

# THE IMPACT OF DIGITAL FINANCIAL TECHNOLOGIES ON THE DEVELOPMENT OF ENTREPRENEURSHIP: EVIDENCE FROM COMMERCIAL BANKS IN THE EMERGING MARKETS

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## Abstract

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This research aims to highlight digital financial technology, which has become the focus of attention for all economic and banking institutions in general (Shmuratko & Sheludko, 2021). Due to rising competition, client awareness, and the need for various services, many banks have switched to electronic transactions. And advanced financial services, banks no longer focus on their centuries-old activities (Alrawashdeh et al., 2022). Instead, it moved beyond employing financial technology and fostering international cooperation and information sharing to suit customers' demands, such as automated teller machines (ATMs), smart cards, online payments, and cash transfers. Data were processed using statistical techniques (SPSS). The results of the statistical analysis of the data collected through the questionnaire tool prepared for this purpose showed an impact of financial technology on the dimensions of entrepreneurship. A random sample of 300 bank managers and commercial bank employees who were in direct contact with customers was selected, and it shows that there is an impact of the independent dimension of digital financial technology on the dimensions of entrepreneurship (initiative, risk tolerance, innovation, investment or acquisition of opportunities) in the research sample banks.

**Keywords:** Fintech, Digital Financial Technology, Entrepreneurship, Commercial Banks

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## 1. INTRODUCTION

Digital financial technology is one of the most important things that has contributed to the increase in the production of the financial and banking services industry. As the ability to revolutionize technology within this sector increases, this revolution was an unusual form of emerging technology or infrastructure for financial systems in banks or services provided by service providers and users (Łasak, 2022). It has contributed to the transformation of a large number of these banks into digital transactions using modern and secure systems for payments and transfers of funds, such as: 1) automated teller machines (ATMs); 2) mobile payment systems; 3) smart cards, and 4) Internet use in paying and transferring money from one place to another; and 5) electronic display and billing system, which helps in the process of providing a sophisticated and low-cost banking service. These services have also contributed positively to strengthening the financial inclusion of individuals, the financial sector, and business, so the bank's mission and functions are no longer about the traditional processes it has practiced for hundreds of years. Rather, it went beyond using modern and innovative methods to meet the desires and needs of its customers (Sugiyanto, 2019).

From this point of view, our research paper was addressed to highlight the role of financial information technology in promoting entrepreneurship in Iraq in the knowledge economy. This research will be prepared through four investigations, the *first* of which includes the research methodology, and the *second* topic consists of two demands: 1) the requirement is the concept of digital financial technology, and 2) the requirement focuses on the concept of entrepreneurship and its dimensions. The *third* research addresses the practical aspect of the study and concludes the *fourth* research, which contains conclusions and recommendations. With the increase of the technological revolution in the financial and banking sector and more efficiency and creativity, this sector is witnessing to achieve prosperity and high growth in this field (Morozko et al., 2021; Alkhwaldi et al., 2022).

This research derives its importance through the importance of its variables represented by digital financial technology and entrepreneurship because of its prominent role in the current revolution in the business sector in general and the banking sector in particular. The importance of research is highlighting the variables of the study and knowing the extent to which they are applied in the banks' sample study. In addition, there is the infrastructure required to provide digital services to customers. Lastly, trying to motivate Iraqi commercial banks to provide electronic banking services over the Internet, will contribute effectively to improving entrepreneurship in Iraq and raising its levels.

The research aims to diagnose and determine the level of employment of digital financial technology in improving entrepreneurship. Moreover, it to know the reality of digital financial technology in commercial banks in Iraq and the challenges they face. Finally, measuring

the correlation and impact of digital financial technology in improving entrepreneurship.

This research came to highlight the element of digital financial technology and tries to find out its impact on improving entrepreneurship in the banking research sample; the questions of research can be formulated through the:

*RQ1: What is the level of application of digital financial technology in banks based on the research sample?*

*RQ2: What is the impact of digital financial technology on improving entrepreneurship in banks based on the research sample?*

The structure of this paper is organized as follows. Section 2 describes the study background in detail. Section 3 summarises our methodologies and data specifications. Section 4 presents the experimental findings, and Section 5 draws concluding remarks.

## 2. LITERATURE REVIEW

### 2.1. The concept of digital financial technology

Digital financial technology has been defined by the Basel Committee on Banking Supervision as synonymous with technological innovation in financial services in its working papers (Shmuratko & Sheludko, 2021, p. 64). In the report of the working group of the Financial Stability Committee (FSB), FinTech is defined as "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services" (FSB, 2017, p. 7).

Digital financial technology is also defined as an invention that contributes to the elimination of old finance habits by obtaining crowdfunding in a more accessible way, quick and cheap collection of money all over the world, which would have been impossible for the development of financial information technology that shortened the time and distance to start a business (Alrawashdeh et al., 2022). It was also defined as all operations or activities that are held, implemented or promoted by electronic or optical means, this is done by financial institutions or banks (Saad & Fisol, 2019), it is defined as a collection of computers, supporting equipment, programs and related services. Applied to support the stages of work, which make digital information generated and stored easy to use (Aduda & Kingoo, 2012).

### 2.2. Entrepreneurship

Entrepreneurship has been defined as the vital process that creates growing wealth. This wealth brings to individuals who bear significant risks in property rights, time, and professional commitment to providing value for some service products, the product or service itself may not be new or unique, but an entrepreneur must somehow enter the value by securing and allocating the necessary resources and skills (Bomani et al., 2022; Gashi et al., 2022; Tsaknis et al., 2022). Entrepreneurship plays an important role in creating and growing businesses,

and these results can have modest beginnings; entrepreneurship measures begin to link lucrative opportunities with adventurous individuals (Primantari et al., 2022; Hamdallah & Srouji, 2022; Sahinidis et al., 2021; Marzuki et al., 2022).

Organizations today seek to provide the best of services and distinctive businesses that make them live up to the ranks of leading organizations and high positions among customers by following multiple approaches and paths and adopting new methods for business organizations, including leadership. The concept of leadership has gained great importance in contemporary business literature because of the ability of the business environment to keep pace with change, development, and proactiveness to achieve outstanding performance (Shi & Ye, 2016). Entrepreneurship is a combination of entrepreneurial skills (including the spirit of challenge and skills), which is an intangible, unique, and important factor. Entrepreneurship can mean discovering opportunities and building new banks by organizing resources and providing market value (Nambisan et al., 2019).

### 2.3. Dimensions of entrepreneurship

Entrepreneurship provides a deep understanding of marketing to opportunities that other organizations do not have; they see that opportunities within a product, market, or technological field, so they're trying to take advantage of model opportunities first, and other organizations are trying to follow the first organization, which is a sign of potential competitors (Zhai et al., 2018). Enriching the environment surrounding the two initiatives satisfies and invests opportunities using all the resources and needs available in society. It is a real challenge to achieve an integrated vision to promote the concept of self-employment among members of the community and to plan to create new project models (Al Shobaki et al., 2018).

Leading organizations take risks, whether at the level of individuals or groups, and there is one way to adopt it and work successfully to manage these risks; it is to work in alliance with other parties (Hoskisson et al., 2017). The tendency to take risks is about business willingness to pursue opportunities, although it's uncertain about ultimate success or acting boldly without knowing the consequences (Olubiyi et al., 2019; Bani Atta & Marzuki, 2020).

A major business process that organizations use to achieve competitive advantage. Innovations are currently a prerequisite for competitiveness, and innovation involves a tendency to engage in and support new ideas, modernity, experimentation, and creative processes. And the concept of knowledge-based innovation is a superstar in entrepreneurship, and these innovations can be scientific, technical, or social in nature. Knowledge-based innovation requires careful analysis of all the necessary factors and a clear focus on the strategic position that requires systems development; market concentration and strategic position occupation to perform effective business (Kogabayev & Maziliauskas, 2017; Khan et al., 2022).

Investing opportunities represents how to create, discover and develop opportunity, and an assessment of the potential that must be based on the type of strategic relationship of these possibilities and to take advantage of them based on both strategic and non-strategic motives (Kilenthong et al., 2011). Which is the ability to predict before actual events occur and to take action for problems that are likely to occur in the future; it can also be said that it is linked to taking the first step forward (Janabi et al., 2021).

## 3. RESEARCH METHODOLOGY

### 3.1. Data and sample

In this research, the information generated from the analysis of the data collected using the questionnaire form designed in the light of the Likert Pentagram scale will be interpreted, where the highest weight in the scale is equal to the degree (5) to represent the answer field ("*I totally agree*") while putting the lowest weight on the scale equal to the score (1) to represent the answer field ("*Not fully agree*"). A random sample of 300 responders was selected to display and analyze the responses of the sample members, their perceptions of the study variables and their subdivisions and the testing of the theories of the study using descriptive and inference methods.

Representing the research community of Iraqi commercial banks listed on the Iraqi Stock Exchange, the research sample was 6 of the 37 banks, and Table 1 shows the banks' sample study.

**Table 1.** Banks sample study

No	Bank name	Year of establishment	Capital at the year of establishment, IQD	Current capital, IQD
1	Iraqi National Bank	1995	400 million	250 billion
2	Gulf Commercial Bank	1999	600 million	300 billion
3	Baghdad Bank	1995	200 million	350 billion
4	Al-Mansour Investment Bank	2005	55 billion	250 billion
5	Ashur International Bank	2005	25 billion	250 billion
6	Trans-Iraqi Investment Bank	2006	65.5 billion	264 billion

We use research sample characteristics that include: gender, age, work experience, and academic achievement, as shown in Table 2.

**Table 2.** Demographic information

Identification information	Categories	Repetition	Percentage, %
Gender	Male	210	70
	Female	90	30
Total		300	100
Years of service in the job	5 years or less	120	40
	6 to 10 years	80	26.7
	11 to 15 years	60	20
	More than 15 years	40	13.3
Total		300	100
Age	20 to 25 years old	130	43.3
	26 to 30 years old	70	23.3
	31 to 35 years old	80	26.7
	More than 40 years	20	6.7
Total		300	100
Academic achievement	Bachelor	95	31.6
	Higher Diploma	170	56.7
	Master	30	10
	PhD	5	1.7
Total		300	100

From the data of the previous table, we can clarify the personal and demographic characteristics of the study sample as follows:

1. *Age*: The frequency and percentages show that the sample is representative of all age groups, and this serves the objectives of the study more, as the sample was not focused on a particular age group.
2. *Gender*: The frequency and percentage show that males represent more than females in the study sample, where the number 210 represents 70%, while the number of females is 90, which represents 30%; perhaps this indicates the lack of a female component within the departments in the banks' research sample.
3. *Academic achievement*: Repetition and

percentages show that 31.6% of the sample members are 95 Bachelor's degree holders and 10% (30 respondents) have Master's degree. Holders indicate that the majority of the employees in the banks' sample in the study are holders of higher education diplomas, which is 56.7% of the total number of respondents (or 170); and 1.7% of doctoral holders accounted for 5 respondents of the research sample.

4. *Years of service in the job*: Repetitions and percentages show that sample members are representatives of all the few, medium, and, large categories of experience within the jobs in the banks' research sample, and this difference can benefit the study.

**3.2. Methods of information collection, measurement and analysis**

The analysis of the data acquired through the questionnaire was conceived in the context of the Likert Pentagon scale. The research's hypotheses are put to the test using descriptive and inferential techniques, and a random sample was chosen to present and evaluate the answers of the sample members and perceptions of the study variables and their subdivisions.

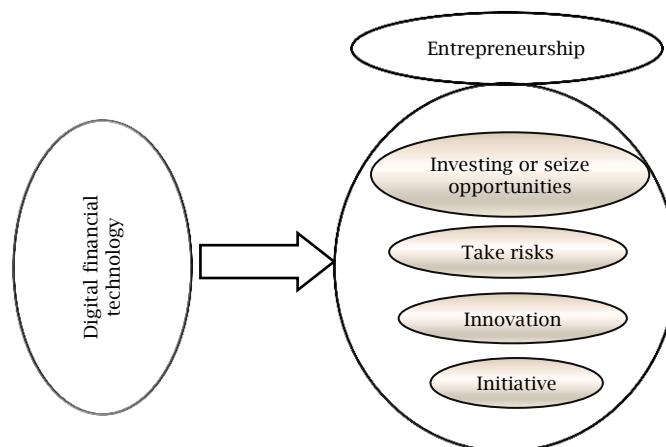
1. Validity tests using working analysis and stability testing through (Cronbach's Alpha).
2. Natural distribution using statistical methods by SPSS.v23.
3. Descriptive statistics using (arithmetic medium, standard deviation, and relative importance).

**3.3. Hypotheses**

The research is embodied in a key hypotheses that include:

- H1: *There is a relationship of statistically significant moral impact of digital financial technology on improving entrepreneurship.*
- H2: *There is a statistically significant moral correlation between digital financial technology improving entrepreneurship.*

**Figure 1.** Digital financial technology framework



## 4. RESULTS

### 4.1. Testing the validity of resolution (stability and honesty)

The stability test (half-retail) was conducted in order to find out the stability value of the resolution (scale), which means how stable the results are obtained (the scale gives the same results if it is reapplied); honesty has also been tested in a way (self-honesty) with the aim of knowing the sincerity

of the measure, which means whether the measure measures what is designed to measure it (the extent to which the test represents the behaviour to be represented).

It is clear from the values of the stability factors below that they are all larger than 0.68, so the scale is characterized by high stability, and the values of the self-honesty factor were high and close to the right one; this indicates that the scale is honest and consistent and is suitable for relying on the outputs obtained from it.

**Table 3.** The stability and honesty transaction values of the scale

<i>Dimension/ variable</i>	<i>Stability coefficient value (half retail)</i>	<i>The value of self-honesty factor (square root of the stability factor)</i>
Digital financial technology	0.90	0.94
Entrepreneurship	0.89	0.93
Total scale (resolution)	0.93	0.94

### 4.2. Statistics and ranking digital financial technology

Table 4 shows that paragraph (5) ranked first with an average of 4.13 and a relative weight of 82.52% (*Expanding the rollout of electronic financial services reduces related costs and provides new ways to increase funding*).

Paragraph (8) came in last place with an average calculation of 3.35 relative weight of 66.99% that the company's adoption of financial technology achieves a positive social and economic impact,

especially in poor countries. While the average of the independent variable was digital finance technology (3.83) and the relative weight was 76.64%.

The standard deviation was 0.908, which means that the sample members agree to the impact of technology on entrepreneurship through the exchange of information and data. This helps make it easier to access commercial banking services quickly, less expensive, more quality, and more accurate service delivery.

**Table 4.** Statistical analysis and ranking of digital financial technology

<i>No.</i>	<i>Arithmetic medium</i>	<i>Standard deviation</i>	<i>Relative weight</i>	<i>Ranking</i>
1	Commercial banks' reliance on financial technology aims to promote financial inclusion and develop financial markets by overcoming challenges related to access to market sectors and customer information.			
	4.08	0.75	81.75	<i>Third</i>
2	The subject of financial technology should be part of national strategies and financial and digital education while encouraging the exchange of knowledge between public and private sector actors.			
	4.05	0.72	80.96	<i>Fifth</i>
3	The application of financial technology enables the bank to take advantage of new paths of economic and financial development with the aim of promoting growth and alleviating poverty.			
	4.06	0.90	80.97	<i>Fourth</i>
4	Digital financial technology contributes to the investment of opportunities, innovation, and new ways to increase funding.			
	3.53	1.20	70.68	<i>Eighth</i>
5	Expanding the rollout of electronic financial services reduces related costs and provides new ways to increase funding.			
	4.13	0.84	82.52	<i>First</i>
6	Developing robust financial services and data infrastructure to support and sustain the benefits of fintech contributes to resilience and resilience to cyberattacks. It works to strengthen confidence in the financial system by protecting the integrity of financial data and services.			
	3.60	0.86	72.04	<i>Seventh</i>
7	The development and exchange of financial information support and improve feedback and follow-up. Achieving these entrepreneurial goals and achieving entrepreneurship will achieve profitability.			
	3.36	1.08	67.18	<i>Ninth</i>
8	The adoption of financial technology by the company achieves a positive social and economic impact, especially in poor countries.			
	3.35	1.11	66.99	<i>Tenth</i>
9	The adoption of fintech already contributes to a number of benefits, such as increased financial inclusion and financial inclusion: deepening financial markets, and improved cross-border payment, and remittance systems.			
	4.13	0.78	82.52	<i>Second</i>
10	New technologies enable the enhanced provision of financial services through the development of basic infrastructure such as telecommunications, digital, and financial infrastructures (e.g., broadband Internet services, mobile data services, data warehouses, payment, and settlement services). These infrastructures should enable efficient data collection, processing, and transmission; these are central to the advancement of financial technology.			
	4.04	0.84	80.78	<i>Sixth</i>
Medium after financial technology	3.83	0.908	76.64	

### 4.3. Statistics and ranking of entrepreneurship

Table 5 shows that paragraph (1) came first with an average of 4.12 and a relative weight of 82.33% (*Commercial bank management is interested in modifying and improving possibilities before others*). Paragraph (4) came in last place with an average calculation of 3.63 and a relative weight of 72.62% (*The management of commercial banks is interested*

*in modifying and improving the possibilities before others*), while the average of the dimension of the initiative 3.94 and the percentage 78.83%. The standard deviation is 0.63%, which means that the sample members agree that the management of commercial banks is interested in modifying and improving the possibilities and continuous development before others, an initiative to improve the quality of service provided by these banks.

**Table 5.** Statistical analysis and ranking of initiating dimension

No.	Arithmetic medium	Standard deviation	Relative weight	Ranking
1	The management of commercial banks is interested in modifying and improving the possibilities before others.			
	4.12	1.04	82.33	First
2	Commercial banks are working to be the first to provide services to customers.			
	4.05	0.81	80.97	Second
3	Commercial banks aim to be the first to use modern technology methods.			
	3.97	0.89	79.42	Third
4	The administration stresses the importance of continuous development and a good understanding of other businesses and initiatives.			
	3.63	1.12	72.62	Fourth
Average after swap	3.94	0.63	78.83	

Table 6 shows that paragraph (1) came first with an average of 4.12 and a relative weight of 82.53% (*Bank managers have high confidence that routine work will be boring if it is not new and risk-taking*). Paragraph (4) came in last place with an average calculation of 3.52 and a relative weight of 70.28%. (*The relevant departments constantly provide the magnitude of internal and external risks*

*to take the occasion and address it*), while the average of the dimension came risk tolerance of 3.91 and a relative weight of 78.33%. The standard deviation of 0.88% means that the sample members agree that the management of banks can achieve their objectives despite their high risks by taking basic or appropriate measures necessary in determining the risks facing banks.

**Table 6.** Statistical analysis and ranking of risk tolerance dimension

No.	Arithmetic medium	Standard deviation	Relative importance	Ranking
1	Bank managers have high confidence that routine work will be boring if it's not new and risk-taking.			
	4.12	0.76	82.53	First
2	Commercial banks take high risks in order to find new and innovative solutions.			
	4.05	0.85	80.7	Second
3	Managing banks can achieve their goals despite their high risks.			
	3.98	0.83	79.82	Third
4	The relevant departments constantly provide the magnitude of internal and external risks to take the occasion and address it.			
	3.52	1.08	70.28	Fourth
Average after-risk tolerance	3.91	0.88	78.33	

Table 7 shows that paragraph (1) came first with an average of 4.13 and a relative weight of 82.52% (*Banks make permanent adjustments to their services in order to improve them for the better*). Paragraph (4) came in last place with an average calculation of 3.35 and a relative weight of 66.99% (*Management helps banks to creative ideas and provides the right research environment for them*). While the average computational dimension

innovation came to 3.61 and a relative weight of 72.18%. The standard deviation was 0.66% which means that the sample members agree that innovation transforms new ideas and new knowledge into products and new operations through the use of new technology adopted by banks with the aim of providing a new service that helps to gain customer loyalty and achieve the goals of banks.

**Table 7.** Statistical analysis and ranking of the innovation dimension

No.	Arithmetic Medium	Standard Deviation	Relative Importance	Ranking
1	Banks make permanent adjustments to their services in order to improve them for the better.			
	4.13	0.84	82.52	First
2	Banks use the ideas of external experts to develop services.			
	3.60	0.86	72.04	Second
3	Banks are keen to implement new ideas quickly.			
	3.36	1.08	67.18	Third
4	Management helps banks to creative ideas and provides the right research environment for them.			
	3.35	1.11	66.99	Fourth
Average after innovation	3.61	0.66	72.18	

Table 8 shows that paragraph (1) came first with an average of 4.08 and a relative weight of 81.75% (*Banks invest in all the opportunities available to solve problems and provide the service to the fullest*). Paragraph (4) came in last place with an average of 3.53 and a relative weight of 70.68% (*Banks are interested in developing businesses through which we can create and invent new*

*opportunities*), while the average computational distance investment opportunities of 3.93% came in relative weight 78.54%. This means that the sample members agree that the management of banks seeks investment opportunities by providing new services as well as developing businesses that help solve the crises facing banks from investing opportunities.

**Table 8.** Statistical analysis and ranking of the investing opportunities

No.	Arithmetic average	Standard deviation	Relative importance	Ranking
1	Banks invest in all opportunities to solve problems and provide the best service.			
	4.08	0.75	81.75	First
2	Banks are constantly seeking or capturing opportunities that exceed our capacity for a current.			
	4.05	0.72	80.97	Third
3	Banks engage their members in specialized periodic meetings to discuss ideas and search for new opportunities.			
	4.05	0.90	80.97	Second
4	Banks are interested in developing businesses through which we can create and invent new opportunities.			
	3.53	1.20	70.68	Fourth
Average after-investing opportunities	3.93	0.66	78.54	

## 5. DISCUSSION

Recently, and specifically at the beginning of the twenty-first century, technology began to dominate all aspects of life, including industry, trade, transportation, and communications, until we reached the adoption of technology by individuals and companies to conduct their work in the most complete and equipped manner. Technology has contributed to opening the way for expansion and achieving leadership and creativity in financial institutions, specifically in commercial banks, as the expansion opened horizons for competition and excellence in providing the best service to individuals through finding electronic services that were introduced to banking systems which aim of facilitating transactions and creating a suitable environment for entrepreneurship. This study aims to clarify the relationship between digital financial technology and entrepreneurship represented by its dimensions of initiative, risk-taking, innovation and investment. The research sample is represented by the Iraqi commercial banks listed on the Iraq Stock Exchange in the year 2022. It was found through the results that were reached that the digital financial technology represented by the recently added banking services in banks saves effort, time, and the speed of completing transactions for customers, which is reflected in the encouragement of investment and opportunities. Also, digital financial technology contributes to decision-making and easy decision-making, and digital financial technology is a catalyst in the entrepreneurial environment. It was found through testing the research hypotheses that included the existence of a correlation and impact between digital financial technology and entrepreneurship.

## 6. CONCLUSION

This research aims to highlight the digital financial technology that has become the focus of attention of all economic institutions in general and banking institutions in particular. Data was collected using a questionnaire form designed in light of the five-point scale. We find that the advancement in digital

financial technology has contributed to the adoption of a large number of commercial banks, including the banks of a research sample, to provide e-banking services that save effort, time and speed of completion, and these findings help to encourage innovation and invest in opportunities that are essential to entrepreneurship in addition to lower costs, and it is available to customers Around the clock, which enables the bank to expand its customer base and achieve profitability in a very competitive business environment, and the use of digital financial technology to facilitate the tasks and role of the various regulatory bodies at the institutional level due to its ability to carry out all tasks at a tremendous speed and in a short time and correct information and maintain it from all methods improper. The use of digital financial technology to facilitate the tasks and role of the various regulatory bodies at the institutional level because of its ability to carry out all tasks at a tremendous speed and in a short time and correct information and preserve it from all improper methods, as well as digital financial technology helps in detecting the problems that banks suffer from and correcting their course after discovering their causes which helps decision-makers to remove these problems, and where digital financial technology is a catalyst for business activities because of its ability to store, process and retrieve large amounts of data and information accurately and quickly with the least possible time, effort and costs in work, the importance of maintaining the level of performance of commercial banks and working periodically on improving it and emphasizing on measuring the performance of commercial banks through the use of digital financial technology, as the results showed that there is an impact relationship between the independent financial variable, digital technology and the dimensions of entrepreneurship, especially innovation, which illustrates the important role of digital financial technology in improving entrepreneurship in the commercial banks. It should be noted that our study focused on emerging economies only, in addition to that, aspects of financial technology are still in their infancy.

So, future studies should include other aspects related to financial technology because the empirical studies of fintech are still in their inception. Our study is important for researchers in the future, so we must rely on our study to take research samples for other countries to determine the relationship between financial technology and the various variables that affect financial technology. Also, comparative studies should be done on the impact

of financial technology on the economies of developed countries. Last but not least, the development of technology and its impact on all sectors in general and banks, in particular, necessitates future researchers to consider the impact of the development of financial technology on individuals and institutions through a study of different variables and other aspects.

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