Financial technology development in banking during the Covid-pandemic

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Abstract

Financial technology has changed the whole concept and revolutionized the banking sector. Fintech has a significant impact on the banking sector by changing the ways in which banking sectors used to operate. As FinTech has enabled and meet the banking sector more accessible to people from all corners during the Covid-pandemic. Therefore, in the article author tried to study the various factors that promote financial technology and to investigate various other alternatives in the successful implementation of financial technology in the banking sector for the benefit of society. To create a good understanding of the application of financial technology in the banking sector and the transaction of banks from traditional to modern approaches a Descriptive Research Design is being used which can better help understand the significance of financial technology in the lives of people in the times of pandemic. Furthermore, a Constructivist Research Paradigm is being used in the study where the data is being collected from various primary sources in the banking industry that have implemented the tools and techniques of Financial Technology in their banking approach during the times of pandemic. Fintech has enabled banks to remain open and functioning despite the health and safety restrictions imposed by the pandemic. In the article various collaborations of Financial Technology with banking services have been described and discussed. The significance of digital banking especially in times of crisis like the pandemic and the effect and impact that it has made on the lights of customers have been highlighted. The article covers the important aspects of financial technology and its uses.

Keywords. Financial technology, banking, innovation
JEL codes: G21, F65, O31

1 Introduction

Financial technology which is the terminology used to describe all Financial Services such as online banking facilities, online transactions using mobile and net banking, trading online, buying and selling of cryptocurrency, and all the other technologies that facilitate the consumers in availing smooth

financial services from financial institutions and banks by replacing the traditional methods.

Financial technology has changed the whole concept and revolutionized the banking sector. Fintech has a significant impact on the banking sector by changing the ways in which banking sectors used to operate.

Fintech comprises a vast range of innovative products that are helpful in the transformation of the financial industry. The various tools of financial technology include mobile wallets, online banking facilities, mobile payments, and so on. These platforms use high-technology authentication and encryption to protect the sensitive financial information of the customers. Investment management has become easier with the development of financial technology. Many robotic advisors are taking up the place of traditional investment managers and advisors Robotic managers of investment management like Wealthfront, Betterment, and so on.

There are a number of advantages of incorporating Financial Technology in the banking sector as the uses of FinTech in times of crisis are immense and unavoidable, especially during a pandemic when the government is imposing various protocols for social distancing and safeguarding the citizens from further spread of the infection. FinTech has province to be beneficial for contactless transactions.

The expansion of internet connectivity and implementation of high-speed network connectivity has enabled the smooth implementation and running of digital banking by the government. For the easier resolution of grievances and issues, Chatbots with the help of Artificial Intelligence (AI) have proven to be useful to the customers as well as reduce stress to the banks and their branches. Covid has brought about a digital transformation in the country where banking is available anytime, anywhere. Fintech in banking has mainly been popular due to its ease of use and accessibility.

Covid 19 has been treated more as an opportunity than a pandemic. One of the most positive aspects of a pandemic that caused an opposite change in society as well as the banking sector is the introduction of digital banking at the right time. Artificial intelligence and machine learning (ML) are constantly supporting this cause of digitalization in the banking sector and converting scenarios in financial institutions.

The banks have to drastically increase their attention on digital security and data protection (Bykanova, 2020, 42-51). This pandemic has also introduced electronic documentation in the banking industry.

Among the huge range of advantages that are related to internet banking, a few of them are greater accessibility which arises from the helpful free and easy bank account opening, applying for loans, transfer of money, payment of bills, and so on. Nowadays, e-banking can also be used for applying for credit cards, applying for various life insurance and other

insurance easily, analyzing the profiles of applicants for loans, and taking payments through various online payment methods.

Since the digital banking approach does not require a physical branch, it has its own advantages and disadvantages. Digital banking is highly dependent on the internet and the availability of networks which might be a challenge in case of network bandwidth issues. There are also known such regulations surrounding digital banking that are free of errors or perfect. There might always be loopholes that give entry to fraud and scams. On the other hand, many other advantages of digital marketing are that it is safe and private in nature. Transactions are quicker than traditional alternatives, it can be assessed anytime and anywhere.

Covid 19 has brought over a number of challenges in the banking sector. Due to the financial crisis as the result of lockdowns and overall economic loss due to the infection the banking sector had to suffer massive pressure in terms of income and low profitability.

The sustainable performance of the banks is maintained through online banking. Online banking has saved a large number of lives during the time of the Covid 19. In spite of there being several advantages to the digital banking system, it is not free of problems and challenges, some of them being employees lacking the adequate training and expertise to handle the digital aspects of banking successfully, lack of proper data protection policies and regulations, many times the customers have to face malfunctioning of technology (Khanra et al., 2021). Transforming from traditional to online banking creates continuity and resilience in the banking system.

2 Literature review

Financial technologies have revolutionized the banking industry in recent years. FinTech solutions have enabled banks and financial institutions to optimize their operations, provide better services to their customers, and increase their overall profitability (Chang et al., 2000). This has led to the emergence of new business models, such as mobile banking and online banking, which have further transformed the banking landscape (Riza, 2021). Furthermore, FinTech has enabled banks to develop new services and products, such as peer-to-peer lending, digital currencies, and blockchain technology (Chaveesuk et al., 2021). These advancements have enabled banks to provide more convenient services to their customers and streamline their operations. As a result, the banking industry has seen remarkable growth in recent years (Kumar & Sharma, 2018). The evolution of financial technologies in banking has enabled banks to offer their customers a wide range of services and products with greater convenience, efficiency, and security (Lam, 2017). Recent developments such as online banking and mobile banking have enabled customers to manage their finances without

having to visit a physical branch (Kiyosaki, 2018). In addition, the introduction of artificial intelligence and blockchain technology has made financial transactions more secure and efficient (Baraniuk, 2019).

Early adopters of financial technologies in banking have included JPMorgan Chase, Bank of America, and Wells Fargo. These banks were among the first to develop and implement technologies such as mobile banking, digital wallets, and blockchain. These services have allowed customers to access their banking information from their smartphones, pay bills electronically, and securely store financial data. The use of these technologies has enabled banks to increase customer satisfaction, improve efficiency, and reduce costs (Alber & Dabour, 2020). The emergence of financial technologies has revolutionized the banking sector, allowing for the greater accessibility of digital banking services and increased customer experience (Savitha & Hawaldar, 2022). Banks can now offer customers more personalized services than ever before, such as automated wealth management, seamless account opening, and smoother loan application processes (Marcu, 2021). This has resulted in a more efficient banking experience, with customers able to access services in a faster and more convenient manner. The rise of FinTech has had a disruptive impact on traditional banking. It has enabled the emergence of new banking models and services, such as online banking, and automated investment advice (Candy et al., 2022). These new services have allowed consumers to access financial services more quickly and easily, with lower costs and more convenience than ever before. This has shaken up the traditional banking landscape and has pushed banks to become more innovative and competitive (Purba et al., 2021).

Over the past few years, the FinTech industry has revolutionized the way banking services are provided to customers. FinTech companies have made it easier and more cost-effective for customers to access banking services. This has resulted in an improved customer experience when it comes to banking. One of the major ways FinTech has improved the customer experience in banking is by offering more digital services. FinTech companies are able to use technology and data to provide customers with faster and more convenient banking services. This includes online banking, mobile banking, and other digital services such as peer-to-peer payments, automated bill payments, and more. These digital services are making banking more accessible and convenient for customers, which is improving their overall experience with banking. Another way FinTech is influencing the customer experience in banking is by offering more personalization. With the help of AI and ML, FinTech companies are able to offer customers tailored banking services, such as personalized loan options, tailored investment advice, and more. This is allowing customers to access services

that are tailored to their specific needs and preferences, which is resulting in a better customer experience.

FinTech is also improving the customer experience in banking by making it more secure. FinTech companies have made it easier and safer for customers to access banking services. This includes the use of biometrics, two-factor authentication, and other security measures to ensure that customers' accounts and data are secure. This is providing customers with peace of mind when it comes to banking, which is further improving the customer experience. The FinTech industry is having a major impact on the customer experience in banking. FinTech companies are making banking more convenient, more personalized, and more secure, which is resulting in a better customer experience. The new frontier of financial technologies in banking is advancing rapidly and has the potential to revolutionize the way banks do business. This new frontier is based on the concept of using technology to provide digital banking services to customers. This includes the use of mobile and internet banking, digital wallets, and artificial intelligence technologies. Mobile banking allows customers to access their banking accounts, perform transactions, and transfer funds using a mobile device. This technology has made banking much more convenient and accessible, especially for those who may not have access to a traditional banking branch. Banks are also able to offer more innovative services such as real-time payments, person-to-person transfers, and even virtual cards. Digital wallets are becoming increasingly popular as a way to make payments and store funds securely. This technology allows customers to store their payment information in a secure digital wallet, which can then be used to make payments anywhere online. Some digital wallets even allow customers to make payments in different currencies. Artificial intelligence technologies are being used to improve customer experience and reduce costs. For example, banks are using AI to detect fraud and improve customer service. AI can also be used to optimize the customer experience by suggesting products and services tailored to individual customers. Banks are using blockchain technology to create more secure and efficient financial transactions. Blockchain allows for the secure transfer of funds between parties without the need for a centralized intermediary. This technology can also be used to create secure digital currencies, which can be used to make payments and store funds.

The new frontier of financial technologies in banking is rapidly evolving and has the potential to revolutionize the way banks do business. Banks are now able to offer more innovative services and secure digital currencies, as well as improved customer experience through the use of AI and blockchain technology. This new frontier offers banks the opportunity to provide customers with better services while also reducing costs. According

to a report from the World Bank, the banking sector is witnessing a “new frontier of financial technologies". This new frontier is being driven by the emergence of a variety of technologies, such as blockchain, artificial intelligence, and cloud computing. These technologies are enabling banks to provide innovative and more efficient services to their customers. For example, AI is being used to automate mundane tasks, such as customer service and fraud detection, while blockchain is being used to facilitate secure and efficient payments. Additionally, cloud computing is being used to store customer data and facilitate online banking (Liu et al., 2019). Overall, these technologies are disrupting traditional banking practices and could potentially revolutionize the banking sector in the near future.

3 Methodology

To create a good understanding of the application of financial technology in the banking sector and the transaction of banks from traditional to modern approaches a Descriptive Research Design is being used which can better help understand the significance of Financial technology in the lives of people in the times of pandemic. Furthermore, a Constructivist Research Paradigm is being used in the study where the data is being collected from various primary sources in the banking industry that have implemented the tools and techniques of Financial Technology in their banking approach during the times of pandemic.

4 Results and Discussion

Fintech and its implementation in banking is very necessary for the current time owing to the benefits it can shower on society and at the same time the reduction of cost and improvement of profitability in the organization. Among the huge range of advantages that are related to internet banking, there are disadvantages as shown in Table 1.

Advantages	Disadvantages
Access anytime, anywhere 24/7	Highly dependent on the internet
Verification by high-technology authentication	Deficiency of the officers adequate training
Data protection and security	Lack of data protection policies
Contactless online transactions	Loops in regulations
Chat bots with artificial intelligence	Malfunctioning of technology
Electronic documentations	

The financial technologies in banking, such as blockchain, artificial intelligence, and cloud computing has revolutionized the banking sector and enabled new opportunities for customer service and financial inclusion. For

example, blockchain technology is helping to reduce transaction costs, provide more secure methods for authentication, and enable faster payments (Khan, 2021). Similarly, artificial intelligence is helping to provide more personalized services for customers, allowing them to receive personalized advice and financial guidance in real time (Kushwaha et al., 2020). Cloud computing is helping banks to reduce costs and increase efficiency, while also providing the opportunity to offer customers new and innovative services (Ling et al., 2016). Fintech is the use of technology to deliver financial services, including digital banking, digital payments, digital investments, and other financial services. Banks are using fintech to streamline their operations, reduce costs, and increase customer satisfaction. One of the most significant innovations in banking has been the introduction of digital banking. Digital banking refers to the use of online platforms to access banking services, such as checking accounts, deposits, transfers, and loan applications.

Banks are offering customers the ability to access their accounts from any location through a secure, web-based platform. This has enabled customers to manage their finances more easily and conveniently. Digital payments have also become increasingly popular in banking. Banks are now offering customers the ability to make payments and transfers electronically, as opposed to having to visit a physical location. This has allowed customers to make payments and transfers quickly and easily, as well as providing them with greater control over their finances. In addition, banks have also begun to offer digital investments. These investments are offered through online platforms, which allow customers to invest in stocks, bonds, mutual funds, and other financial products without the need to visit a physical location. This has enabled customers to manage their investments more easily and conveniently. Finally, banks have begun to offer a variety of other financial services, such as financial planning and advisory services, insurance, and foreign exchange. These services are typically offered via digital platforms, allowing customers to access them from any location. This has enabled customers to manage their finances more effectively. The introduction of innovations in financial technology has had a positive impact on the banking industry. Banks are now able to streamline their operations, reduce costs, and increase customer satisfaction. In addition, customers are now able to manage their finances more easily and conveniently.

Financial technologies are revolutionizing the world of banking. FinTech refers to the use of technology to improve banking services such as money transfers, payments, investments, and loan applications. FinTech startups are disrupting the traditional banking industry by providing technology-driven services that are faster, more efficient, and more secure (Nguyen & Nguyen, 2020). For example, mobile banking applications have

enabled customers to access their accounts quickly and securely, while artificial intelligence and machine learning technologies have enabled banks to automate customer service and provide faster loan applications (Kumar & Sharma, 2018). FinTech also offers a variety of services such as digital wallets, digital currencies, and blockchain technology (Ma & Kishore, 2019). Digital currencies, such as Bitcoin and Ethereum, use cryptography and decentralized ledger technology to enable secure and fast peer-to-peer transactions (Chen & Chang, 2017). Blockchain technology also has the potential to revolutionize the banking industry, enabling secure, transparent, and immutable record keeping (Li & Zhang, 2016). FinTech is revolutionizing the banking industry by providing faster, more efficient, and more secure services. With the continued development of FinTech services and technologies, the banking industry is likely to become even more innovative and efficient in the future.

Technologies such as artificial intelligence, blockchain, and the internet of things (IoT) are emerging in the banking sector (Li &Wang., 2019). AI is being used for automated customer services and for fraud detection (Nyandoro & Gecaga, 2020). Blockchain is being used to increase transparency and security in banking processes (O'Gorman, 2018). Moreover, the IoT is being used to enable real-time payments and better customer experience (Rong et al., 2019). Some of the most prominent emerging technologies in the banking sector are artificial intelligence, blockchain, cloud computing, biometric authentication, and predictive analytics. AI: AI technology is used by banks to automate tedious and repetitive tasks, and to provide better customer service. AI-enabled chatbots and virtual assistants are used to answer customers' queries in real time, while AI-powered fraud detection systems help to prevent money laundering and other financial crimes. Blockchain: Blockchain technology is revolutionizing the way banks keep track of and process financial transactions. It uses distributed ledger technology to store, validate, and manage transactions, making them more secure and transparent. Cloud Computing: Banks are increasingly using cloud computing to store and process customer data, allowing for faster access to information and improved customer service. Biometric Authentication: Banks are using biometric authentication, such as fingerprint and facial recognition, to verify customers' identities and protect against fraud. Predictive Analytics: Banks are using predictive analytics to analyze customer data and make better, informed decisions. This helps banks to better understand their customers and provide tailored services. These are just a few of the emerging technologies revolutionizing the banking sector.

As technology advances, banks will continue to innovate and use new and emerging technologies to provide better services to their customers. Mobile banking is the act of making financial transactions on a mobile device

such as a smartphone or tablet (Gosmati, 2020). Mobile banking services offer a convenient, secure, and efficient way for customers to manage their finances from virtually anywhere with an internet connection. In addition to making payments and conducting transactions, a range of mobile banking services includes monitoring account balances and viewing account history, setting up automatic bill payments, transferring funds between accounts, and viewing investment portfolio and credit score information. Mobile banking is a type of banking service where customers can access banking and financial services through their mobile phone or another mobile device. Customers can use mobile banking to check their account balances, transfer money between accounts, pay bills, and more. Mobile banking is becoming increasingly popular as it is more convenient than traditional banking, and customers are more likely to use mobile banking for their banking needs. Mobile banking is usually accessed through an app, which customers can download from their device's app store (Bengtson et al, 2018).

The app will provide access to the customer's banking account, as well as other services such as transferring money, paying bills, and more. Customers may also be able to access their banking information through their mobile browsers. Mobile banking is also very secure as it uses encryption and authentication to protect customers' information. Customers will need to enter a username and password to access their accounts, and the app will also use two-factor authentication to add an extra layer of security. The convenience of mobile banking has made it increasingly popular with customers, as they can access their banking accounts from anywhere. Mobile banking is also more secure than traditional banking, and customers can be sure that their information is safe and secure. As banks embrace the use of Artificial Intelligence to improve customer service, efficiency, and security, they are beginning to realize the potential of this technology (Ramakrishnan et al., 2019). AI is being used in multiple ways to improve banking services, such as automating customer service (Kushwaha et al., 2020), providing personalized recommendations (Rong et al., 2019), and ensuring security (Duncan et al., 2018). For example, AI-enabled chatbots provide more efficient customer service by responding to customer queries in a timely manner, while AI-based risk assessment systems can detect fraudulent transactions in real-time (Kushwaha et al., 2020).

AI-driven personalization systems can also provide more tailored recommendations to customers based on their past financial transactions (Rong et al., 2019). AI-based security systems can help banks detect potential threats to their networks and prevent data breaches (Duncan et al., 2018). Blockchain technology has been gaining traction in the banking sector due to its potential to revolutionize the financial sector (Lam, 2019). It is seen as a more secure and efficient way to carry out transactions and store data (De

Filippi & Wright, 2018). Blockchain has the ability to reduce fraud and reduce the cost of conducting business by eliminating intermediaries (Kostovetsky, 2017). It can also be used to create digital identities for customers, streamline payments, and facilitate the transfer of assets (Haber & Stornetta, 2018). Additionally, blockchain technology can be used to streamline KYC (Know Your Customer) processes, provide secure and reliable data storage, and enable faster and more secure transactions (O'Gorman, 2018). By leveraging blockchain technology, banks can reduce their operational costs, increase efficiency, and mitigate the risk of fraud. Cloud computing has revolutionized the banking sector by providing banks with a host of innovative and cost-efficient services (Liu, et al., 2019). It enables banks to store, manage, and analyze data quickly and securely, allowing them to make more informed decisions and improve customer service (Azure, 2021). Cloud computing also helps banks reduce the cost of maintaining data centers and the need for physical space (Li & Wang, 2019). Furthermore, it helps banks improve customer service by providing real-time access to customer data, which allows them to respond quickly to customer inquiries (Chakraborty, et al., 2018).

Biometrics is increasingly being used in banking to authenticate customers and protect their data from fraud. For example, some banks are using facial recognition to authenticate customers when they log in or using fingerprints to verify their identity for financial transactions (Pereira, 2019). This technology can be used to verify customers quickly and securely, helping to keep customer data safe and reducing the risk of fraud (Baker, 2019). It is a form of identification that uses physical characteristics such as fingerprints, facial recognition, and iris scans to verify the identity of an individual. Biometric technology is being used to secure bank transactions and combat identity theft. Banks are able to use biometrics to verify a customer's identity when they are accessing their accounts or making transactions.

This ensures that only the authorized person is able to access the account and that any fraudulent activity can be quickly detected. Biometric technology is also being used for authentication purposes. Banks are using biometrics to ensure that customers are the ones logging into their accounts. This is done by using biometric scanners to scan a customer's fingerprint or facial features and then compare them to the stored biometric data. If the data matches, the customer is authenticated and can proceed with the transaction. Biometrics also offers banks the ability to improve customer experience. Banks are able to use biometric technology to quickly and accurately verify customers. This eliminates the need for customers to fill out lengthy paperwork or provide identification documents. It also allows banks to offer customers a secure and seamless banking experience. Biometrics is becoming

an increasingly popular tool for banks to use to increase security and provide a better customer experience.

As technology becomes more advanced and widely used, it will become an important part of banking and financial services. Financial technology, or fintech, has been a hot topic in banking for many years now. The rise of fintech has been driven by the emergence of digital technologies that have created new opportunities for the banking sector, from the transformation of customer service to the automation of operations and processes. The conclusion that can be drawn from the innovation regarding financial technologies in banking is that fintech has become an integral part of the banking sector. Fintech is no longer a novelty, but rather has become an essential part of the banking industry. Fintech has enabled banks to offer customers new and innovative services, such as mobile banking, digital payments, and automated investment services. In addition, fintech has enabled banks to streamline their operations and processes and reduce costs. Fintech has also opened new avenues for banks to create new products and services, such as robo-advisors and online lending platforms. The rise of fintech has also led to increased regulatory scrutiny, as governments seek to ensure that fintech does not disrupt the financial system. Banks must also ensure that their fintech solutions are compliant with the latest regulations in order to remain competitive. Banks must continue to invest in fintech and develop new solutions that can improve customer service and increase efficiency. Banks must also continue to monitor the latest developments in fintech and ensure that their solutions remain up-to-date and secure.

5 Conclusion

Financial technology has made it possible for banks to provide services, such as online banking, mobile banking, and digital payments, without the need for physical branches and staff. This has enabled banks to remain open and functioning despite the health and safety restrictions imposed by the pandemic. In response to the pandemic, banks have been forced to rethink the way they provide services to their customers. In order to meet the demands of their customers and remain competitive, banks have invested heavily in fintech solutions. For example, many banks have launched digital wallets and digital payment solutions, allowing customers to make secure payments and transfers without having to visit a branch. In addition, banks have also been investing in artificial intelligence and machine learning technologies. AI and ML technologies enable banks to automate processes such as fraud detection and customer service. By leveraging these technologies, banks can reduce the amount of manual labor required to provide services to customers. Furthermore, banks are investing in data analytics, which allows them to gain insight into customer behavior and preferences. This data can be used to

develop personalized services and offers tailored to the needs of individual customers. Banks have also been leveraging blockchain technology to improve the security and efficiency of financial transactions. Blockchain-based solutions provide a secure and immutable ledger of transactions, reducing the risk of fraud and providing customers with greater peace of mind.

Fintech solutions have:

- helped banks to respond to customer needs by increasing digital banking adoption, improving customer experience, and optimizing operating costs;
- enabled banks to provide access to financial services to vulnerable people and small businesses who have been disproportionately affected by the pandemic;
- allowed banks to reduce costs associated with physical banking operations and to improve the accuracy and speed of payment processing;
- revolutionized the banking industry in recent years, allowing for faster, more secure, and more efficient banking services;
- provided to access financial services in a safe and secure manner;
- enabled banks to provide customers with more personalized and automated services, such as digital payments, remote account opening, and digital wallet applications.

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