crisis as disturbances in the financial system that impede the system's ability to allocate financial capital and disrupt the ability of the economy to operate. Financial crises may be in the form of problems in banking systems and financial collapses caused by speculation (Gajdzik & Wolniak, 2021), (Lagunoff & Schreft, 2001).

To talk about the financial crises resulting from the corona pandemic, we must first address what the corona pandemic is. On March 11, 2020, the World Health Organization (WHO) described the new coronavirus (COVID-19) as a global pandemic, as many countries announced an increase in cases of this virus. The rapid spread of COVID-19 has had massive impacts on economies and financial markets around the world (Narayan et al., 2020). For example, many countries have closed many non-essential institutions, imposed curfews on vehicles and individuals, travel bans (travel restriction and border closures), and restricted economic activities to control the spread of COVID-19 (Baig et al., 2020), (Okorie & Lin, 2021). The financial crises resulting from the corona pandemic are defined as those crises that cause a decrease in funding and a low level of investment, which result from impeding the freedom of movement of people and goods, stopping flights, imposing quarantine on a large part of the world's population and impeding financial development (Vasenska et al., 2021). (Sharpe et al., 2021) defines the financial impact of the corona pandemic as the widespread disruption in the economy that leads to reduced demand for products. In response to the negative effects of COVID-19 on the economy and financial markets, many countries have developed plans to confront the crises resulting from this pandemic, and then to implement this line, technology played the biggest role in its success, including digital finance (Chen & Yeh, 2021), (Vasenska et al., 2021).

### **III. THE STUDY DATA AND METHODOLOGY**

#### **3.1 Questions and objectives of the study**

The study questions are as follows:

- Is there an impact of digital finance on the financial crises caused by the corona pandemic?
- Can digital financial infrastructures be used to overcome financial crises and manage the economic repercussions?
- What are the dimensions of digital finance?

The objectives of the study are as follows:

- Measure and analyze the impact of digital finance on the financial crises caused by the corona pandemic.
- Exploiting digital financial infrastructures to overcome financial crises and urgent challenges and manage the imminent economic repercussions.
- Learn about the dimensions of digital finance.

#### **3.2 Building hypotheses**

During the past twenty years, digital constituted the largest part of industries, as it provided new opportunities for entrepreneurship and facilitated new innovation systems, and was adopted to confront crises (Autio et al., 2018). And (Vasenska et al.,

2021) believes that the use of financial technology applications (digital finance is part of it) leads to a reduction in risks when contacting other people. Moreover, adopting financial technology leads to the timely availability of funds during crises.(Gretzel et al., 2020) concluded that technology can be used as a tool to address financial crises and to promote financial progress. (Uzoma et al., 2020) indicated that the digital technological development contributed to a revolution in all fields, especially banking, and the need for digital increased, especially after the emergence of the corona pandemic, as all institutions gradually sought to devise certain means to adapt to the current trend, including work Doing tasks from home. According to what the previous literature indicated regarding the impact between digital finance and financial crises, the following hypotheses can be formulated:

**H1: There is a negative significant impact of digital finance on the financial crises caused by the corona pandemic.**

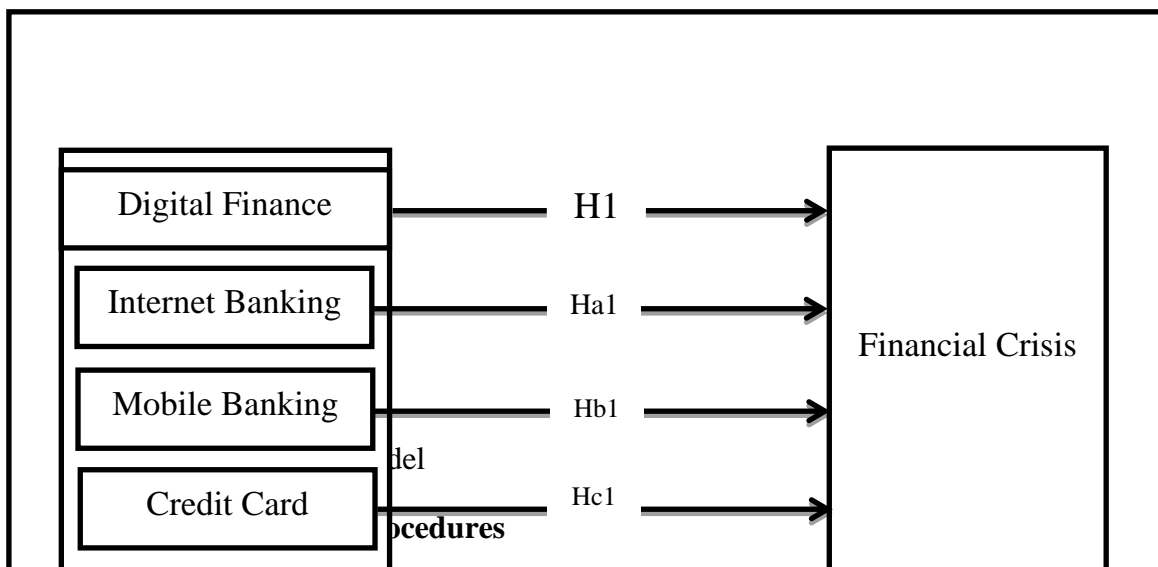
**Ha1: There is a negative significant impact of internet banking on the financial crises caused by the corona pandemic.**

**Hb1: There is a negative significant impact of mobile banking on the financial crises caused by the corona pandemic.**

**Hc1: There is a negative significant impact of credit card on the financial crises caused by the corona pandemic.**

### **3.3 The Study Model**

The study model shows a set of relationships that connect the study variables, and from this point and based on the study problem and its objectives and by taking note of a large number of recent literature, the study model was formulated and developed in the light of many relevant indicators, as the study model consists of two variables. The first variable is digital finance (the independent variable) (Ozili, 2018), the second variable is the financial crises caused by the corona pandemic (the dependent variable) (Vasenska et al., 2021). Figure(2)shows the study model.



The study adopted the quantitative research method, as it is characterized by its ability to collect a large amount of data within a shorter period of time. The data was collected using a questionnaire. Moreover, the study was descriptive in nature, and quantitative data was collected from a sample of (320) individuals working in commercial banks listed in the Iraq Stock Exchange, and the purpose is to explore the impact of digital finance on financial crises caused by the corona pandemic.

### 3.5 Sample

The study population is represented by individuals working in commercial banks listed in the Iraq Stock Exchange. The study sample was selected according to the table (Krejcie & Morgan, 1970), as it is clear that the sample size is (320) individuals. The probabilistic sampling method was adopted in selecting the sample, as each element of the population has a known degree of selection within the sample.

### 3.6 Measurement

The researchers adopted previous scales, taking into account the adaptation of the scale and the nature of the current study. The independent variable was measured based on (Durai & Stella, 2019), (Giovanis et al., 2012), (Sharma et al., 2017), and the dependent variable was measured based on (Vasenska et al., 2021), (Sharpe et al., 2021). With regard to determining the gradation of the scale and in line with previous studies, a five-graded Likert scale was adopted (1 = strongly agree, ....., 5 = strongly disagree).

## IV. RESULTS AND DISCUSSION

### 4.1 Results

#### 4.1.1 Normal Distribution Test

**1.Normal distribution test for digital finance variable:** The normal distribution is tested by relying on the values of (Skewness), (Kurtosis), as the acceptable values for them are between (1.96) and (-1.96).

**Table 1-**Normal distribution test for digital finance variable

Dimension	Item	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
<b>Internet Banking (IB)</b>	IB1	-0.020	0.128	-0.211	0.258
	IB2	0.114	0.128	-0.015	0.258
	IB3	-0.112	0.128	-0.501	0.258
	IB4	-0.101	0.128	-0.310	0.258
	IB5	0.012	0.128	-0.601	0.258
<b>Mobile Banking(MB)</b>	MB1	-0.132	0.128	-0.118	0.258
	MB2	0.120	0.128	-0.019	0.258
	MB3	-0.540	0.128	-0.321	0.258
<b>Credit Card (CC)</b>	CC1	-0.315	0.128	-0.985	0.258
	CC2	-0.590	0.128	-1.013	0.258
	CC3	-0.427	0.128	-0.386	0.258
	CC4	-0.813	0.128	-1.017	0.258

**Source:** output (SPSS)

It is clear from the results of Table (1) that all the results of the values of (Skewness) and (Kurtosis) are within the acceptable limits and are close to zero, and this indicates that the data are distributed normally.

**2.Normal distribution test for financial crises variable:** The normal distribution is tested by relying on the values of (Skewness), (Kurtosis), as the acceptable values for them are between (1.96) and (-1.96).

**Table 2-**Normal distribution test for financial crises variable

Variable	Item	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
<b>Financial Crisis (FC)</b>	FC1	-0.815	0.128	-0.671	0.258
	FC2	0.985	0.128	-0.972	0.258
	FC3	-0.673	0.128	-0.463	0.258
	FC4	-0.357	0.128	-0.247	0.258

**Source:** output (SPSS)



It is clear from the results of Table (2) that all the results of the values of (Skewness) and (Kurtosis) are within the acceptable limits and are close to zero, and this indicates that the data are distributed normally.

#### 4.1.2 Descriptive Statistics

**Table 3**-descriptive statistics for digital finance variable

No.	Dimension	Item	S.D	Mean
1	<b>Internet Banking</b>	IB1	0.93	<b>3.12</b>
2		IB2	0.34	<b>3.08</b>
3		IB3	0.75	<b>3.03</b>
4		IB4	0.52	<b>3.01</b>
5		IB5	0.91	<b>3.03</b>
		<b>IB</b>	<b>0.83</b>	3.05
1	<b>Mobile Banking</b>	MB1	0.89	<b>3.01</b>
2		MB2	1.01	<b>2.99</b>
3		MB3	0.79	<b>3.00</b>
4		<b>MB</b>	<b>0.98</b>	3.00
1	<b>Credit Card</b>	CC1	0.95	<b>3.15</b>
2		CC2	0.67	<b>3.13</b>
3		CC3	0.78	<b>3.15</b>
4		CC4	0.89	<b>3.14</b>
		<b>CC</b>	<b>0.81</b>	3.14

**Source:** output (SPSS)

The results of Table (3) indicate that the results of the general average of the arithmetic mean of the dimensions of digital finance were higher than the hypothetical mean (3), and this indicates the presence of the digital finance variable in the study sample. Also, the results of the standard deviation are low, and this indicates the homogeneity of the opinions of the study sample.

**Table 4**-descriptive statistics for financial crises variable

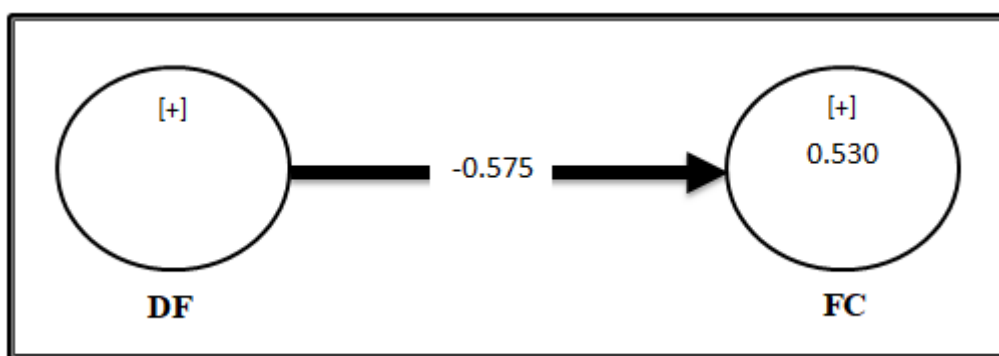
No.	Variable	Item	S.D	Mean
1	<b>Financial Crisis</b>	FC1	0.79	<b>3.00</b>
2		FC2	1.01	<b>2.99</b>
3		FC3	0.83	<b>3.01</b>
4		FC4	0.91	<b>3.00</b>
		<b>FC</b>	1.87	3.00

**Source:** output (SPSS)

The results of Table (4) indicate that the results of the general average of the arithmetic mean were higher than the hypothetical mean (3), and this indicates the presence of the dependent variable in the study sample. Also, the results of the standard deviation are low, and this indicates the homogeneity of the opinions of the study sample.

#### 4.1.3 Study hypotheses test

**H1:** There is a significant negative impact of digital finance in the financial crises caused by the corona pandemic. The impact between the study variables is tested based on the least squares modeling method, as shown in Figure (3) and Table (5) below.



**Figure 3:** Test the main hypothesis

**Table 5-** Main hypothesis test results

main hypothesis	path	(R <sup>2</sup> )	Coefficient path	T Value	P Value	Result
	→DFFC	0.530	-0.575	-7.313	0.000	Acceptance

**Source:** output (SMART PLS)

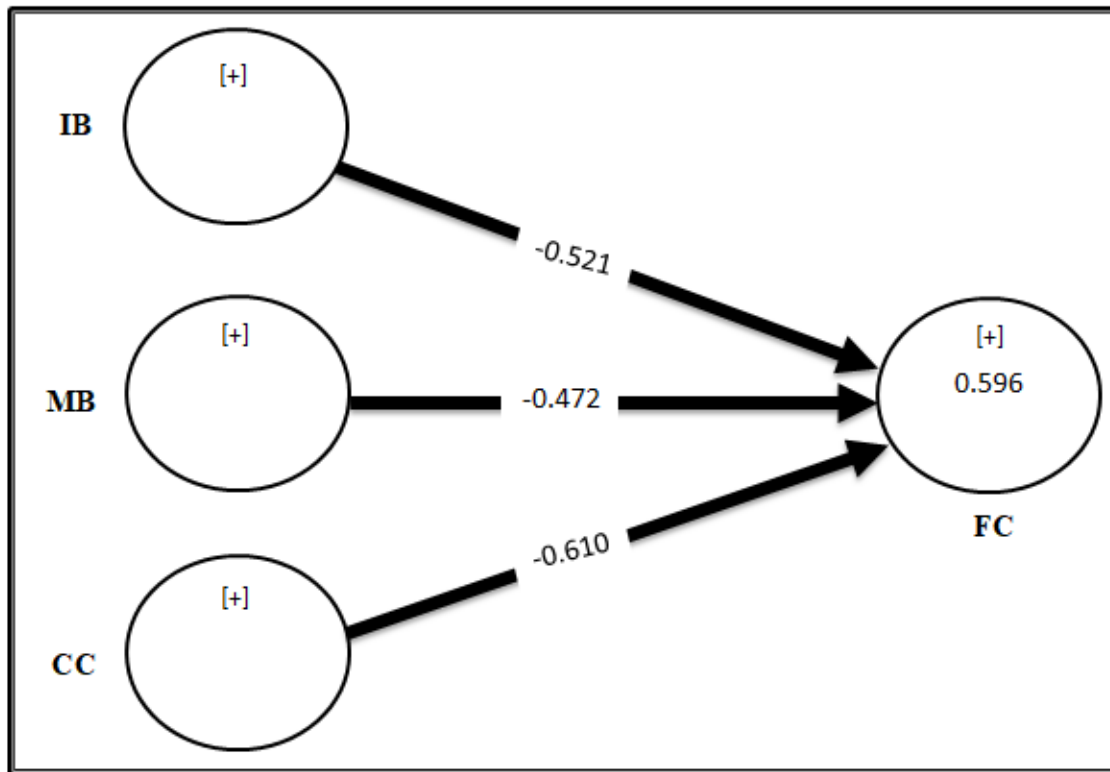
The results of Table (5) indicate that the value of the coefficient determination is (0.530), and this indicates the explanatory power of the independent variable to explain the dependent variable, and the value of the significance is (0.000) which is less than (0.05). Therefore, the main effect hypothesis is accepted.

**Ha1:** There is a significant negative impact of online banking on the financial crises caused by the corona pandemic.

**Hb1:** There is a significant negative impact of cellular banking in the financial crises caused by the corona pandemic.

**Hc1:** There is a significant negative impact of the credit card in the financial crises caused by the corona pandemic.

The impact between the study variables is tested based on the least squares modeling method, as shown in Figure (4) and Table (6) below.



**Figure 4:** Sub-Hypothesis test

**Table 6-** Sub-Hypothesis test results

sub-hypotheses	path	(R <sup>2</sup> )	Coefficient path	T-Value	P-Value	Result
Ha1	IB → FC	0.596	-0.521	-6.253	0.000	Acceptance
Hb1	MB → FC		-0.472	-5.823	0.000	Acceptance
Hc1	CC → CF		-0.610	-9.102	0.000	Acceptance

**Source:** output (SMART PLS)

The results of Table (6) indicate that the dimensions of digital finance negative impact the financial crises resulting from the corona pandemic. The level of significance for the three dimensions was (0.000), which is less than (0.05), so all sub-hypotheses are accepted.

#### 4.2 Discussion

(Vasenska et al., 2021) indicated that the use of financial technology leads to the timely provision of funds. (Gretzel et al., 2020) concluded that technology can be used as a tool to address financial crises and to promote financial progress. When looking at the results of the current study, we find that digital finance adversely affects financial

crises, as the adoption of technology facilitates the delivery and access to financial services in a timely manner (reducing the impact of financial crises), and this was clearly evident during the corona pandemic, if forced The corona crisis and its conditions that necessitated countries to close their borders to limit the spread of this epidemic, so it was necessary to resort to digital technology (digital finance) to continue working (obtaining and providing) financial services in a timely manner and then reducing the impact of the financial crises resulting from this pandemic. It is evident through the statistical analysis that the effect between the stock return and the inert debt ratio is positive and these results are in line with the results of the financial analysis, and these results are also consistent with the findings of the study literature. And these results are consistent with the results of the financial analysis.

The results of the current study are consistent with the results of the previous literature regarding the impact between digital finance and financial crises. The results of the current study indicate that digital finance adversely affects the financial crises caused by the corona pandemic. This indicates that the use of digital technology enables banks to face the financial crises resulting from the corona pandemic. It is also clear from the results of the current study that the dimensions of digital finance adversely affect financial crises. The results of the current study indicate that Iraqi banks rely heavily on the credit card in their work (delivery and access) for services. And then electronic banking, and the results also indicate that the use of mobile phones (delivery and access) to services is still at an insufficient level.

## **V. CONCLUSION**

Based on the practical results and previous literature, the following conclusions were reached:

- 1- Digital finance has a significant negative impact on the financial crises caused by the corona pandemic.
- 2- Through the results of the study, it is clear that the employees in the study sample have the desire to adopt digital technologies in providing or obtaining financial services.
- 3- The use of digital financial technologies leads to reducing the impact of financial crises and managing the economic repercussions.
- 4- As a result of the problems between the Iraqi government and telecom companies in Iraq as a result of the latter's failure to pay debts and the presence of legal violations. Internet service and mobile phone networks in Iraq are weak. This affects the work of the study sample banks.
- 5- Previous literature related to the subject of the study indicated that digital finance adversely affects financial crises.

6- Leads the adoption of modern digital technologies (cloud computing and artificial intelligence). To deliver financial services at the right time and quantity. As the use of these technologies reduces efforts (without the need to move between places) to obtain financial services.

## **VI. RECOMMENDATIONS**

Based on the conclusions of the study, the following suggestions can be made:

1- The necessity of resorting to digital financial technology to confront the financial crises caused by the corona pandemic. This is done by paying attention to developing the digital infrastructure of banks (designing some applications) that banks adopt to deliver or obtain services to customers.

2- The necessity of promoting the culture of using digital finance for individuals working in private commercial banks. This is done through holding seminars, workshops, attracting specialized expertise and holding training courses on the use of these digital technologies.

3- The need for Iraqi commercial banks to move towards developing digital financial infrastructure. This is done in cooperation with the public sector and companies specialized in this field (internet, mobile phone...etc).

4-The need to solve the outstanding problems between the Iraqi government and telecom companies, and for these companies to provide their services with high quality. And its delivery to all places in Iraq, as it is no secret to anyone the importance of internet and communication services, especially as we live in the digital age.

5- The researchers recommend future research efforts to search for digital finance and identify dimensions other than those addressed by the researcher, and apply it in other sectors.

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