INVERGE JOURNAL OF SOCIAL SCIENCES
https://invergejournals.com/
ISSN: 2959-4359
Volume 1 Issue 2, 2022

INTEGRATION OF INFORMATION TECHNOLOGY IN FINANCIAL SERVICES AND ITS ADOPTION BY THE FINANCIAL SECTOR IN PAKISTAN

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Abstract

The development of digital innovation is a clear indication of the expansion of financial technology (Fintech) businesses over the previous ten years. Fintech concepts have only lately begun to be accepted by established players in the financial sector. Despite recent bank purchases of Fintech firms, the majority of these businesses are self-funded and accessible to other banks. Because many banks, besides the well-known big ones, continue to provide outdated, outrageously expensive, and bureaucratic financial services, Fintech companies have the potential to replace many crucial tasks presently carried out by traditional banks. In other words, it's expected that Fintech firms will have a replacement effect, forcing banks to abandon certain kinds of business. The incentives for a bank to take risks and increase its effectiveness and profitability may have altered as a result of Fintech advancements. This exemplifies how Fintech developments will affect bank risk, efficiency, and profitability because they offer a competitive source of credit to conventional banks. The purpose of this research is to look into the problems from a global standpoint.

Keywords: Banking, Business, Financial Technology, Fintech, Financial Institutions,

INTRODUCTION

"Fintech" is a term used to describe financial technology, which refers to the digital and technological innovations that are changing the way financial services are delivered. Fintech companies leverage technology to offer new and innovative financial products and services, such as mobile payments, online lending, digital investments, and block chain-based solutions. These companies offer faster, cheaper, and more convenient financial solutions to consumers and businesses alike. Fintech has become a rapidly growing industry that is disrupting traditional financial services and is expected to continue to do so in the coming years.

Fintech is expanding on a global scale as a result of the rapid development of technologies like digital data collection, block chain, cloud-computing, data analysis, artificial intelligence, and machine learning. The term "Fintech" refers to financial innovations that are technologically enabled and may result in new business models, applications, processes, and products that have a major impact on financial markets, financial institutions, and the provision of financial services (Board, 2020). Fintech development is occurring in several financial institutions, including equity capital raising, investment management, insurance, wholesale payments, and retail lending.

These developments both compete with and aid in the modernization and innovation of already established financial services (M. Asif, 2021; Aurangzeb & Asif, 2021; Bhutto, Jamal, & Ullah, 2023). Although financial advances have emerged in the financial sector, it is less clear how Fintech will affect the financial system. The distribution of limited financial resources among lenders and debtors is a critical function of banks, which are an essential part of financial organizations. The financial sector is regarded as stable.

Digital innovation has exploded over the past ten years in every industry, including financial services. Long-standing participants in the financial sector, financial institutions have only lately begun to adopt new technological developments. Despite recent bank acquisitions of Fintech firms, the majority of Fintech start-ups are independent of banks and receptive to investment opportunities. Due to the fact that many banks, excluding the well-known big banks, continue to provide outdated, expensive, and unpleasant financial services, Fintech firms have the potential to take over a number of crucial functions presently carried out by traditional banks. Or, to put it another way, banks are expected to cede some business activities as a result of the substitution impact that Fintech companies are predicted to have.

How Fintech companies will impact banks and how much of what banks presently govern will be taken over by Fintech companies, is an empirical question.

Problem Statement

Fintech may offer chances and difficulties for conventional commercial banks. Increased overall competitiveness may improve established business models, lower operating costs, improve service quality, strengthen risk management capabilities, and immediately result in more customer-friendly business models. We advise examining the effects of technology on bank productivity, earnings, and risk. The efficiency of banks may be impacted by a variety of Fintech advances. It promotes financial innovation, which is essential for deciding how institutions function.

Fintech is changing the way banks operate, and it is anticipated that embracing new technologies will lead to lower bank expenses in the long run. Fintech-driven technological innovation alters the way financial services are provided, boosts rivalry, and has unpredictable effects on banking operations. Similar to this, technical advances inspire the development of cutting-edge financial products. In addition to growing financial resource availability, symmetry of transaction information, and resource allocation disintermediation, the financial stability board (FSB) asserts that Fintech is also low cost and highly efficient (Board, 2020).

Fintech uses information technology to increase the overall efficiency of the financial sector, expand the traditional financial limits, and change consumer spending patterns. Fintech, as opposed to the traditional business model of commercial banks, can provide more individualised financial services to individual consumers in a more simple and effective way, meeting their varied financial requirements.

The banking industry's business strategy for paying and collecting interest is being challenged by Fintech's advantages of time-space, differentiation, and high efficiency. This kind of chain response and shock are upending the industrial chain of conventional financial technology. Overall, the banking industry is being forced to endure significant changes as a result of Fintech, which is made possible by digital data collection, block chain, cloud computing, data analysis, artificial intelligence, and machine learning, and other cutting-edge technologies. It's critical to investigate further whether and how Fintech has impacted institutions.

Fintech is expected to decrease bank profit through either a decrease in revenue or an increase in operating expenses. The growth of Fintech companies has usually reduced the market share of banks. In order to compete with Fintech companies, banks will introduce new goods that raise the cost of banking services. In an attempt to compete with Fintech companies, banks may try to use Fintech to automate their processes. Additionally, established banks may experience a rise in demand for their services as a result of the financial services ecosystem's growth and the general increase in credit availability, giving them a

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ISSN: 2959-4359

competitive edge over newcomers. These factors could aid banks in boosting their revenue. Therefore, it is an empirical topic that needs more research to ascertain whether Fintech has a positive or negative relationship with bank profitability and effectiveness.

Whether banks engage in the development of Fintech or face competition from other bank-like businesses outside of Fintech, Fintech services are both an improvement over and a substitute for traditional banking. Eventually, it might help to stabilise the overall financial sector (He et al., 2017). A commercial bank can improve operational effectiveness and bank stability by utilising its own historical customer data and actively engaging in business innovation through research and development into Fintech technologies. According to the "Technology Spill-over Theory", the effects of Fintech innovation, rivalry reversal, and talent turnover will cause conventional banks to modernise their technology, innovate their businesses, and optimise their services (D. M. Asif, Adil Pasha, Shafiq, & Craine, 2022; M. Asif, Khan, & Pasha, 2019; M. Asif, Pasha, Mumtaz, & Sabir, 2023; Rubin & Beuk, 2021). This will increase the output and revenue of the financial institution while lowering the motivation to take chances (Aurangzeb, Alizai, Asif, & Rind, 2021).

Objectives

This review research study examines the effects of Fintech innovations on financial institutions' productivity, profitability, and risk-taking and bearing.

Discussion

Banks carry out their responsibilities while placing a strong emphasis on controlling and taking risks in an extremely unpredictable environment. At the same time, internal or bank-level variables and exterior factors have an impact on bank risk-taking. Concerns about the flaws in banking studies have been expressed in light of the widespread bank defaults in Europe and the Financial Crisis of 2007–2009. In an effort to close the knowledge gaps and identify the causes of these frequent lapses, researchers have re-examined the variables that affect bank risk taking. As predictors of bank risk, research is presently being done on both bank- and country-level variables.

In a study conducted by Haq and Heaney (2012), which used the data from 117 financial organisations across 15 distinct European nations to pinpoint the variables that affect bank risk at the bank level. They discover a clash between bank risk and charter value as well as a U-shaped link between bank capital and risk. They also find that dividend distribution ratio and bank risk are negatively correlated, while off-balance sheet operations and bank risk are positively correlated. Other studies in this area use factors

like CEO and management pay as well as shareholder conduct. Show that increased bank risk-taking is encouraged by shareholding concentration in banking companies by using several bank datasets. There is evidence that CEO compensation based on shares of stock increases financial risk.

In a research already conducted on national banking legislation examines how activity restrictions, specific deposit insurance, and minimal capital requirements impact banks' risk-taking behaviour (Agoraki, Delis, & Pasiouras, 2011). There is consensus that, in order to maintain the security of the banking sector in the post-global financial crisis (2007–2009) environment, bank proprietors should have greater capital levels as a proportion of total assets in banks. Higher national capital standards have been found to improve the stability of individual banks, according to several studies that have discovered empirical evidence to back this hypothesis.

The bulk of the current literature on explicit deposit security claims that having such a plan in place encourages banks to take more risks (Setiawan, 2009). For example, some people argue that explicit deposit protection reduces depositor authority over banks and exacerbates moral hazard problems within those organisations. Empirical evidence that banks are more at risk in countries with clear deposit protection schemes is found by the researchers. Studies after that generally recognise how deposit protection increases bank risk (Forssbæck, 2011).

Legal institutions like common legal origin, enhanced creditor rights, and information sharing among creditors about debtors' creditworthiness are all acknowledged in the literature on law and finance as a whole as encouraging lenders to increase lending by enforcing their rights in the event that borrowers default. Numerous studies suggest that these organisations have a micro-level impact on bank risk-taking. Banks in common law countries allocate a noticeably larger percentage of their assets to risky loans than banks in civil law countries (Widarjono, Wijayanti, & Suharto, 2022). In a research conducted by Houston, Lin, Lin, and Ma (2010) and argued that banks in countries with stronger creditor rights assume more risk, while banks in countries with explicit information-sharing systems assume less risk.

Numerous academic studies have highlighted the significance of bank efficiency as a driving element in literature's economic well-being. For instance, enhancing bank performance may positively impact resource allocation, financial security, and economic development (Aurangzeb, Asif, & Amin, 2021; Allen N Berger & Humphrey, 1997). As a consequence, many studies evaluating banking effectiveness have surfaced over the past few decades. Some of these studies use parametric and non-parametric methods to assess the efficiency of institutions.

The Western world has been the focus of the vast majority of in-depth study on banking efficiency. In dealing with the efficiency studies conducted by the banking company, they significantly contributed. But the focus of their investigation was on European and American banking organisations. However, there aren't many studies on how effective banks are in emerging and underdeveloped nations (Nurboja & Košak, 2017). Many of the researchers came to the conclusion that the technical efficiency level for public sector institutions was 88.5 percent. Only seven institutions, technically, were functional. The effectiveness of Indian banks was positively impacted by off-balance activities, according to the paper's regression analysis. El-Gamal and Inanoglu (2004) used data envelopment analysis (Den Hartog, Van Muijen, & Koopman) to determine the comparative cost efficiency of Turkish institutions from 1990 to 2000. They learned that Islamic institutions were more productive because they used asset-based financing. Samad (2004) compared Bahrain's Islamic banks' revenue, liquidity, and capital management to those of the nation's conventional commercial banks. A comparison of 11 financial metrics between Islamic and conventional banks from 1991 to 2001 revealed no variations in profitability and liquidity performance.

The relative effectiveness of Malaysia's domestic and international banks between 2001 and 2005 was examined by Sufian and Majid (2007). They found that scale inefficiency among banks during this period outweighed pure technological efficiency. Additionally, they found that domestic banks had lower technological efficiency than foreign banks. The various efficiencies of the Malaysian banks and the variables affecting these efficiencies were estimated by Sufian (2009). His study revealed that efficiency had a negative correlation with bank costs and the state of the economy and a positive correlation with loan intensity.

Between the years of 2000 and 2006, Andrieş and Cocriş (2010) compared the effectiveness of banks in a number of southern European countries. They learned that the banks in Romania, the Czech Republic, and Hungary were all but non-existent in terms of technological efficiency. Samad (2009) determined the average effectiveness of Bangladeshi banks using statistics from 2000 and found that it was 69.6. However, this study was limited to the technical effectiveness for the year 2000. Samad (2007) discovered no differences in the profitability of domestic and foreign banks during the years 2000-2001 when comparing the performance of domestic and foreign banks in Bangladesh using a number of financial parameters.

Academic writing generally considers both internal and external factors to be effects on bank profitability. Small, bank-specific factors known as internal determinants are produced by bank business operations and are influenced by management at the bank level. Considerations including risk management,

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ISSN: 2959-4359

size, asset quality, cost effectiveness, liquidity ratio, and capital sufficiency are all important. On the other hand, the external determinants are outcomes of the social, economic, and legal settings and have an effect on the performance and operation of the banking sector, but they are not directly connected to bank management activities. The banking sector can be tied to industry-specific characteristics like ownership and concentration (Curak, Poposki, & Pepur, 2012; Košak & Čok, 2008; Owoputi, Olawale, & Adeyefa, 2014).

However, macroeconomic factors are not industry-specific. This encompasses inflation, economic expansion, and market interest rates. Numerous books have examined the elements that influence bank profitability in various countries around the world. Empirical research on the variables influencing bank profitability fall into two categories: those that focus on a single nation and those that employ a panel of countries.

The USA banking industry was used in investigation of the connection between size and profitability. They contend that growing a financial firm's size will only result in marginal cost savings. Hence, size increase won't considerably lower the cost of running a bank and numerous studies also showed that the relationship between the profit structure and the banking firm in the USA (Allen N. Berger, Hanweck, & Humphrey, 1987; Hunter, Timme, & Yang, 1990).

New rivals in the market raise the level of competitiveness regardless of who they are. FinTech firms use cutting-edge technology to handle services like lending, payments, and investment that were previously only handled by banks. Fintech companies have recently benefited from the creation of practical applications for a number of services, including (but not limited to) contactless and instant payments, asset management services, investment and financial service advice, and information and data management/storage (Crick & Crick, 2022; Mumtaz, Munir, Mumtaz, Farooq, & Asif, 2023; Pasha, Ramzan, & Asif, 2019; Singh, Chhetri, & Padhye, 2022).

Conclusion

Digital financial inclusion involves the deployment of cost-saving digital means to reach currently financially excluded and underserved populations with a range of formal financial services suited to their needs that are responsibly delivered at a cost affordable to customers and sustainable for providers. Information technology tools and applications used in the financial industry are diverse and varied. They include software applications for accounting, financial analysis, trading, and risk management, as well as hardware such as servers, storage devices, and network equipment. One of the key benefits of information technology in financial services is its potential to promote financial inclusion. By making financial services

more accessible and affordable, ICT can help to bridge the gap between the banked and unbanked populations

Information technology has become a crucial tool in financial services. Various financial organizations use digital technology on an everyday basis, from the exchange of financial tools to estimating the total earnings. The role of information technology in financial services is crucial in many aspects. It also allows an organization to update at the same rate as its competitors. The social media, led by information technology can provide valuable data on their consumers. Emerging technologies such as artificial intelligence (AI), the Internet of Things (IoT), 4G and 5G, and quantum computing are beginning to form powerful clusters that are collectively reshaping financial services, bringing new opportunities to firms and consumers.

The government of Pakistan has implemented Financial Literacy and Consumer Protection Program (FLCPP) to promote financial inclusion and literacy in the country. The program aims to increase access to financial services and products through digital channels. Moreover, the State Bank of Pakistan (SBP) has launched a Digital Financial Services (DFS) Innovation Challenge Facility to support financial service providers and institutions with a digital solution to develop new or expand existing financial products, services and delivery platforms that will increase financial access for people living at the bottom of the pyramid.

The government of Pakistan has launched an emergency cash program for 12 million households to increase financial inclusion. The program will help drive a shift in the payment ecosystem, from cash-based to digital. Moreover, the State Bank of Pakistan (SBP) has taken various initiatives to enhance the capacity of the masses and financial institutions through numerous initiatives with the motive to assist financial inclusion and poverty alleviation efforts that supplement economic growth and stability across the country.

In addition, Pakistan has developed a broader National Financial Inclusion Strategy (NFIS) in collaboration with the World Bank which was adopted by government of Pakistan and launched in May 2015. The objective of the Strategy is to set national vision for achieving universal financial inclusion in Pakistan.

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