



Research Article

Impact of fintech on the Pakistani banking sector

Mujtaba Ahmed¹, Anand Kumar^{2*}, Muhammad Talha³,
Zuhaib Akram⁴, Kashif Arif⁵

^{1,2,3,4,5}Department of Accounting and Finance, Salim Habib University, Karachi, Pakistan

*Corresponding Author email: anandkumarlakhani64@gmail.com

Keywords:

Fintech;
Fintech Adoption;
Competitiveness;
Performance;
Banking Sector;
Pakistan

Submitted:
27 December 2023

Revised:
10 February 2024

Accepted:
13 February 2024

ABSTRACT

In the early stages, Fintech was introduced in the banking sector in Pakistan, and it enhanced banking activities from traditional to digital. Fintech is the fusion of two terminologies, Finance and Technology. It includes the use of technological advancement to deliver financial products and services to people. This research aims to investigate and analyze the impact of Fintech adoption on the competitiveness and performance of the Pakistani banking sector. The research is based on quantitative methods and analyzed using SPSS software; we used the convenience sampling method to collect responses from 90 participants. This study uses a regression analysis model as a benchmark to analyze the data received from the questionnaire. The results suggest that Fintech adoption had a significant positive impact on the competitiveness and performance of the Pakistani banking sector. Adopting Fintech properly and lining up with technology can also improve the performance of a bank. This study allows for a more in-depth understanding of the impact of FinTech on banks.

1. INTRODUCTION

Fintech is a combination of the terms financial and technology. It is a new technological development for products and services in the financial industry. Fintech enables a variety of payment solutions in the economy and different firms in the Fintech industry are offering different types of financial services such as credit card services, payment debit card payments, and other similar banking services. Fintech services help businesses to develop new business models such as cryptocurrency, mortgage, digital investment, digital cash, digital currency, and digital insurance are some examples of Pakistan's banking industry. Fintech is the financial innovation that includes the use of digital technology and big data (Stulz, 2019). (Gomber et al., 2017), the growth of the Fintech industry has also contributed to overall economic growth. It has created new jobs as well and the value of the international Fintech market reached \$194.1 billion in 2022. The state bank of Pakistan is the primary regulator of Fintech companies in Pakistan. Depending on the nature of the business model, a Fintech company may require a license of (EMIS AND PSOS). The current value of Fintech in Pakistan is that the average transaction of the digital investment segment is US \$20.34 in 2023 and the future of Fintech in Pakistan according to the probability, the digital finance services in Pakistan will cross \$36 billion by 2025 (Alt et al., 2024).



In the world of finance, it can be difficult to find a more attractive topic than Fintech, the most popular search on the internet is finance about 62,400,000 results (0.39 seconds) which include almost half of the searches connected to Fintech start-ups. The need for Fintech has begun to be felt in the banking sector and other capital markets. The purpose of this article is to survey the developments and impact of efficiency, banking market structure, strategies of incumbents, and financial stability.

In this era of digitalization banks and other financial institutions are adopting to the digital world. The people instead of going to banks again and again either to transfer, deposit, or withdraw money, are more into a comfortable and home-operatable service i.e., only digitalized system. However, Fintech competitors are intruding on the traditional banking business (Arner et al., 2023). The new participants in this competition rely on whether or not the investment makes a commercial enterprise sturdy or smooth and also whether there are strategic substitutes inside the market opposition (that is, whether a growth inside the motion of a rival induces an increase or decrease) (Farida & Setiawan, 2022). Now it's time for the choice of recent participants either to go into the competition or to avoid it. Regulating the financial industry poses a challenge in maintaining fair competition between established companies and new players, while also fostering innovation and ensuring stability. It is crucial to prevent emerging Fintech companies from becoming unregulated entities similar to shadow banking, which played a significant role in the 2007-2009 financial crisis by concealing systemic risks. A key concern highlighted by the Financial Stability Board in 2017 is the increased likelihood of systemic issues arising from operational and cyber risks associated with Fintech activities.

1.1. FINTECH IN PAKISTAN

Fintech, or financial technology, is a growing industry in Pakistan. The country has a large population with limited access to traditional banking services, and Fintech is seen as a way to increase financial inclusion and promote economic growth. Several Fintech startups have emerged in Pakistan in recent years, offering a range of services such as digital payments, peer-to-peer lending, and personal finance management (Bokhari, 2022).

The State Bank of Pakistan (SPB), the country's regulator and central bank, has also taken steps to support the growth of Fintech in the country. In 2020, the bank launched a regulatory sandbox that allows Fintech startups to test their products and services in a controlled environment. Overall, Fintech is seen as a promising sector in Pakistan, with the potential to improve financial inclusion and drive economic growth. This article aims to explore the role of Fintech in improving Pakistan's financial situation (Zaidi & Shah, 2023). The main purpose of this research is to explore how Fintech can contribute to the world of finance in Pakistan. This study aims to explore various Fintech initiatives that can make this happen. Helping integrate the unbanked into formal financial systems, including mobile, Payments, Digital Banking, Microfinance, and Financial Education.

To Investigate Different Fintech Initiatives that can contribute to financial inclusion in Pakistan a Quantitative Research Approach is used. This includes an analysis of the existing literature on the subject and findings from other countries. The study found that Fintech

could play an important role in Improving Pakistan's Fiscal situation especially in rural areas and financial institutions and also for small business owners. These efforts can contribute to overall economic growth. We aim to develop the country by providing access to financial services to people who cannot access them. However, it is important to address the following challenges of Fintech adoption in Pakistan: Such as governing barriers and digital learning.

1.2. FINTECH IN PAKISTAN'S BANKING SECTOR

The financial inclusion ratio of Pakistan is 21%, which is significantly lower than other middle-income countries compared to an average of 33% (Bank, 2021). With the increase in mobile internet services, there are more than 160 million biometrically verified mobile connections present across Pakistan which is 68% of the population (Naz et al., 2023). Fintech gives a boom to the Banking sector in Pakistan and it is the first sector which adopt Fintech services and introduce new financial services at a higher rate. Fintech forces banking sectors to move from traditional practices to online banking such as paying bills, transferring money, making payment orders, and others, in traditional banking people visit banks to do these activities but due to financial inclusion, they can do it anywhere through their mobile phones. Fintech services in banking include online banking, mobile banking, ATMs, and mobile wallets. COVID-19 was the biggest event that leads to an increase in the adoption of digital services in Pakistan, according to the study conducted by Karandaaz Pakistan about 31 percent of the respondents suggest that Bill payments have been identified as having the highest chance of growing, followed by mobile top-ups (23%) and e-commerce (15%) because of Fintech in banking sector (Baig et al., 2022).

The evolution of e-banking has changed the banking sector by introducing Fintech products one of which is Internet banking which helps companies and individuals to improve the financial transaction quality and long-term relationships with clients. In 2001 Habib Bank Limited (HBL) introduced the first online banking platform in Pakistan, in 2008 State Bank of Pakistan introduced a branchless banking license and in the recent year HBL introduced an online bank account that means you don't have to visit the physical bank to open your bank account (Siddique et al., 2022). After online banking the digital wallet era had introduced by Telenor Pakistan and Tameer Microfinance Bank in 2012 they launched the first e-wallet called Easypaisa it is a mobile banking platform unlike banks but the account opening process was very simple people just need their CNIC and other information to open the account, through Easypaisa user can transfer money pay bills and other services that are in online banking (Bömer, 2020). To use online banking users, need to open a bank account physically with many documents required and money but with Easypaisa it is free of cost to open an account. There are other different E-Wallets introduced such as JazzCash, Keenu, sadapay, and Nayapay. Now the different bank have their own E-Wallet such as HBL has Konnect and JS Bank has Zindagi.

In April 2021 the State Bank of Pakistan (SPB) launched RAAST a digital instant payment system to promote online transactions and reduce physical hand transactions. RAAST is a real-time, interbank electronic funds transfer (EFT) system that allows users to instant transfer of funds 24/7 between bank accounts and digital wallets. RAAST is the end-to-end

fund transfer system a unique RAAST ID is created on a user mobile number linked to the bank account or digital wallet and used as an account number to transfer funds under the RAAST P2P fund transfer system. The RAAST payment system is built using the ISO 20022 financial communication standards, which is a more advanced framework than the older ISO 15022 or ISO 8583 standards that are currently being used by commercial banks and financial institutions.

1.3. PROBLEM STATEMENT

The advancement of technology and the introduction of Fintech in the banking sector played an important role around the world it reconstructed the whole banking system from traditional practices such as digital banking, peer-to-peer lending, and E-wallets. Fintech has a great impact on improving performance and sustainability over the world but Pakistan is not able to fully adopt the Fintech in banking sector. Pakistan adopts Fintech Less Compared to global, the Fintech Startups have grown from 10 to over 100 from 2015 to 2023 compared to the USA which has grown from 500 to 2000 startups. The Fintech investment value reached over \$100 million in Pakistan compared to the USA's \$100 Billion (Liu et al., 2022). The purpose of this study identifies the importance of Fintech in Pakistan through three questions:

RQ1: Does Fintech adoption has an impact on the competitiveness of bank?

RQ2: Does Fintech adoption has an impact on the performance of bank?

RQ3: Does competitiveness has an impact on the performance of a bank?

2. LITERATURE REVIEW

Financial Technology (Fintech) is a mixture of three terminologies Finance Financial services and Technology a huge amount of investment is made in the financial and banking industry to use Fintech to restructure their services and products which leads to make competitive (Bömer, 2020). COVID 19 impacted greatly in terms of performance in the banking industry including an increase in online payments that also leads to a shift in customer behaviors as well as provided difficulties such as an increase in bad debts (Loan payment failure) and new operational adaptability issues (McKibbin & Fernando, 2021). Financial institutions such as banks have been revolutionized during the past year because of advancements in technology that help to deliver products and services more efficiently and efficiently with better environmental performance (Yan et al., 2021).

Dwivedi et al. (2021), concluded that financial adoption has a remarkable effect on the competitiveness and efficiency of the bank. Fintech made the banking sector more secure and fast, and it has also increased competition in the banking industry. As the industry continues to evolve, it will be interesting to see what new Fintech innovations will bring in the future (Hasan, 2023). The recent work categorized Fintech into Fintech 1.0, Fintech 2.0, Fintech 3.0, and Fintech 4.0 (Arner et al., 2022) and linked with achieving competitiveness. Fintech impacted greatly on the traditional banking industry and the stock price of the company according to the research conducted by (da Silva, 2022).

2.1. FINTECH REVOLUTION

Fintech Revolution refers to the adoption of technology-driven financial solutions. According to (Shin & Choi, 2019), Fintech can be defined as financial services that rely on technology, particularly mobile-centered information technology, to enhance the efficiency of monetary systems. Schueffel (2016) describes Fintech as the evolution and application of technology that disrupts traditional business models in financial markets and introduces new and unexplored risk areas. Gomber et al. (2017), identified two fundamental aspects of the Fintech revolution. Firstly, there is a surplus of capital available for innovative technology in the financially fertile global economic region. Secondly, there are newly developed financial services that differ from traditional approaches and directly cater to the needs of consumers in a valuable and futuristic manner.

2.2. FINTECH ADOPTION

The accessibility of communication has facilitated convenient and secure monetary transactions, aided by the extensive use of the Internet and automatic data processing in the financial sector. However, the implementation of new Fintech solutions in financial services carries inherent risks, including potential monetary losses influenced by various factors in the business environment (Feyen et al., 2021). Each country has its own set of regulations and local legislation pertaining to the adoption of Fintech, and in the UAE, Islamic banking practices are prevalent in the majority of the banking industry, governed by Shariah law. The successful integration and acceptance of Fintech in the banking field necessitate a strategic approach to technology management, ensuring alignment with business goals and processes. Despite a mobile banking adoption rate of approximately 52%, there remains a prevailing unfavorable perception towards it among end-users and local citizens

3. HYPOTHESIS DEVELOPMENT

3.1. FINTECH ADOPTION AND COMPETITIVENESS

The development of smartphones and technology has given growth to FinTech adoption worldwide. According to the study, the mobile payment concept and customer experience are addressed first and later explored in the Dutch financial banking system. Based on quantitative research methods and studies shows that the adoption of FinTech or other mobile payments and experience broke out as a result of the impact of COVID-19 and the social distance that took place during the pandemic in the world. The word FINTECH is the summarization of two terms FINANCIAL and TECHNOLOGY that delivers financial products and services. The innovative decisions in the field of finance led to Fintech-driven companies to come up with financial services. Due to this, the relationship among regulators, consumers, and other actors has changed. Another factor that affects is the perception of its ease or difficulty to use it. It is attributed to the complex nature of digital banking and user attitudes.

This is linked to the complex nature of digital banking and user attitudes (Shirish et al., 2023). It is crucial for Pakistani banks to first understand customers' perceptions regarding user-friendliness, reliability, convenience, and value-addition before implementing technology solutions. Inaccessibility to digital banking services via digital platforms often leads customers to resort to physical branches. Therefore, strategically prioritizing the adoption of streamlined Fintech-enabled processes becomes crucial (Obeidat & Saxena, 2015).

H1: Fintech Adoption Leads to Competitiveness in the Pakistan Banking Industry

3.2. FINTECH AND PERFORMANCE

Fintech had a great positive impact on the operations of banks and improved the performance of financial activities institutions such as Banks. Blockchain is a journal that records transactions clearly, it has the potential to improve the security of transitions and reduce the risk of fraudulent activities and errors (Klößner et al., 2020). Compliance is a critical part of the financial services industry and failure to meet with regulations can lead to damage to the reputation (Gladden, 2020). The integral part of business strategy for the finance and banking industry is fintech innovation. There are many positive impacts on organizations that fully exploit the adoption process. This results in enhanced competitiveness and performance (Ahn & Cho, 2019). It is important to know that fintech has provided many benefits. Its impact on performance has been substantial efficiency and accessibility within the financial industry. Services of Fintech could also produce a diversification effect which plays an important role in improving bank risk management (Wang et al., 2023).

H2: Fintech Adoption Leads to Performance in the Pakistan Banking Industry.

H3: Competitiveness Leads to Performance in the Pakistan Banking Industry.

All the discussed relationship have been present as the research framework in the following Fig. 1.

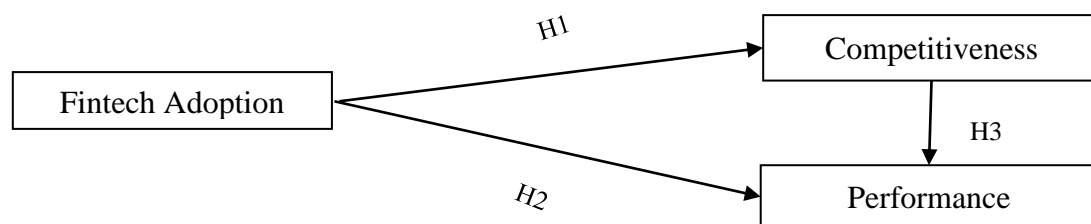


Fig. 1. The Research Framework

4. METHODOLOGY

4.1. RESEARCH DESIGN

The study is a quantitative study and questionnaires are designed to analyze the impact of Fintech on the Bank's performance and competitiveness. Questionnaires include input from students, professionals, teachers, and businesspersons and it is divided into further

two sub-categories to make it easier to fill out the form. The first section is about demographic information such as age, gender, and profession. The second section focused on the issues of Fintech adoption, competitiveness, and performance in the banking sector of Pakistan. The research is designed with a total of 19 questions that include 3 demographic questions, 8 questions based on Fintech adoption in Pakistan, 5 questions based on competitiveness, and 3 questions on the impact on the performance of the bank. The questionnaire 5-point Likert scale where 1 is strongly disagree, 3 means neutral and 5 represent strongly agree. The Likert scale is the best tool because it helps to have positive and negative statements both in the response option.

The respondents require to have understandable knowledge about Fintech and how it applies to the banking sector, consequently, the selected sample comprises students and professionals of Pakistan who are using Fintech applications such as online banking and digital wallets. All participants in this research were selected for data collection based on convenience sampling, so respondents could easily be reachable and can have time to fill out the questionnaire and can share their opinions. There are some possibilities that some participants might not respond to our questionnaires it may be because of not interested, questionnaires are developed in Google form with an optimal range of questions and simple to fill out in order to guarantee that the participants understand the questions and have the information they require to provide answers that are both precise and expressive and the total number of responses collect are 90 see table 1 below.

Table 1. Survey Participation

Particulars	No. of questionnaires distributed	Percentage %
<i>Structure of Survey</i>		
Distributed	135	100%
Completed	90	66.7%
Rejected	-	0%
Not Received	45	33.3%

5. DATA ANALYSIS AND FINDINGS

The software which is used for the data analysis is SPSS 22.0 for frequencies and descriptive statistics and regression analyses are used to test the relationship among the three hypotheses “Fintech Adoption leads to Competitiveness in Pakistan Banking Industry” and “Competitiveness Leads to Performance in Pakistan Banking Industry”. We also looked at descriptive statistics to find the mean, median, minimum, maximum, and standard deviation. To examine the connection between variables of Fintech adoption and competitiveness the following examinations were conducted.

5.1. FREQUENCIES

Frequency is the first analysis that we completed related to descriptive statistics; frequency is the number of responses that occurs on the database selected by respondents. Our data has 90 respondents and we have classified variables on frequency such as age, gender, and profession. Since nothing is missing so the cumulative sum of all separations in the

frequency table is one hundred. Gender respondents are further categorized into male, female, or prefer not to say and most of the respondents are male 53 while female and prefer not to say are 35 and 2 respectively (Table 2.).

Table 2. Demographic Analysis

Demographic Category		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	53	58.9	58.9	58.9
	Female	35	38.9	38.9	97.8
	Prefer not to say	2	2.2	2.2	100.0
	Total	90	100.0	100.0	
Age	18-21	28	31.1	31.1	31.1
	22-26	26	28.9	28.9	60.0
	27-31	17	18.9	18.9	78.9
	32-40	12	13.3	13.3	92.2
	40 Above	7	7.8	7.8	100.0
	Total	90	100.0	100.0	
Profession	Student	52	57.8	57.8	57.8
	Professional	30	33.3	33.3	91.1
	Teacher	8	8.9	8.9	100.0
	Total	90	100.0	100.0	

Most of the respondents are being in between 18-21 years of age with a percentage of 31 followed by 22-26 with 29 percent and 19 percent of respondents have a range of 27-31 other respondent's data about age is provided in (table 2). The results are clearly showing that the young respondents are more in data and Fintech banking also targets young age group people. In the profession, most of the respondents are students 57.8 percent along with professionals 33.3 percent, and teachers 8.9 percent (table 2.).

5.2. DESCRIPTIVE STATISTICS

To find the total number of observations, standard deviation, minimum and maximum we used the descriptive statistics tool in SPSS software. The responses were recorded and analyzed on 5-point Likert scale where 1 being the minimum and 5 being the maximum. The following table 3 represents the mean (average), standard deviation, skewness, and kurtosis of the data provided.

Table 3. Descriptive Statistics

Survey Questions	N	Min	Max	Mean	Std. Dev	skewness	kurtosis
<i>Fintech Adoption</i>							
FinTech created a new opportunity for banking in Pakistan	90	1	5	3.89	1.033	-1.276	1.577
FinTech in Pakistan banking is unavoidable	90	1	5	3.51	.974	-.740	.673
FinTech helps to innovate products and services for banks	90	1	5	3.86	.989	-1.127	1.100
FinTech adoption is favourable in Pakistan regulations	90	1	5	3.74	1.023	-.946	.674
FinTech adoption process is smooth to adopt in your bank	90	1	5	3.58	1.005	-.829	.604
FinTech adoption required a strategic approach to technology management	90	1	5	3.74	1.023	-.817	.281
FinTech adoption is supported by everyone in the bank	90	1	5	3.39	1.158	-.544	-.425
FinTech adoption creates new channels	90	1	5	3.67	.972	-1.011	1.286

Survey Questions	N	Min	Max	Mean	Std. Dev	skewness	kurtosis
<i>Competitiveness</i>							
FinTech helps to reduce the cost of financial transactions and services	90	1	5	3.88	1.015	-.937	.377
FinTech Improves the Quality of services delivery	90	1	5	3.77	1.071	-1.032	.681
FinTech helps to improve the productivity of the banks	90	1	5	3.74	.989	-.744	.438
FinTech helps to reduce the time of the services	90	1	5	3.98	1.060	-1.056	.612
FinTech helps to increase flexibility	90	1	5	3.92	.963	-.770	.109
<i>Performance</i>							
FinTech helps to improve the profit of the bank.	90	1	5	3.62	1.001	-.826	.763
FinTech helps to improve the growth of the bank.	90	1	5	3.73	.981	-.972	1.027
FinTech overall helps bank performance	90	1	5	3.88	1.015	-1.069	1.126

According to the statistics, the data has been considerably skewed, and all of the values come within the kurtosis range of -3 to +3. The all-skewed and kurtosis are between -3 to +3. The sample size of all questions is 90 which means there are no missing values in the data all questions were answered. The mean value is near 4 which means most respondents are positive about the impact of Fintech Adoption on the competitiveness and performance of the banks.

5.3. RELIABILITY

The statistical tool reliability and validity are used to evaluate the research's distinctive attributes, they both illustrate how a test, approach, or methodology precisely calculates our findings. Reliability tells the consistency of the responses and validity refers to the accuracy of the responses. Reliability and Validity are important for quantitative research because they help in research design, methods, and data analysis and results. In our research independent variable, Fintech adoption has a reliability of 0.864, and another independent variable Competitiveness has a reliability of 0.829. (A reliability coefficient of 0.7 or higher is considered "accepted" in the majority of the social science research situation around the world).

Table 4. Reliability Statistics

Construct	Cronbach's Alpha	Number of items
Fintech Adoption	0.846	8
Competitiveness	0.829	5
Performance	0.752	3

Cronbach's Alpha measures how reliable the questions are related to Fintech's impact on banks, it is important that an instrument's reliability and validity are strongly correlated that's why the major purpose of Cronbach's Alpha is to measure reliability. Technically Cronbach's Alpha is not the statistical measurement tool it is the coefficient of reliability. A value between 0.6 and 0.8 is considered acceptable and in our case, the Cronbach's Alpha value is between those figures, 0.846 represent that the nine Fintech Adoption questions are strongly consistent with each other which means respondents who answer higher on question 1 tend to answer higher on question 2, same with other variables competitiveness and performance see table 4 above.

5.4. CORRELATION

Table 5. Correlations

Variables		Fintech_Adoption	Competitiveness	Performance
Fintech_Adoption	Pearson Correlation	1	.764**	.756**
	Sig. (2-tailed)		.000	.000
	N	90	90	90
Competitiveness	Pearson Correlation	.764**	1	.767**
	Sig. (2-tailed)	.000		.000
	N	90	90	90
Performance	Pearson Correlation	.756**	.767**	1
	Sig. (2-tailed)	.000	.000	
	N	90	90	90

*Correlation is significant at the 0.05 level (2tailed)

The Sig (2-tail) in Fintech Adoption to Competitiveness, Fintech Adoption to performance, and competitiveness to performance is 0.000 in all, which is less than 0.05 so there is a significant positive relationship exists between independent and dependent variables. All the Pearson Correlation values are 1 which represents that all the results are perfectly positively correlated with each other see table 5 above.

6. RESULTS AND DISCUSSION

Regression analysis is the statistical technique that is used to analyze the relationship between the independent variable (Fintech Adoption and competitiveness) and dependent variable (Competitiveness and performance). It helps to examine how the change in the independent variable impact the change in depend variable. It is used to analyze different kinds of business problems and financial analysis for instance the financial analyst of the company estimates the relationship between the company's performance and its impact of it on stock price. ANOVA is the analysis of variables in the data this technique measures the variation in the dependent variables ANOVA in SPSS is needed to examine the use of an interval or ratio scale to measure the dependent variable.

The general statistical rule is if the t value is greater than 2.00 and if the sig value is less than 0.05, we reject the null hypothesis. The t value in all three regression analyses of the independent and dependent variable is greater than 2 and the sig value is less than 0.05 (table. 6) so, we reject our null hypothesis.

Table 6. Hypothesis Testing

Hypothesis	Path	Coefficient	R. Square	P-Value	Decision
H1	Fintech Adoption → Competitiveness	0.820	0.583	0.000	Supported
H2	Fintech Adoption → Performance	0.843	0.572	0.000	Supported
H3	Competitiveness → Performance	0.797	0.589	0.000	Supported

The banking industry in Pakistan played an important role in the country's GDP and is the highest-growing industry. Based on the above results (table 6) provided Fintech has a great impact on the Competitiveness and performance of the banking industry in Pakistan. The banking sector in Pakistan focuses on technology and fresh ideas by engaging new employees especially young groups to improve performance. Fintech innovation has a

significant impact on performance and competitiveness in the above study, Fintech banks provide their products and services to consumers more efficiently and easily, and according to Anjalika and Priyanath (2018) innovation and technology adoption improved the bank performance and process of banks. Fintech is an advanced tool to satisfy customers and make them competitive in the market (Butt & Khan, 2019). Fintech is in the evolution from FinTech 2.0 era to the FinTech 3.0 era, one of the technological evolutions is ATM (Leong & Sung, 2018). Fintech is very essential for the development of new products and services; Fintech adoption improved the bank performance and competitiveness and performance in the UAE banking sector (Dwivedi et al., 2021). At present banks are moving rapidly towards digital banking which includes providing services through E-banking such as E-Payments, digital wallets, paying bills, and other services rather than physically (Torres, 2022). At present the partnership between banks and Fintech industries has the potential to increase Fintech in Banking (Elsaid, 2023). Due to high improvement in the banking sector to adopt technology in the future, the banking sector will be Fintech banking (Stulz, 2019).

The performance of bank increased and adopting Fintech improvement makes their work process easier and reduce cost Fintech helps the bank to offer different services such as ATMs, digital wallets, and digital banking. There is a need for improvement in Fintech in banks to make them competitive at the global level. Each hypothesis was tested through regression and correlation statistical tools and results are not rejected.

7. CONCLUSION

The findings of this paper will help us to better understand the impact of Fintech on the banking sector and whether it enhances the performance and competitiveness. Overall, the literature and results confirm that Fintech adoption has a significant impact on improving banks' performance and competitiveness in the banking sector of Pakistan. We analyzed previous studies in the literature review on Fintech, and they also support our hypothesis.

8. LIMITATIONS AND FUTURE RESEARCH

This study has some limitations. The data was collected in one city, Karachi, and from random people without a target audience, it should be conducted from a narrow perspective. Different organization's workforce and senior employees especially from the banking sector must be considered for future studies. The scope of the sample for future research should consider expanding the size of the sample and geographical area. The regulatory framework of any country is still unclear and is changing over the period, which could make it difficult to analyze the impact of Fintech on the banking sector, this could change the condition to be favorable or unfavorable to Fintech industries. In the future, banks must set an objective to improve their performance within the banking sector by combining human-technology interactions (Dwivedi et al., 2021).

9. RECOMMENDATION

The Banking sector in Pakistan is one of the most developing industry and face different challenges and problems. Facing the competition due to Fintech in the market banks needs to move from traditional practices and adopt new technological advancement to offer a unique product and services to customers. Small and microfinance banks can conduct collaboration with technology companies and large banks can do in-depth research and find a variety of ways to apply Fintech in business models and enhance the customer banking experience. Banks can provide a variety of products with a different range through Fintech Adoption such as an Electronic Fix deposit account, in this account, customers can create fix deposit on their home rather than visit the bank physically.

Author Contributions:

Mujtaba Ahmed worked on Literature Review, Hypothesis Development, Software, results, discussion and supervision. Anand Kumar worked on Introduction, Data Analysis and Findings, Methodology and Conceptualization. Muhammad Talha worked on Introduction, methodology, validation, and resources. Zuhaib Akram worked on Introduction, literature review, Limitation and Recommendations. Kashif Arif worked on Language, Discussion, Overall review and investigation, formal analysis, writing—review and editing, and project administration.

Funding:

This research received no external funding.

Institutional Review Board Statement:

Not Applicable.

Informed Consent Statement:

Not Applicable.

Data Availability Statement:

Not Applicable.

Acknowledgments:

None.

Conflicts of Interest:

None.

Reference:

- Ahn, K., & Cho, J.-S. (2019). Major concerns of FinTech (Financial Technology) services in the Korean market. *Journal of Business and Retail Management Research*, 14(1), 123-133. <https://doi.org/10.24052/JBRMR/V14IS01/ART-11>
- Alt, R., Fridgen, G., & Chang, Y. (2024). The future of fintech—Towards ubiquitous financial services. *Electronic Markets*, 34(1), 3. <https://doi.org/10.1007/s12525-023-00687-8>

- Anjalika, W., & Priyanath, H. (2018). Effect of service quality on customer satisfaction: An empirical study of customers who have bank accounts in both public and private banks in Sri Lanka. *International Journal of Marketing and Technology*, 8(1), 11-36.
- Arner, D., Buckley, R., Charamba, K., Sergeev, A., & Zetzsche, D. (2022). Governing FinTech 4.0: BigTech, platform finance, and sustainable development. *Fordham J. Corp. & Fin. L.*, 27, 1. <http://dx.doi.org/10.2139/ssrn.3915275>
- Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Didenko, A. N. (2023). Monetary Hegemony, Technological Evolution and the International Monetary System. *Boston University International Law Journal*, Forthcoming. <http://dx.doi.org/10.2139/ssrn.4613622>
- Baig, U., Zehra, S., Anjum, S., & Hussain, M. (2022). FinTech Past and Future: Ecosystem, Business Model, and its Proximate Challenges. *Pakistan Business Review*. <https://doi.org/10.22555/pbr.v24i1.645>
- Bank, W. (2021). *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. Retrieved from <https://www.google.com/search?client=firefox-b-d&q=The+Global+Findex+Database+2021%3A+Financial+Inclusion%2C+Digital+Payments%2C+and+Resilience+in+the+Age+of+COVID-19>.
- Bokhari, H. (2022). *Digital Financial Inclusion of the Informal Sector: The case of Raast Platform in Pakistan*. Paper presented at the Proceedings of the 15th International Conference on Theory and Practice of Electronic Governance.
- Bömer, M. (2020). Competitiveness of Fintech: An Investigation into Different Levels of Competitiveness Using Young Enterprises from the Financial Technology Industry. *Heinrich Heine University Duesseldorf*. Retrived from <https://d-nb.info/1221365134/34>
- Butt, S., & Khan, Z. A. (2019). Fintech in Pakistan: a qualitative study of bank's strategic planning for an investment in fin-tech company and its challenges. *Independent Journal of Management & Production*, 10(6), 2092-2101. <https://doi.org/10.14807/ijmp.v10i6.947>
- da Silva, F. R. (2022). Impact of Fintech Firms on the Performance of Traditional Banks. https://sigarra.up.pt/fep/pt/pub_geral.show_file?pi_doc_id=373474
- Dwivedi, P., Alabdooli, J. I., & Dwivedi, R. (2021). Role of FinTech adoption for competitiveness and performance of the bank: a study of banking industry in UAE. *International Journal of Global Business and Competitiveness*, 16(2), https://doi.org/130-138_10.1007/s42943-021-00033-9
- Elsaid, H. M. (2023). A review of literature directions regarding the impact of fintech firms on the banking industry. *Qualitative Research in Financial Markets*, 15(5), 693-711. <https://doi.org/10.1108/QRFM-10-2020-0197>
- Farida, I., & Setiawan, D. (2022). Business strategies and competitive advantage: the role of performance and innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 163. <https://doi.org/10.3390/joitmc8030163>
- Feyen, E., Frost, J., Gambacorta, L., Natarajan, H., & Saal, M. (2021). Fintech and the digital transformation of financial services: implications for market structure and public policy. *BIS Papers*. Bank for International Settlements, number 117, July, <https://ideas.repec.org/b/bis/bisbps/117.html>
- Gladden, M. (2020). *Authority of Asosiasi Fintech Pendanaan Bersama Indonesia (AFPI) in Determining the Amount of Loan Interest Rates Limit in Peer to Peer Lending (P2P Lending) Business Activities*. Paper presented at the The 2nd Tarumanagara International Conference on the Applications of Social Sciences and Humanities (TICASH 2020). <https://doi.org/10.2991/assehr.k.201209.117>

- Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, 87, 537-580. <https://doi.org/10.1007/s11573-017-0852-x>
- Hasan, M. (2023). The Impact of Financial Technology (Fintech) on the Financial and Banking Services Sector and Its Applications in the Islamic Financial Industry. Available at SSRN 4369683. <http://dx.doi.org/10.2139/ssrn.4369683>
- Klößner, M., Kurpjuweit, S., Velu, C., & Wagner, S. M. (2020). Does blockchain for 3D printing offer opportunities for business model innovation? *Research-Technology Management*, 63(4), 18-27. https://www.ifm.eng.cam.ac.uk/uploads/Research/BMI/Cambridge_BMI_Working_Papers_02_2020.pdf
- Leong, K., & Sung, A. (2018). FinTech (Financial Technology): What is it and how to use technologies to create business value in fintech way? *International Journal of Innovation, Management and Technology*, 9(2), 74-78. <https://doi.org/10.18178/ijimt.2018.9.2.791>
- Liu, H., Yao, P., Latif, S., Aslam, S., & Iqbal, N. (2022). Impact of Green financing, FinTech, and financial inclusion on energy efficiency. *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-021-16949-x>
- McKibbin, W., & Fernando, R. (2021). The global macroeconomic impacts of COVID-19: Seven scenarios. *Asian Economic Papers*, 20(2), 1-30. <https://www.brookings.edu/articles/the-global-macroeconomic-impacts-of-covid-19-seven-scenarios/>
- Naz, S., Asif, M., & Hameed, S. (2023). Fintech's role in sustainable banking performance: are green banking policies driving sustainability in Pakistan's banking system? *Gomal University Journal of Research*, 39(3), 294-312. <https://doi.org/10.51380/gujr-39-03-04>
- Obeidat, M., & Saxena, J. (2015). Customer's acceptance of internet banking in Dubai. *IOSR Journal of Business and Management*, 17(12), 61-80. <https://doi.org/10.9790/487X-171236180>
- Schueffel, P. (2016). Taming the beast: A scientific definition of fintech. *Journal of Innovation Management*, 4(4), 32-54. <https://doi.org/10.2139/ssrn.3097312>
- Shin, Y. J., & Choi, Y. (2019). Feasibility of the FinTech industry as an innovation platform for sustainable economic growth in Korea. *Sustainability*, 11(19), 5351. <https://doi.org/10.3390/su11195351>
- Shirish, A., Srivastava, S. C., & Panteli, N. (2023). Management and sustenance of digital transformations in the Irish microbusiness sector: examining the key role of microbusiness owner-manager. *European Journal of Information Systems*, 1-25. <https://doi.org/10.1080/0960085X.2023.2166431>
- Siddique, M., Ali, K., Khan, M. S., & Liaquat, I. (2022). A qualitative assessment on the E-Banking Adoption in Banks: A case of HBL Pakistan. *Competitive Social Science Research Journal*, 3(1), 691-704.
- Stulz, R. M. (2019). Fintech, bigtech, and the future of banks. *Journal of Applied Corporate Finance*, 31(4), 86-97. <https://doi.org/10.1111/jacf.12492>
- Torres, N. M. S. (2022). Awareness of new payment technologies in the digital banking transformation-Accelerated by the COVID 19 pandemic. <https://doi.org/10.13140/RG.2.2.22197.35043>
- Wang, X., Cao, Y., Feng, Z., Lu, M., & Shan, Y. (2023). Local FinTech development and stock price crash risk. *Finance Research Letters*, 53, 103644. <https://doi.org/10.1016/j.frl.2023.103644>
- Yan, C., Siddik, A. B., Akter, N., & Dong, Q. (2021). Factors influencing the adoption intention of using mobile financial service during the COVID-19 pandemic: The role of FinTech. *Environmental Science and Pollution Research*, 1-19. <https://doi.org/10.1007/s11356-021-17437-y>
- Zaidi, S. A. M., & Shah, S. A. A. (2023). Fintech contribution towards economic prosperity in Pakistan. *Pakistan Review of Social Sciences (PRSS)*, 4(1), 1-14.