

The COVID_19 Pandemic's Effects on Fintech in Banking Sector

Haneen A. Al-Khawaja^{1,*}, Ismail Yamin² and Abdul Razzak Alshehadeh³

^{1,2}Faculty of Business, Amman Arab University, Amman, Jordan.

³Faculty of Business, Al Zaytoonah University of Jordan, Amman, Jordan.

Abstract: As a result of the effects of the COVID_19 pandemic, which has greatly affected the global economy, individuals have resorted to using financial technology and modern applications for financial transactions, which help reduce gatherings, given the centralization of the virus and the emergence of new, advanced pests. This paper aims to determine the impact of the COVID_19 pandemic on financial technology in the Jordanian banking sector. However, the quantitative approach was adopted, through electronic survey questionnaires being distributed to 2450 respondents from the population, which are all customers of Jordanian banks who use electronic banking services in the presence of the COVID_19 pandemic. As a result of analyzing 1930 resolution, it was found that the perception of the COVID_19 pandemic has a significant positive impact on Fintech in the Jordanian banking sector and that the perception of the COVID_19 pandemic has a significant positive impact on the dimensions of Fintech in Jordan which are (ease of use, reliability, responsiveness, assurance, interface design, and privacy). This study contributed to determining the extent to which electronic banking services reduce customer visits to branches according to social distancing. The paper explains how the development of technical services should go hand in hand with the bank's development strategies aimed at acquiring and retaining more customers. This paper recommends the need to improve the application of electronic banking services in proportion to customer satisfaction as much as possible.

Keywords: Fintech, Jordanian banks, ease of use, reliability, responsiveness, assurance, interface design and privacy.

1. INTRODUCTION

Since the beginning of March 2020, the financial markets have experienced around the world a period of unprecedented volatility the blur. It is liquidity crises and high ratio Non-performing loans, to a large exposure for real estate assets and cyber security threats, many challenges that the banking sector had to face locally and globally.

The outbreak of Coronavirus (COVID-19) has affected every economy of every country in the world due to reduced global economic activities and travel restrictions (McKibbin & Fernando, 2020). This is done through three methods, the first of which is production, financial impact on companies and markets, and disruption of the supply chain and market (Maital & Barzani, 2020). Secondly, the services sector is also affected due to COVID-19, as businesses are closed and millions of workers are about to face unemployment. Even other vital sectors will be affected such as tourism, travel, hospitality, and transportation services. (Malviya, Dehariya, & Sharma, 2014).

Governments, central banks, and regulators are currently looking at various ways to reduce the impact of the pandemic on the national, regional and global economies. We have seen financial institutions among them are banks that receive support in the form of liquidity injections and extension of

deadlines for submitting mandatory reports, and easing the strictness of the rules and regulations governing business activities as usual. These external support measures were coupled with a number of internal measures taken by banks, such as cost-cutting initiatives and activation of digital channels, and banks focused on their core banking activities. These steps proved effective in containing the impact of the crisis.

The pandemic of COVID_19 is causing severe economic and social disruption in all countries, including Jordan. Because Jordan's economy is slowing and youth and female unemployment rates are rising, this shock is expected to be more severe. According to projections, the pandemic would almost certainly cause a severe long-term global recession, owing in part to ongoing health risks. According to the report, the Jordanian economy is expected to contract by 3.9% in 2022. The Middle East and North Africa economy is expected to contract by 4.2%, while the global economy will contract by 5.3%.

In the wake of the COVID-19 pandemic, regulators have instituted new liquidity lines to ensure sufficient cash availability in the banking system and prevent adverse impact to the lending capability of banks. The Jordanian central bank has announced that it expects the banking system to undergo fundamental changes in response to the weaknesses highlighted by the COVID-19 crisis.

According to a June 2020 World Bank report, the negative impact is expected to affect a variety of sectors in Jordan,

*Address correspondence to this author at the Faculty of Business, Amman Arab University, Amman, Jordan; E-mail: h.alkhawaja@aau.edu.jo

particularly trade, remittances, tourism, and the service sector.

Countries all over the world have implemented various lockdown measures to stem the spread of COVID-19. It is clear that these measures have had an impact on economic activity in general, and on certain sectors in particular. While it is impossible to predict, the resulting job losses and bankruptcies are likely to put enormous financial (and other) strains on people and governments worldwide. COVID_19 compelled governments to implement a slew of monetary and fiscal policies in order to contain not only the virus's human consequences, but also its economic ones. As far as the monetary measures are concerned, the Central bank of Jordan (CBJ) has reduced most policy rates. In addition, the CBJ allowed banks to postpone loan repayments by customers in the impacted sectors. Together with the economic implications of COVID_19 on business activities, these measures will press the performance of the Jordanian banking sector (Jordan Strategy, 2022).

Additionally, banks' managements work to develop and renew electronic services in line with the presence of frequent closures and bans due to the Corona pandemic to attract more customers to their banks and meet their needs through confidence in the ability to provide high levels of privacy and security and facilitate banking transactions within their electronic fleet through the electronic bank website (portal) and phone applications and ATMs spread throughout the Kingdom.

However, few studies have looked at the impact of COVID_19 pandemic perceptions on the quality of electronic banking services in Jordan during the COVID_19 lockdowns. In addition, the service sector, especially the banks, has not received great fortune from in-depth studies. Therefore, this study fills that void by examining the various portions of the service section that are influenced by the expansion of the virus as the first study in Jordan.

2. LITERATURE REVIEW

The banking industry, which must meet the demands and difficulties that homes and businesses are encountering as a result of the rigorous lockdown procedures implemented to slow the spread of the coronavirus, has also been badly impacted by COVID_19. Many governments have granted moratoriums on credits and provided public guarantees on bank loans in order to assist consumers who are short on cash. The impacts of COVID_19 on the banking industry also include an increase in the use of payments via digital channels shift in customer manner, the easing of some arranging and superintendence requirements, as well as new difficulties with operational resilience and a rise in non performing loans. For businesses and the financial sector globally, the influence of COVID_19 on business and customer manner change is an issue of major concern (McKibbin & Fernando, 2020).

With the introduction of mobile banking services, new knowledge is required to fully comprehend the mind-boggling aspects of customer and bank relationships (Lu, Tzeng, Cheng, & Hsu, 2014). Customers are increasingly conscious of observing gaps among banks corresponding to their e-

service quality and how utilizing proficient innovations and updating/redesigning its status on an as needed basis. As a result, banks must develop powerful mobile strategies to attract and retain mobile clients, such as advancing the features, benefits, and value of mobile services. (Laukkanen, 2016). However, service quality has also been studied in the environment, and while studies have revealed fascinating new discoveries, they have received less attention in e-banking. (Ayo, Oni, Adewoye & Ibukun, 2016). Additionally, much of the study has tended to concentrate on variables that affect attitudes toward banking and the adoption of mobile banking, as well as from a relationship marketing viewpoint. (De Wulf, Odekerken-Schroder & Iacobucci, 2001) and (Shaikh & Karjaluoto, 2015).

The use of online services has increased as a direct result of COVID-19, despite the lockdown and social isolation imposed to prevent the virus's spread. China's transition to online purchasing is highlighted by (Craven, Liu, Mysore & Wilson, 2020) according to the authors, they said that customers' changing preferences are not likely to go back to pre-outbreak standards. The business models of banks will be significantly impacted by this probable change in client purchasing preferences, with distribution channels being one of the most affected banking dimensions (Pop, 2020).

By February 2020, the COVID_19 pandemic had reached the majority of nations, despite the governments of each nation including Jordan imposing stringent restrictions to halt the virus' spread. As can be predicted, behaviors like social estrangement have disrupted the economies of many nations, highlighting the urgent need for adjustments in many facets of society globally. There is no exception in the financial sector. The pandemic has pushed customers to complete banking transactions remotely, that is, without getting in touch with the bank, in Jordan (as it has in many other nations).

These financial services ought to support contactless transactions and be accessible, especially during a pandemic, according to user perceptions. Additionally, their use must to carry after COVID_19 is finished. Numerous studies have demonstrated that mobile and e-banking, (Altobishi, Erboz, & Podruzsik, 2018), (Hammoud, Bizri, & El Baba, 2018), (Howcroft, Hamilton, & Hewer, 2002), (Malviya, Dehariya, & Sharma, 2014), (Uddin & Ahmmed, 2018). With the help of a bank can manage a customer's bank account and financial transactions through mobile banking by using a wireless banking network and a device such as a mobile phone (Luarn & Lin, 2005).

An individual's psychosomatic requirements, as well as the extent to which their expectations are gathered have a significant impact on their mental health, including their personal and social well-being and development. (Deci & Ryan, 2000). Therefore, a mobile banking service must be compatible with user needs, lifestyle, and employment in order to be widely embraced and utilized. (Bidar, Fard, Salman, Tunga, & Cheng, 2014), (Lin, 2011), but also in the manner in which they control their financial cooperation (Mohammadi, 2015). The perceived value of mobile banking, or the advantages of using it, such as time and money savings (Farah, Hasni, & Abbas, 2018), inspires the impression that there is a benefit to using it over other banking services (Laukkanen,

2016). Such a perception can increase a bank's customers' use and satisfaction, as well as their loyalty to the bank (Baabdullaha, Alalwan, & Rana, 2019). Lack of trust in the bank or the application could be a barrier to the adoption of mobile banking (Karma, Ibrahim, & Ali, 2014), (Lin, 2011). Even if the application is not used frequently, there may be a premier scarcity of confidence in its ability to perform adequately or be reliable, safe, and convenient for the user (Afshan & Sharif, 2016), (Al-Omouh, Yaseen, & Qirem, 2022), (Siyal, Ding, & Siyal, 2019), (Zhou, 2012).

The crisis of the spread of the Corona virus has provided an opportunity for banks to work on increasing the use of electronic banking services and activation rates, particularly following the kingdom's decisions to ban movement, reduce the number of working hours in banks, and set withdrawal and deposit limits to reduce overcrowding.

The study of Al-khawaja and colleagues in 2020 constructed a model of six independent variables which are Ease of use, Reliability, Responsiveness, Assurance, Interface design, Privacy, the mediating variable (electronic banking application) and the dependent variable (customer satisfaction). The study found that Electronic Banking Application directly impacted customer satisfaction and that this effect is statistically significant. According to the Corona virus epidemic, the research directs banks to adopt electronic dealings in their banking services at the coming stages due to the social distancing, safety, privacy and speed of performance without any congestion and gatherings that may negatively affect the health of customers. (AL-khawaja, Ngah, & Alzubi, 2020).

The Central Bank of Jordan measures aimed at containing the repercussions of the impact of the emerging corona virus on the national economy as following: It poses challenges to the national economy, and the Central Bank decided to take a package of measures precautionary measures aimed at containing the negative repercussions of the COVID_19 virus on the performance of the local economy, allowing banks to restructure consumer and business debts, in particular, sums up these processes. The medium-sized and small businesses that have been impacted by the virus' effects, in addition to providing the national economy with additional liquidity worth 1050 million dinars by lowering the required cash reserves, lowering financing costs, and extending deadlines for current and upcoming facilities for the economic sectors, such as: As a result of the Central Bank's program to finance and support industries, it now includes medium-sized and small businesses. Economic, supporting the methods used by the Jordanian corporation to guarantee loans by lowering commissions increasing the percentage of insurance coverage for the domestic sales guarantee program and the company's activities (Central Bank , 2022).

Aldiabat et al. (2022) show that variables related to consumer perceptions of the pandemic's impact on their lifestyle had a direct and positive impact on attitudes toward the internet and mobile banking. Other factors, such as the security of using online and mobile banking services and phones, contributed to this increase in positive attitude. The trust in mobile and internet banking has administrative and social consequences. (Aldiabat, et al., 2022).

The research gap on the impact of COVID_19's effect on the Electronic Banking Services' Quality of Jordanian banks or in a developing country is regarded as serious. In addition, there is high business rivalry amongst banks that seek to develop their electronic banking offerings and provide acceptable electronic services quality. Moreover, Jordanian banks are interested in learning from studies that investigate issues of quality and how COVID_19's effect impact electronic services banking quality.

Based on what was mentioned in the previous studies, the study hypotheses can be formulated as follows:

H1: The perception of the COVID_19 pandemic will have a positive significant effect on Fintech in Jordanian banking sector.

This main hypothesis is branched into a group of subhypotheses which are as follows:

H1.1: The perception of the COVID_19 pandemic will have a positive significant effect on Ease of use.

H1.2: The perception of the COVID_19 pandemic will have a positive significant effect on Reliability.

H1.3: The perception of the COVID_19 pandemic will have a positive significant effect on Responsiveness.

H1.4: The perception of the COVID_19 pandemic will have a positive significant effect on Assurance.

H1.5: The perception of the COVID_19 pandemic will have a positive significant effect on Interface design.

H1.6: The perception of the COVID_19 pandemic will have a positive significant effect on Privacy.

3. METHOD

The development of financial technology is one of the most important developments that individuals have been able to benefit from during the COVID_19 pandemic. Customers will be able to access financial services more efficiently and quickly than traditional businesses, especially during the COVID_19 pandemic due to health protocols. Nathan and colleagues (2022) the impact of the COVID_19 crisis on Vietnamese consumers' financial health. In Vietnam, perceived ease of use, perceived usefulness, trust, brand image, government support, user innovation, and attitude were found to be significantly related to fintech adoption. (Nathan, Setiawan, & Quynh, 2022).

Also, Tut (2020) demonstrated the effects of the COVID_19 pandemic on financial institutions and consumer adoption of fintech in payments in Kenya, as the pandemic has accelerated adoption and increased concentration of payments through finTech According to the findings, FinTech not only partially mitigated the negative impact of the COVID_19 pandemic in the first quarter, but the pandemic also accelerated consumer adoption of finTech and digital onboarding, particularly in the third and fourth quarters. (Tut, 2023).

While, Tripalupi & Anggahegari (2020) stated that despite the impact of the COVID_19 pandemic, fintech growth during the COVID_19 pandemic remained relatively stable. Including increased use of financial technology through online shopping, payments and loan platforms; accelerated

digitization of financial services; slowing economic activity various risks arose. (Tripalupi & Anggahegari, 2020).

As, Meh and colleagues (2021) noted in a study that relied on mobile application data from 74 countries to document the effects of the COVID_19 pandemic on the adoption of digital finance and financial technology. (Meh, et al., 2021) It found that the spread of COVID_19 and related government shutdowns increased the relative rate of daily downloads of financial mobile applications in the sample countries by 24 to 32 percent. Whereas, Sansa (2020) revealed that there was a positive, statistically significant relationship between COVID_19 confirmed cases and all financial markets (Shanghai Stock Exchange and New York Dow Jones) from March 1, 2020 to March 25, 2020 in China and the USA (Sansa, 2020).

This means that COVID_19 has had a significant impact on the financial markets of China and the USA. Also, Meh and colleagues (2021) noted of the impact of the COVID_19 pandemic on digital finance and fintech adoption (Meh, et al., 2021). Using data from a representative global sample of mobile apps, we discovered that the spread of COVID_19 and related government shutdowns significantly increased the rate of financial app downloads. The study of Alshehadeh and Al-khawaja in 2022 found that Financial technology has changed the structure of overall financial services, as well as the diversity and style of financial services for Jordanian commercial bank clients, and its tools have a significant impact on reinforcing financial inclusion indicators. Adopting effective and modern financial and technological strategies that provide marginalized social groups and small and medium enterprises is advised. (Alshehadeh & Al-khawaja, 2022).

Javed (2020) has focused on the impact of COVID_19 on the service sector in Pakistan, and different published reports are being considered for this aim. Tourism, hospitality, and transportation have been particularly hard hit in the service sector. Millions of SMEs may fail to survive in the long run due to a lack of cash flow, and SME revenues will also fall (Javed, 2020). While Abdullah (2020) demonstrated that the use of information technology in the age of big data and cloud computing has resulted in the trend of electronic payments via financial technology, or FinTech. (Abdullah, Zeebaree, Jacksi, & Zeabri, 2020).

Al-khawaja in (2022) showed the concept of fintech and how it began and where to arrive, while that the business world witnessed a new revolution represented by the emergence of crypto currencies and how the world run fast towards them, followed by the detailed view about blockchain. (Al-Khawaja, 2022). One of the most popular FinTech applications in Indonesia is Go-Pay in the startup Gojek app. User experience (UX) was analyzed using a user experience questionnaire consisting of 6 (six) variables (attractiveness, like-ability, efficiency, dependability, motivation, and novelty). Average scores were obtained in the following order: competence, dazzling, motivation, attractiveness, dependability, and novelty.

To achieve the research objectives, this study adhered to the analytical descriptive approach which is used to the purpose of examining the impact of COVID_19 pandemic on quality

of electronic banking services. The data collection method used is the questionnaire survey as it is one of the most effective means of gathering quantitative data. The research data, collected via the survey questionnaire, was analysed using Statistical Package for the Social Sciences (SPSS) version 24.0. The questionnaires were distributed manually and electronically to customers of the banks who performed electronic banking. The study population refers to the group of people whom the research wants to make assumptions about and possess common characteristics and is the focus of the research study (Frankel & Walen, 1993). In this study, the population of reference comprises the customers of the Jordanian banks.

This population sample was chosen since 46% or approximately 9.3 million of Jordan's total population (The Institute of Public Administration, 2022), Moreover, electronic survey questionnaires were distributed to 2450 respondents from the population, which are all customers of Jordanian banks who use electronic banking services in the presence of the COVID_19 pandemic, and 1930 questionnaires out of 2450 questionnaires were collected from the respondents and were used in the results aggregation. The investigation aims to determine the effects of the independent variable (perception of the COVID_19 pandemic) on the dependent variables (quality of electronic banking services).

4. RESULTS

To identify the likelihood of affirmative action and acceptance of this hypothesis, the researcher used multiple regression analysis to test this hypothesis, analyzing the variability of regression as shown in the following table:

The results of Table (1) indicate a positive linear correlation. That is, there is a statistically significant effect. To visualize the COVID_19 pandemic on fintech in the Jordanian banking sector. The correlation coefficient ($R = 0.712$) indicates a statistically significant relationship between the independent variable (perception of the COVID_19 pandemic) and the dimensions of the dependent variable (financial technology).

The branching hypotheses of this hypothesis have been subjected to simple linear regression analysis, and the results are as follows:

The results are presented in Table (2) Indicate a statistically significant impact of the perception of the COVID_19 pandemic in the dimensions of financial technology represented in (Ease of use, Reliability, Responsiveness, Assurance, Interface design, and Privacy) in the Jordanian banking sector.

5. DISCUSSION

This paper sought to determine The COVID_19 pandemic's effects on fintech in Jordan's banking sector, as the COVID_19 pandemic has significantly affected the financial sector and the opportunity to deal with financial technology and increase people's conviction in it, in details: the perception of the COVID_19 epidemic has a significant positive impact on ease of use with Standard error (0.036), the perception of the COVID_19 epidemic has a significant positive impact on reliability with Standard error (0.029), the perception of the COVID_19 epidemic has a significant positive

Table 1. Multiple Linear Regression Analysis of the Main Hypothesis.

Independent Variable	Model Summary		ANOVA			Coefficients				
	R	R ²	F	DF	Sig F*	Variables	B	Standard error	T	Sig t*
<i>The perception of the COVID_19 pandemic</i>	0.217	0.536	186.658	4	0.000	Ease of use	0.364	0.036	4.389	0.000
						Reliability	0.264	0.029	3.561	0.009
						Responsiveness	0.267	0.046	3.473	0.008
						Assurance	0.316	0.038	3.489	0.003
						Interface design	0.7.0	0.007	7.60.	0.000
						Privacy	0.306	0.006	0.764	0.000

*The effect is statistically significant at the level ($\alpha \leq 0.05$).

Table 2. Impact Test Results H1.1, H1.7, H1.3 H1.4, H1.5 & H1.6.

I.V	D.V	Model Summary		ANOVA		Coefficients			
		R	R ²	F	Sig F*	B	Standard Error	T	Sig T*
<i>The perception of the COVID_19 pandemic</i>	Ease of use	0.642	0.412	86.644	0.000	0.431	0.036	14.785	0.000
	Reliability	0.681	0.443	81.486	0.000	0.458	0.034	17.631	0.000
	Responsiveness	0.635	0.450	79.495	0.000	0.419	0.041	16.672	0.000
	Assurance	0.672	0.472	89.682	0.000	0.426	0.039	14.647	0.000
	Interface design	0.681	0.425	90.481	0.000	0.491	0.042	15.632	0.000
	Privacy	0.613	0.463	76.196	0.000	0.463	0.046	16.486	0.000

*The effect is statistically significant at the level ($\alpha \leq 0.05$).

impact on responsiveness with Standard error (0.046), the perception of the COVID_19 epidemic has a significant positive impact on assurance with Standard error (0.038), the perception of the COVID_19 epidemic has a significant positive impact on interface design with Standard error (0.042), the perception of the COVID_19 epidemic has a significant positive impact on privacy with Standard error (0.046).

Previous empirical research has focused on the Jordanian context in Assessment of the relationship between the impact of COVID_19 and the dimensions of quality of electronic banking services. This study is the first of its kind to do so, and this study has contributed to determining the extent to which electronic banking services have reduced customer visits to branches according to social distancing. Explaining how the development of technology services should go hand in hand with the bank's development strategies aimed at gaining and retaining more customers. It also worked to open the way for other research in this field by providing insights and suggestions to banks on how to increase their electronic banking strategies to give a high level of electronic system to their customers. This paper recommends the need to improve the application of electronic banking in proportion to customer satisfaction as much as possible. It attempts to understand the financial behavior of banks and what affected it, and makes suggestions for the total transformation of banks to deal electronically with their customers and to develop the electronic network to take advantage of the loss due to this

epidemic or others. And linking a bridge of communication between customers and the bank to understand their needs and try to meet them, thus obtaining their loyalty to the bank.

CONCLUSIONS

This paper aimed to determine The COVID_19 pandemic's effects on fintech in Jordan's banking sector, and the results of this paper showed that the perception of the COVID_19 pandemic has a significant positive impact on financial technology in Jordan. This result is consistent with the study by (Nathan, Setiawan & Quynh, 2022) and showed that the perception of the COVID_19 epidemic has a significant positive impact on the dimensions of financial technology in Jordan. Where the variable perception of the COVID_19 epidemic took the following order in the positive effect on the determinants as follows: The positive effect of the perception of the COVID_19 epidemic on reliability had the highest effect, as for the positive effect of perception the COVID_19 epidemic on ease of use, it came in the second place, followed by the positive impact of perception the COVID_19 epidemic on the assurance, and then came the positive impact of perception the COVID_19 epidemic on the interface design, and in the last and least place came equally between privacy and responsiveness to the positive impact of perception the COVID_19 epidemic.

The results showed that banks in Jordan possess an advanced and secure technological structure that allowed them to pro-

vide most of their services electronically without the need for customers to visit bank branches. The continuity of the Jordanian banking sector during the closure period by providing liquidity to various sectors, including the external sector, which led to the continuity of the flow of exports and imports and contributed to the continuity of the economy as a whole. Banks have also rushed to support national efforts to confront the Corona crisis the high response of banks confirmed that they are a safety valve for the economy, and that they are strong national institutions with the ability to withstand various challenges as The Central Bank of Jordan took banking measures to protect the local economy at the time of closure due to Covid-19, including the following: The Central Bank of Jordan operates all payment, settlement and clearing systems from a distance During the period of collapse, the Central Bank of Jordan issued a circular in which it publicly assured banks and payment service providers to continue providing basic financial services to their users without any interruption. The Central Bank of Jordan recommended using electronic wallets via mobile phones and enabling payment service institutions to provide electronic wallet service to their customers, merchants and institutions remotely and at no cost to enable users to conduct payment and money transactions. Providing electronic channels to enable users to transfer their remittances abroad in an integrated electronic manner at any time and from anywhere without the use of cash or the need for a physical presence at the sites of financial institutions, providing new technologies such as QR code technology that supports accepting electronic payments within points of sale (POS) Used by merchants and retail sectors, by relying on a standard issued by the International Technical Authority (EMVCO). Enabling users to make cash deposits and withdrawals from electronic wallets through ATMs of the largest banks in the Kingdom without the need to use cards (without a card). Transfers and receiving salaries and aid from the National Aid Fund and any other government aid programs electronically and without restriction in time and place to do so Allowing banks to postpone loan installments or restructuring them, granting some flexibility in how to meet precautionary capital and liquidity requirements and suspending compliance with the application of some precautionary laws and regulations, including postponing Timetable for implementing Basel standards, reducing the capital adequacy ratio for banks, removing additional capital requirements on housing loans, reducing risk weights for exposure to small and medium-sized companies, raising the maximum loan portfolio allocated to construction companies, reducing mortgage interest rates, suspending restrictions on Accounts of customers whose checks have been returned due to insufficient funds, directing banks to consider providing additional assistance to customers, including a review of current fees for financial services. (Central Bank, 2022).

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