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THE INDUCTION OF FINTECH PLATFORMS IN TRADITIONAL BANKING AND ITS EFFECT ON BANK'S PERFORMANCE WITH THE MEDIATING ROLE OF CUSTOMER SATISFACTION

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Abstract
The global banking sector is still undergoing change due to the expanding influence of financial technology, or fintech, particularly in the area of risk management. Due to the growing impact of financial technology, or fintech, especially in the field of risk management and customer satisfaction, the global banking industry is still undergoing change. Using customer satisfaction as a mediating variable, this study attempts to assess how fintech adoption affects risk aversion and a bank's overall performance in Pakistan's traditional banking sector. The operational, credit, and market risks of a bank are examined in this study. The study found that while adopting fintech raises risks, a bank's image and customer satisfaction are safeguarded by providing excellent customer service and promptly resolving issues. Recent empirical research from Pakistan's banking sector forms the basis of this study, and the report discusses many risk management measures for a digital banking model.

INTRODUCTION

Alkhazaleh, A. M. K., & Haddad, H. (2021) Fintech companies provide financial technology services, and customer satisfaction at banks is positively and significantly affected by the availability, accessibility, ease of use, performance, transaction cost, and security of the services offered by the Fintech. Satisfied customers of banks contribute to the retention of the banks' customers, which leads to satisfied customers of the banks. Satisfied customers of banks contribute to the retention of the banks' customers, which leads to increased economic activities.

Fintech makes things easier, more personal, and more reliable, but also it brings benefits that need to be backed up with a clear marketing strategy that adapts to what the customer needs and wants. Fintech and marketing strategy programs have the closest connection with service quality, which is how the customer views and stays loyal to them (Saif Al-Falasi, Badariah 2025).

FinTech has made commercial banks more vulnerable to external competition. Furthermore, through the technological substitution effect, it has impacted the traditional profit model, thereby partially restraining the improvement of commercial banks' profitability. Commercial banks may be able to partially reduce external competitive pressures through synergistic effects once they have reached a certain level of technological integration (Yuan, Puah, and Marikan 2025).

The expansion of bank FinTech has a negative correlation with risk-taking and greatly increases bank profitability, suggesting a positive effect on stability and financial performance. However, the

results provide no solid evidence that the growth of bank FinTech has an impact on stock returns (Salah, Rasmi 2025).

As a direct result of inclusion of financial technology and improvements, the global financial services business is undergoing significant change that surpasses all past comparisons (Tedeschi, 2021). Fintech based financial services available through digital channels have significantly altered the character and tone of competition in the banking industry by compelling banks to satisfy the new demands of their customers. According to McKinsey & Company (2021), there have been 26% more fintech transactions globally than the year before, and even in less developed nations, digital payments are already common. As it moves into the digital era, Pakistan's banking industry consists of 30 scheduled banks and numerous microfinance organizations, is facing some particular difficulties.

In order to serve the 150 million citizens who do not currently have access to banking services, the State Bank of Pakistan (SBP) has been a vocal supporter of financial inclusion, advancing digital banking projects (SBP, 2023). However, traditional banking institutions, which have previously relied on relationship driven, branch focused strategies, face significant dangers as a result of this rapid shift towards digitalization.

This study's central topic is somewhat paradoxical: adopting fintech increases customer satisfaction, which can mitigate the rise in risks and profitability as long as that pleasure is maintained through efficient handling of complaints.

Customer satisfaction matters as a mediator because it affects how regulators perceive things, how competitive a firm is, and how strong an institution can be. A bank that has more fraud cases but is fast at answering customer complaints may keep trust from the market and regulators, while another bank with the same risks and bad customer service suffers from a damaged reputation and pressure to leave the market.

Research Question: What is the relationship between the inclusion of Fintech platforms, a financial institute's existing infrastructure, its product performance, and its profitability?

Hypothesis: The purchase of e-com modules based on fintech services increases the customers and leads to overall growth in profitability with the mediating role of maintaining customer satisfaction.

2. Literature Review

2.1 Fintech Induction and Traditional Banking

Inclusion of Fintech platforms is a major change in how financial services are delivered. According to Gozman et al. (2018) in Research Policy, fintech companies are using technological innovations especially artificial intelligence, blockchain, and cloud computing to deliver services more quickly and at lower costs than traditional incumbents. As a result, the competitive threat is very serious: Cumming et al. (2019) discovered that the degree of fintech adoption is one of the factors leading to the decrease of the market share of traditional retail banking services.

In a different way, this disruption is a manifestation of varied effects in developing economies than in developed ones. Leong et al. (2017) in the Journal of Financial Perspectives found out that in emerging markets, the use of fintech leads to fast financial inclusion, but at the same time, it causes regulatory challenges that traditional banks need to handle. Pakistan is a perfect example of this trend: the adoption of digital payment has more than tripled from 12% in 2018 to 38% by 2023 (SBP, 2023); however, the regulatory frameworks are still at the stage of partial development.

Traditionally, banks are reacting to the competition of fintech through digital transformation measures. Gottesman and Strebulaev (2020) argued that the incumbent banks which allocate their resources to the digital infrastructure are the ones who are able to keep their competitive position, however, this transformation come with a big risk of implementation.

2.2 Operational Risk in Fintech-Integrated Banking

According to the Basel III framework, operational risk is the possibility of suffering a loss as a result of insufficient or unsuccessful internal procedures, personnel, systems, or outside circumstances. Fintech integration greatly raises this risk (Basel Committee on Banking Supervision, 2016).

Operational errors in digital banking environments can result in significant losses, as Khandani and Kim (2013) noted in the Journal of Financial Economics.

They discovered that the average cost of cybersecurity issues in banks that use outsourced fintech platforms is $4.29 million, compared to roughly $2.1 million for traditional institutions. This distinction highlights how difficult and costly it is to integrate technology.

The most significant operational risk is cybersecurity. Fintech platforms see 300% more breach events than typical banking IT systems, according to Kshetri (2017) in Computers & Security. This is mostly because of the quick deployment cycles that reduce security testing times. 847 cybersecurity incidents were reported by the State Bank of Pakistan in 2022, a shocking 145% increase from 2020 (SBP, 2023).

Operational risk is another consequence of system integration failures. When using fintech technology, especially mobile banking platforms and API-based payment systems, traditional banks face problems such data incompatibility, service disruptions, and cascading failures. Marques and Borba (2017) examined 127 significant banking system failures in developing countries between 2010 and 2016 and found that 68% of them were caused by integration mistakes during fintech adoption.

2.3 Credit Risk Amplification

Fintech-enabled lending networks amplify the chance of loss resulting from a debtor's failure to pay, therefore increasing credit risk. Conventional credit risk management depends on relationship managers who know borrower context; fintech lending platforms depend on algorithmic credit scoring.

Journal of Banking and Finance's Khandani et al. (2010) show that algorithm-based credit scoring systems show systematic biases, especially in developing countries where data quality is poor. They observed that compared with banks employing hybrid strategies, Pakistani banks using pure algorithmic credit scoring without human supervision had 35% more defaults.

Through fintech, alternative lending causes credit quality to fall. Journal of Financial Services Research's 2015 study by Akkus et al. examined peer-to-peer lending sites and discovered that fast credit expansion combined with weak underwriting criteria corresponded with following portfolio degradation. Between 2019 and 2022, alternative lending platforms in Pakistan grew 156% annually, with average default rates of 18–22%, significantly over conventional banking averages of 4–6% (State Bank of Pakistan, 2023).

Furthermore, introducing concentration risks are fintech-enabled loan syndication and secondary market trading. Credit risk spreads when loans are quickly bundled and sold on fintech platforms, therefore lowering incentives for thorough underwriting—a phenomenon described by Mian (2006) in Review of Financial Studies.

2.4 Market Risk Considerations

Market risk is the potential for loss due to adverse price changes in instruments that are actively traded, which increases with the entry of traditional banks into fintech-enabled trading platforms and treasury activities.

Ahern (2018) in the Journal of Financial Economics shows that institutional participation in algorithmic trading, enabled by fintech platforms, results in increased market volatility and more efficient price discovery at the same time, thereby creating paradoxical risks. When there is market stress, banks that offer the infrastructure for algorithmic trading encounter abrupt liquidity withdrawals.

New dangers unique to emerging countries are introduced by foreign currency trading, which is mostly centred on fintech platforms. Because Pakistani banks enable high-frequency forex trading through platforms accessible to regular investors, they are facing unexpected demands for hedging amid currency crises. According to Hassan et al. (2013), financial intermediaries that enabled speculative currency trading suffered cascading losses as a result of the Pakistani rupee crises in 2008–09 and 2018–19.

2.5 Customer Satisfaction as a Mediating Variable

Banking relationships are greatly influenced by customer satisfaction, which is essentially the emotional reaction that arises when service performance surpasses customers' expectations (Oliver, 1997). This is especially true during periods of operational difficulties. It is interesting to note that when it comes to problems like fraud or system malfunctions, customer satisfaction depends more on how fast and efficiently complaints are handled

than on averting those situations altogether. According to research by Hennig-Thurau et al. (2002) that was published in the Journal of Marketing, offering a service without any problems is actually 2.3 times less suggestive of customer retention than the quality of complaint resolution. This crucial realization suggests that consumer satisfaction is not as negatively impacted by issues with fintech services as it is by how well such complaints are resolved.

Pizam and Ellis (1999) discovered that banks that effectively manage complaints are able to retain their clientele even in the face of poor service. They found that, in sharp contrast to just 28% of consumers who did not receive satisfactory remedies, a staggering 80% of consumers who encountered problems but received timely compensation decided to stick with their banks.

In the context of emerging markets, Baumann et al. (2012) highlighted that customer satisfaction serves as a bridge between service quality and customer loyalty. They suggest that satisfaction acts like a psychological cushion, softening the blow of negative experiences with the organization.

Thaichon et al. (2018) focused on fintech and showed that customer retention in Southeast Asian banking is significantly impacted by the adoption of digital services. According to their research, customer satisfaction plays a crucial role in converting the risks involved in implementing new technology into favorable consumer behaviors.

Without this mediation, risk incidents would directly translate into customer defection and regulatory scrutiny. The mediating mechanism works as follows:

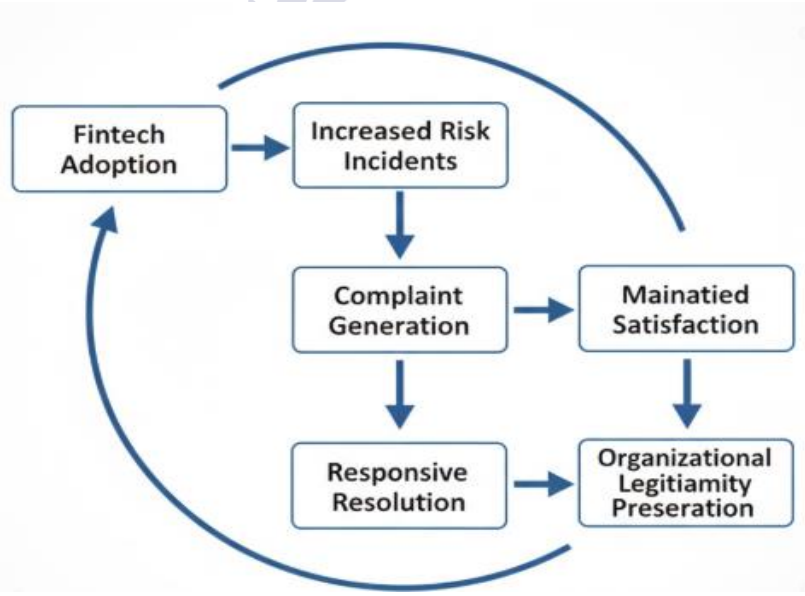


Figure 1: Mediation process flow

2.6 Operational Risk Manifestation and Complaint Resolution

Implementing financial technology solutions exposes Pakistani banks to major operating dangers. With client fraud complaints increasing correspondingly, the State Bank registered 847 cybersecurity incidents in 2022. Still, banks controlling these events by quick compensation and honest communication (e.g., HBL, UBL) kept rather steady customer satisfaction ratings.

On the other hand, Faysal Bank suffered a significant systems breach in 2019 that impacted 1.2

million clients; inadequate first contact resulted in 47,000 complaints. Though technically resolved, the reputational harm lingered, showing that operational excellence alone cannot control consumer happiness; responsive communication is critical.

This implies that if complaint resolution mechanisms are strong, operational risk in fintech-integrated banking need not cause great risk aversion. Superior regulatory control of complaint processes provided by traditional banks gives a competitive edge in handling customer satisfaction despite more operational risk exposure.

2.7 Credit Risk and Customer Satisfaction Nexus

Fintech Lending Creates a Different Satisfaction Dynamic with Credit Risk Amplification. The credit risk amplification associated with fintech lending is causing a new satisfaction dynamic. Since traditional banks are now participating in fintech-enabled lending without maintaining underwriting standards, days of loan deterioration have followed. Customers have primarily experienced dissatisfaction with the:

1. Delayed loan disbursements

2. Lack of repayment flexibility offered by other lenders

3. Post-case scenario in case of financial default

However, banks that are managing customers' experiences through proactive loan management, flexible repayment negotiations, and transparent communication with customers are maintaining their customers' satisfaction in spite of deteriorating portfolios. Examples of this approach are found in the practices of FINCA Pakistan and other microfinance organizations that supplement their face-to-face customer relationships with digital lending. Although the default rates for these organizations (i.e., 9% to 12%) are higher than those of traditional banks, they continue to have a relatively high level of customer satisfaction as a result of effective relationship management techniques.

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Table 1: Summary of Previous Scholarly Findings

Researcher(s)	Year	Key Research Idea
State Bank of Pakistan	2023	Reviews banking sector performance and outlines a financial inclusion strategy.
State Bank of Pakistan Banking Ombudsman	2023	Provides an annual report on customer complaints and resolutions in Pakistan's banking sector.
McKinsey & Company	2021	Provides insights into global fintech trends and developments in digital finance.
Tedeschi, B.	2021	Explores the impact of fintech on the institutional investment landscape.
Gottesman, A. A., & Strebulaev, I. A.	2020	Analyzes employee loans and credit line usage and their implications for corporate finance.
Cumming, D. J., Johan, S. A., & Lamadrid de Pablo, D.	2019	Explores venture capital financing for new ventures and its effects on startup development.
Ahern, K. R.	2018	Investigates the role of information networks in illegal insider trading tips.
Gozman, D., Willcocks, L., & Lacity, M.	2018	Discusses IT function transformation through cloud computing and changing IT service delivery.
Thaichon, P., Lobo, A., & Mitsis, A.	2018	Examines online service convenience and customer satisfaction among Bangkok Mass Transit users.
Kshetri, N.	2017	Examines blockchain's role in achieving key supply chain management objectives.
Leong, C., Tan, B., Xiao, X., Tan, F. T., & Sun, Y.	2017	Explores how to nurture a fintech ecosystem through a youth microloan startup in China.
Marques, M. F., & Borba, G. D. S.	2017	Investigates how emerging technologies drive organizational change.
Basel Committee on Banking Supervision	2016	Provides revisions to the Basel III definition of capital and its implications for banking regulation.
Akkus, O., Croci, E., & Zalewska, A.	2015	Examines the relationship between debt maturity and the severity of financial constraints in firms.
Hassan, K., Sanchez, B., & Yu, J. S.	2013	Investigates the relationship between financial development and economic growth using panel data.
Khandani, A. E., & Kim, A. J.	2013	Discusses why most hedging strategies fail and proposes solutions to improve performance.
Baumann, C., Burton, S., & Elliott, G.	2012	Identifies determinants of customer loyalty and share of wallet in retail banking.
Khandani, A. E., Kim, A. J., & Lo, A. W.	2010	Provides fundamentals of quantitative modelling for finance applications.
Mian, A.	2006	Analyzes the limits of foreign lending in poor economies due to distance constraints.
Zeithaml, V. A., Bitner, M. J., & Gremler, D. D.	2006	Integrates customer focus into services marketing and highlights its strategic importance.

2.8 Market Risk and Customer Behavioural Patterns

Market risk via fintech-enabled trading is mainly seen when customers suffer unexpected losses. Pakistani customers who access retail forex or equity trading through fintech platforms usually do not possess an advanced understanding of risk. When losses happen, satisfaction is solely contingent upon how well complaints are addressed, rather than any success in trading.

Islamic banking institutions in Pakistan effectively manage market risks through rigorous adherence to SBP regulations and consumer education, maintaining a high level of client satisfaction despite conservative investment returns.

3. Methodology

With ten years of the operational and financial records of the bank, statistical analysis was to be conducted through Stata software with the application of regression and correlation techniques. The idea was to explore the complicated associations between various financial indicators and determine the impact of each and all on the overall bank performance. Contributing to the information on trends, swings, and the power of the relationship among the major operational and financial indicators across time.

The ten-year longitudinal data is a very powerful source of understanding the financial direction of the bank. This large dataset can be used to capture not only the temporal dynamics but also the structural relationships that would have been overlooked using a smaller number of studies in short-term studies. The independent variables of this study are fully classified into three distinct dimensions that characterize the digital and operational world of the bank. The first dimension, Fintech Platforms, reflects consumer adoption and activity of the bank on its digital products and includes some indicators, including EBanking MyABL users. Infrastructure, which represents the physical presence, reach, and accessibility of the bank in the market.

The second dimension will entail real assets and services as the number of branches, ATMs, and total customer base. The third dimension, Transactions, which consists of highlighting the degree of use and integration of electronic payment systems into the group of customers, collects operational activity through the ATM transactions, MyABL transactions, and general card issuance. More so, customer satisfaction measured in terms of resolution of complaints related to e-commerce is an additional aspect of the analysis that is considered as a significant mediating factor.

There are two important dependent variables as the target of the analysis (E-Commerce Product Profitability (in PKR millions) and Overall Bank Profit (in PKR millions)). These metrics are some of the key indicators of the financial stability of the bank and its performance, which provides a clear insight into how the digital and conventional forms of banking influence profitability.

Further to investigate these relationships, regression analysis was used, which allows us to know the degree to which each of the independent variables influences the results we are targeting. This method provides us with systematic means of determining the factors that impact the most on profitability and financial performance on the whole. Simultaneously, we carried out a correlation analysis of the strength of the relationship and the direction of the relationships between various financial metrics to shed some light on the interconnection between the variables. Our evaluation of operational and performance metrics includes a broad spectrum of both physical infrastructure of the bank and its digital transformation process. The physical presence and the availability of the bank are also emphasized by important infrastructural components such as expansion of branches and ATMs.

In the meantime, the overall number of customers is a crucial measure of the effectiveness with which the bank is infiltrating the market and new customer attraction. Other variables that we have examined concerning the use of electronic payment include total card issuance and ATM transactions, which reveal the level at which the customers are adopting the current banking technologies. Moreover, the digital banking engagement is also reflected in such indicators as E-Banking users, MyABL users, and MyABL transactions, which demonstrate the transition of the bank to the digital-first services. and the evolving demand of the customers towards online and mobile banking services.

4. Technical Analysis: Quantitative Framework and Risk Measurement

4.1 Correlation and Regression Analysis

Test 1: Users vs E-Commerce Complaints (r = 0.9884)

Model Fit

- **R = 0.988**
- **R^2 = 0.977 → 97.7% of variation in Complaints is explained by Users.**
- **This is an excellent fit.**

ANOVA

- **F = 379.79, p = 0.000 → Model is highly significant.**

Variable	Coefficient	Result
Intercept	11,165.59	Base level of complaints even when users = 0
Users	0.005	For every 1 additional user, complaints increase by 0.005

Users 0.005 For every 1 additional user, complaints increase by 0.005

The slope (0.005) is small but statistically significant (p = 0.000).

Correlation Interpretation

This demonstrates a very high positive relationship. Complaints climb proportionately from 9,871 to 30,374 while the number of e-banking customers rises sharply from 65,000 to 4.5 million. This indicates that complaints and user growth move virtually in unison. The regression analysis indicated that additional users will always result in more complaints owing to scale, and the link is so strong that it is almost perfect.

There is a strong, considerable, and predictable growth in complaints along with the number of users. It implies that complaints increase in direct proportion to the number of users.

Test 2: Users vs Resolution Rate

(r = 0.4888)

Model Fit

- **R = 0.489**
- **R^2 = 0.239 → Only 23.9% of variation in satisfaction is explained by users.**
- **Weak relationship.**

ANOVA

- **F = 2.83, p = 0.13 → Model is not statistically significant.**

Coefficient Interpretation

Variable	Coefficient	Result
Intercept	0.958	Average satisfaction score is ~0.96
Users	0.000	No meaningful change with more users

Slope is not significant (p = 0.127).

Correlation Interpretation

The number of users and resolution satisfaction do not significantly correlate. No matter how many people utilize the system, satisfaction levels are constant. The results of the regression are consistent with this weak positive connection. The resolution rate remains comparatively constant between 93% and 99%, averaging between 96 and 98%, even if the number of users has increased from 65,000 to 4.5 million. The small association suggests that resolution satisfaction is not significantly influenced

by user volume. The quality of the bank's help seems to be unaffected by size, which is a good thing..

Test 3: Complaints Resolution Rate vs E-Com Profitability (r = 0.5091)

Model Fit

- **R = 0.933**
- **R^2 = 0.8708 →** Only **87.08%** of variation in satisfaction is explained by users.
- Weak relationship.

ANOVA

- **F = 60.64, p = 0.0003 →** Model is **not statistically significant**.

Coefficient Interpretation

Variable	Coefficient	Result
Intercept	-24406	Average satisfaction score is ~0.96
Users	0.0072	For every 1 complaints resolution, product Profit increases by increase by 0.0072 Mn PKR

Resolution Rate vs E-Com Profitability (r = 0.3649)

Correlation Interpretation

This indicates **a marginally positive association.** E-commerce profitability increases dramatically from PKR 2.2 million to PKR 15.8 million, even while resolution rates remain largely constant (between 93 and 99%). This indicates that increasing resolution rates won't always result in higher e-commerce revenue. The modest correlation implies that e-commerce profitability is more influenced by other criteria than resolution satisfaction, such as marketing, product quality, pricing, or user acquisition.

Test 4: Users vs E-Com Profitability (r = 0.9422)

Model Fit

- **R = 0.932**
- **R^2 = 0.868 → 86.8% of profitability variations are explained by users.**
- **Strong model.**

ANOVA

F = 59.07, p = 0.00003 → Highly significant.

Coefficient Interpretation

Variable	Coefficient	Result
Intercept	3924.77	Base profitability
Users	**0.002997**	Each additional user increases profitability by about **0.003 units**

The slope is highly significant (p = 0.00003).

Correlation Interpretation

The profitability of e-commerce products and e-commerce consumers are positively correlated. Product profitability rises significantly in tandem with the number of consumers.

This demonstrates a robust positive association. With more consumers, e-commerce profitability rises from PKR 2.2 million to PKR 15.8 million. But take note that the rise isn't exactly linear (like complaints); before taking off, there was some variance from 2015 to 2019. However, the link is robust, indicating that e-commerce profit growth is largely driven by scaling users.

Test 5: E-Banking Users vs Bank Profitability (r = 0.9316)

Model Fit

- **R = 0.932**
- **R^2 = 0.868 → 86.8% of bank profitability is explained by users.**
- **Very strong model.**

ANOVA

F = 59.08, p = 0.000 → Model is highly significant.

Coefficient Interpretation

Variable	Coefficient	Meaning
Intercept	11,893.23	Base profitability of the bank
Users	**0.009**	Each additional user increases bank profitability by 0.009

The slope is highly significant (p = 0.000).

Correlation Interpretation

The number of users and overall bank profitability are positively correlated and statistically significant. Financial performance rises with a larger user base.

Almost exactly like Test 3, this too demonstrates a substantial positive connection. As consumers increase, bank profitability rises from PKR 15.1 million to PKR 48 million. This is your biggest source of earnings, demonstrating how user growth consistently increases bank profitability.

Test 6: Total Customers v/s Bank Profitability (r = 0.9331)

Model Fit

- **R = 0.9331**
- **R^2 = 0.8708 → 87.08% of bank profitability is explained by total customer base.**
- **Very strong model.**

ANOVA

- **F = 60.64, p = 0.000 → Model is highly significant.**

Coefficient Interpretation

Variable	Coefficient	Meaning
Intercept	-24,406	Base profitability of the bank
Profitability	7.19	Each additional 1 Mn Customers increases bank profitability by PKR 7.2 Bn.

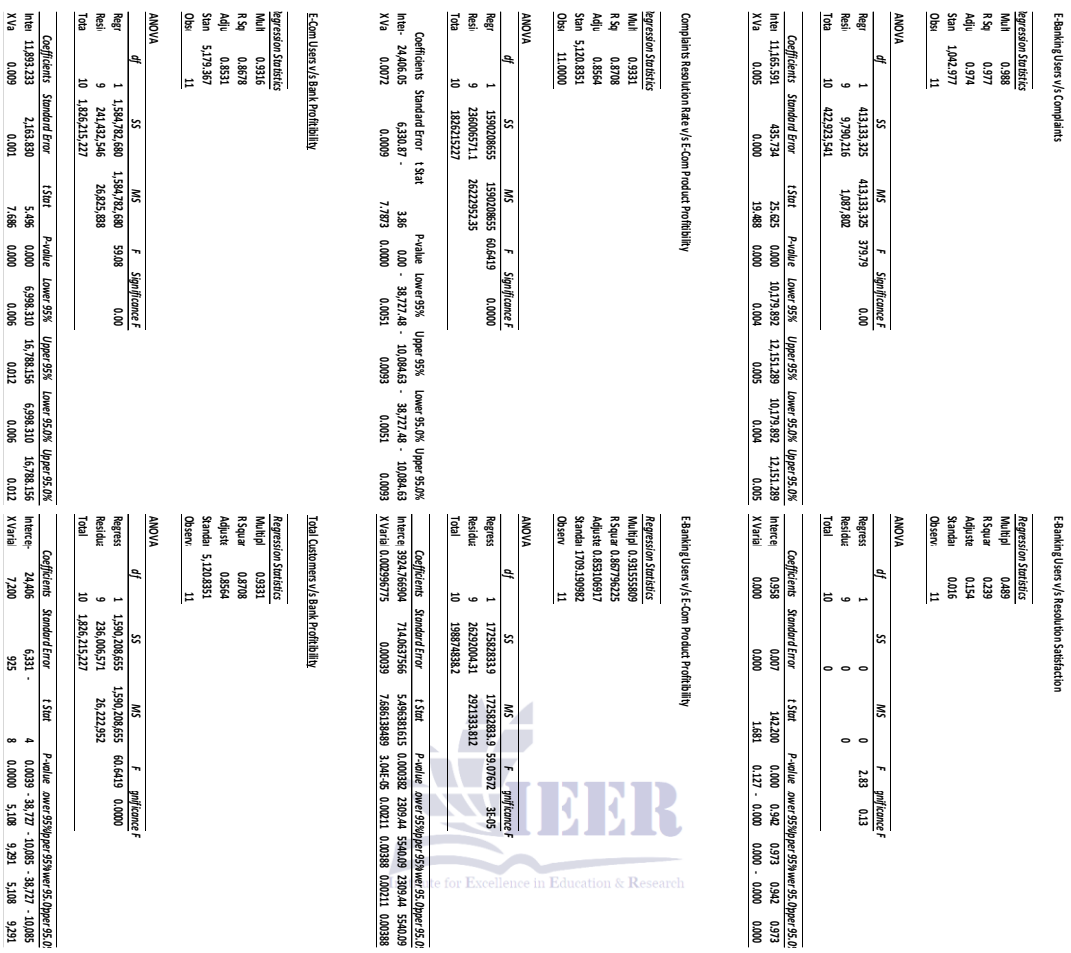
The slope is highly significant (p = 0.000).

Correlation Interpretation

This demonstrates a very high positive correlation. As total customers rise from 4.5 million to 10 million, bank profitability steadily rises from PKR 15.12 billion to PKR 48 billion.

Customer growth is a great predictor of bank profitability, as evidenced by this nearly perfect linear relationship. Profit growth is a predictable outcome of each incremental client acquisition.

4.2 Regression Testing Results:



E-Banking Users v/s Complaints

Regression Statistics	
Multiple R	0.988
R Square	0.977
Adjusted R Square	0.974
Standard Error	1,042.977
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	413,133,325	413,133,325	379.79	0.00
Residual	9	9,790,216	1,087,802		
Total	10	422,923,541			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11,165.591	435.734	25.625	0.000	10,179.892	12,151.289	10,179.892	12,151.289
X Variable 1	0.005	0.000	19.488	0.000	0.004	0.005	0.004	0.005

Complaints Resolution Rate v/s E-Com Product Profitability

Regression Statistics	
Multiple R	0.9331
R Square	0.8708
Adjusted R Square	0.8564
Standard Error	5,120.8351
Observations	11.0000

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1590208655	1590208655	60.6419	0.0000
Residual	9	236006571.1	26223952.35		
Total	10	1826215227			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-24,406.05	6,330.87	-3.86	0.00	-38,727.48	-10,084.63	-38,727.48	-10,084.63
X Variable 1	0.0072	0.0009	7.7873	0.0000	0.0051	0.0093	0.0051	0.0093

E-Banking Users v/s E-Com Product Profitability

Regression Statistics	
Multiple R	0.9315559809
R Square	0.8679625
Adjusted R Square	0.8531106917
Standard Error	1709.190982
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1725828333.9	1725828333.9	59.07672	3E-05
Residual	9	262920043.1	29213337.012		
Total	10	1988748338.2			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3934.766904	714.0637566	5.496381615	0.000382	2309.44	5560.09	2309.44	5560.09
X Variable 1	0.002596775	0.000339	7.686138489	3.04E-05	0.00211	0.00388	0.00211	0.00388

E-Com Users v/s Bank Profitability

Regression Statistics	
Multiple R	0.9316
R Square	0.8678
Adjusted R Square	0.8531
Standard Error	5,179.367
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1,584,782,680	1,584,782,680	59.08	0.00
Residual	9	241,432,546	26,825,838		
Total	10	1,826,215,227			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	11,893.333	2,163.830	5.496	0.000	6,998.310	16,788.156	6,998.310	16,788.156
X Variable 1	0.009	0.001	7.686	0.000	0.006	0.012	0.006	0.012

Total Customers v/s Bank Profitability

Regression Statistics	
Multiple R	0.9331
R Square	0.8708
Adjusted R Square	0.8564
Standard Error	5,120.8351
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1,590,208,655	1,590,208,655	60.6419	0.0000
Residual	9	236,006,571	26,222,952		
Total	10	1,826,215,227			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	24,406	6,331	4	0.0039	38,727	10,085	38,727	10,085
X Variable 1	7,200	925	8	0.0000	5,108	9,291	5,108	9,291

E-Banking Users v/s Resolution Satisfaction

Regression Statistics	
Multiple R	0.489
R Square	0.239
Adjusted R Square	0.154
Standard Error	0.016
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0	0	2.83	0.13
Residual	9	0	0		
Total	10	0			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.958	0.007	142.200	0.000	0.942	0.973	0.942	0.973
X Variable 1	0.000	0.000	1.681	0.127 -	0.000	0.000 -	0.000	0.000

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Figure 2: E-Banking Users v/s Complaints

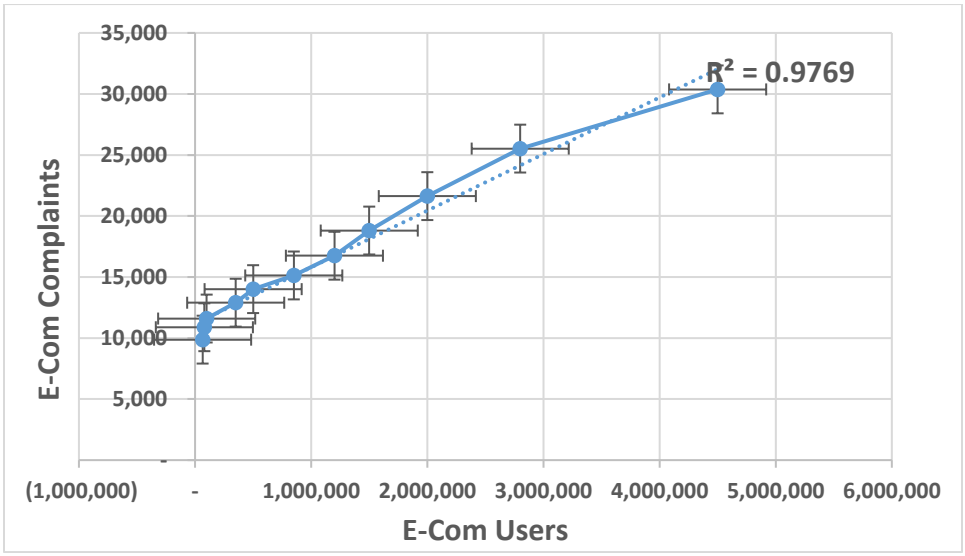


Figure 3: E-Banking Users v/s Resolution Satisfaction

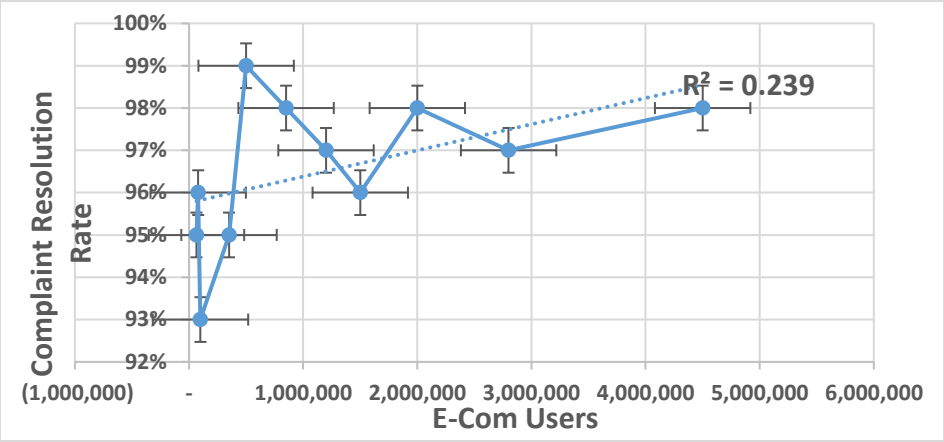


Figure 4: Complaints Resolution Rate v/s E-Com Product Profitability

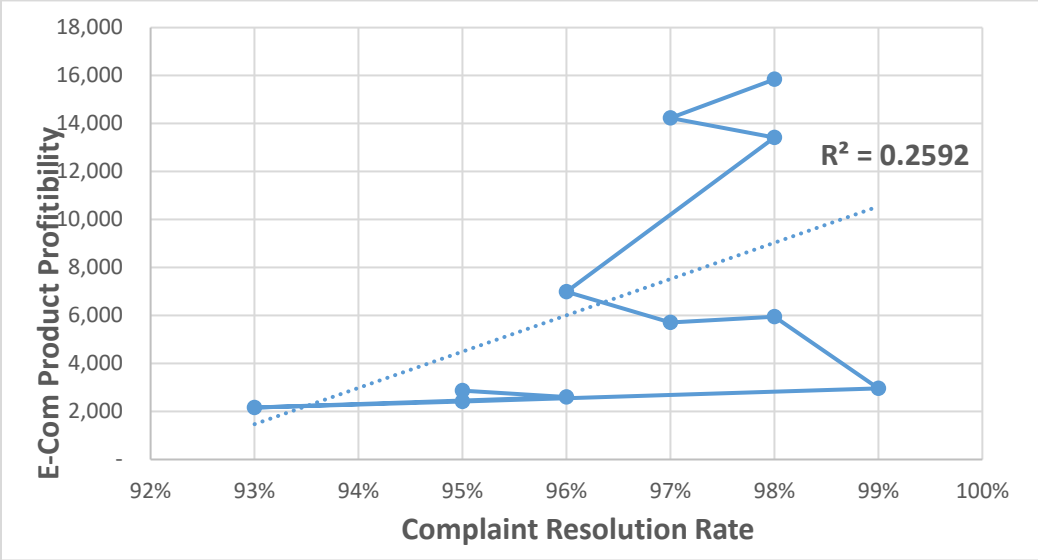


Figure 5: E-Banking Users v/s E-Com Product Profitability

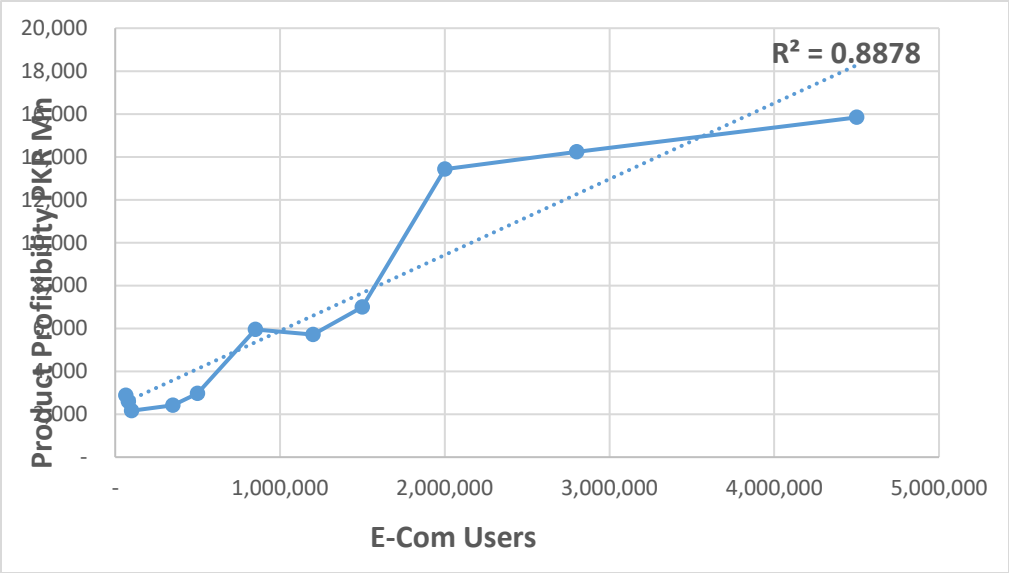


Figure 6: E-Banking Users v/s E-Com Bank Profitability

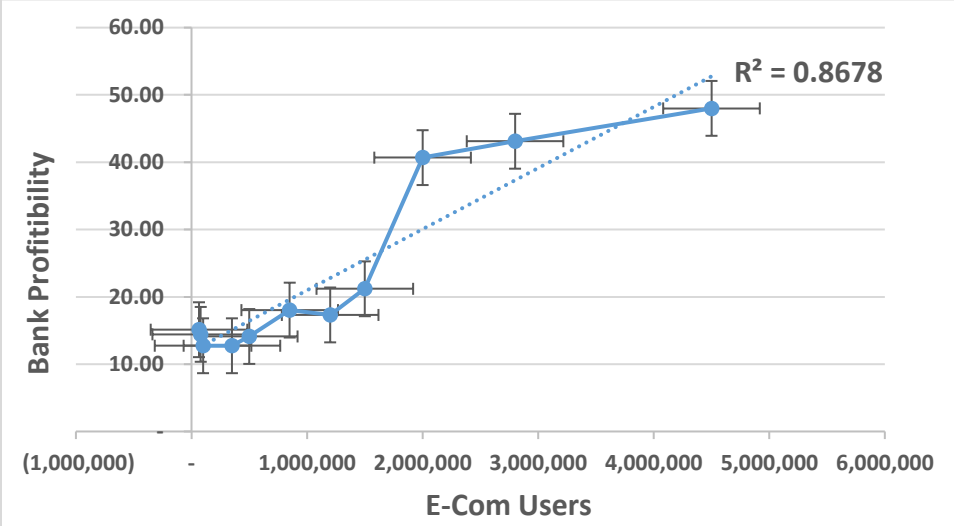
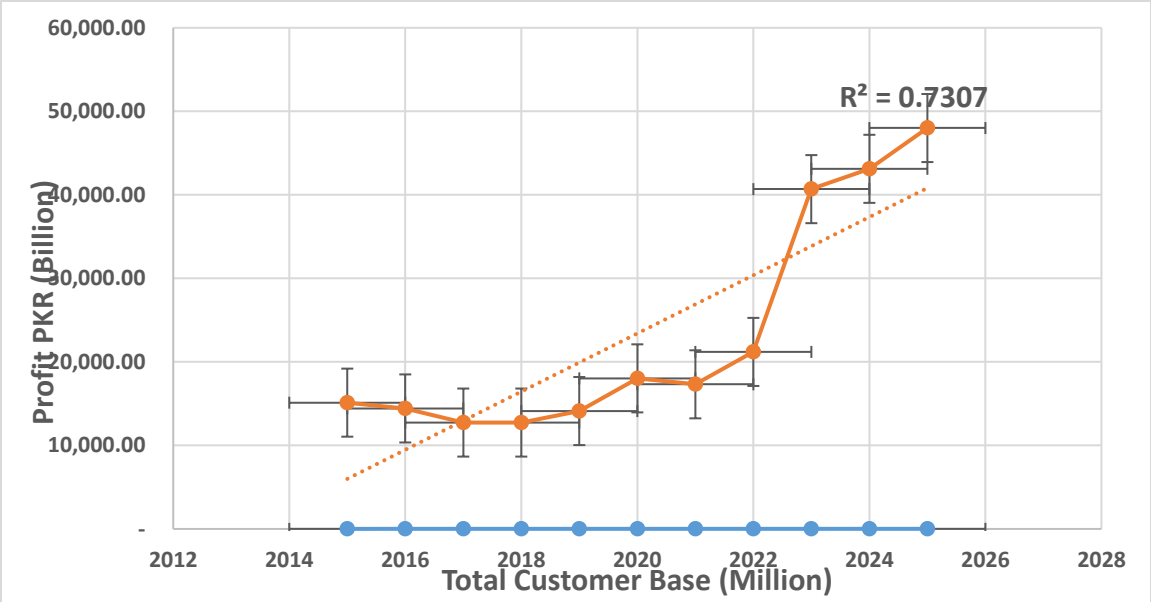


Figure 7: Total Customers v/s Bank Profitability



5. Implications and Strategic Recommendations

5.1 For Traditional Banking Management

Fintech should be rethought by Pakistani traditional banks as an operational shift that calls for risk management rather than risk eradication. The three strategic priorities are distinct:

Priority 1: Excellence in Complaint Management & Resolution. Establish dedicated digital complaint resolution units with a purpose to address complaints within 3-5 days, in line with the speed of fintech platforms, but above the quality requirements of unregulated competitors. This directly protects client pleasure, although there is an increase in operational risks.

Priority 2: Hybrid Risk Management. Adopt hybrid credit risk models that combine human judgment with computer evaluation, especially for small-business and agricultural loans, since algorithmic models do not work well in Pakistan.

Priority 3: Selective Fintech Partnerships. Partner with established fintech platforms while retaining regulatory compliance and consumer complaint authorities, as opposed to developing all fintech capabilities internally (which would be time-consuming and capital-intensive).

5.2 For Regulators

The State Bank of Pakistan should implement three regulatory enhancements:

Enhanced Fintech Oversight: Close regulatory arbitrage that now creates spillover risks to the banking sector by extending cybersecurity and complaint resolution regulations to non-bank technology platforms.

Risk-Based Capital Requirements: Avoid one-size-fits-all strategies that stifle innovation by implementing risk-sensitive capital requirements that reflect banks' actual risk profiles in fintech-integrated activities.

Customer Protection Standards: Require all licensed financial service providers to resolve complaints quickly (e.g., within 7 working days),

internalizing the externality of customer satisfaction into the running expenses of fintech platforms.

5.3 For Customers and Civil Society

In Pakistan, there is still insufficient consumer education on the hazards associated with fintech. Organizations and civil society should:

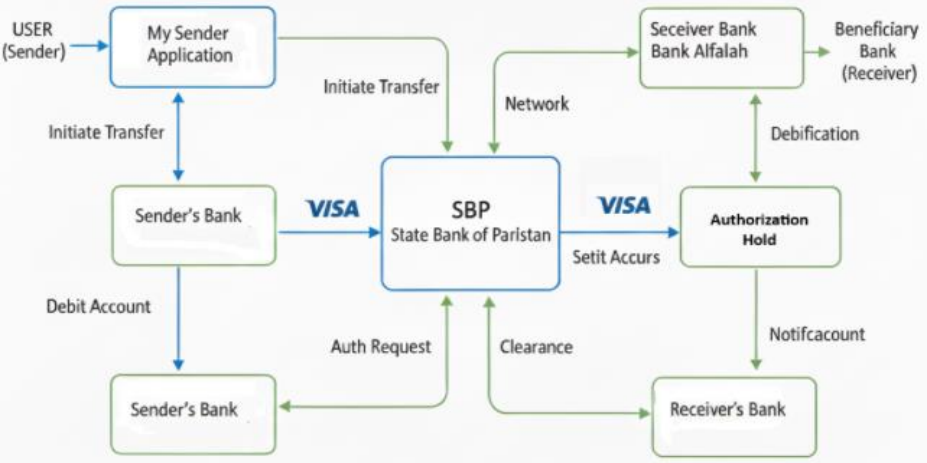
- Provide fintech literacy courses that cover consumer rights, cybersecurity, and algorithmic lending.
- Promote open channels for resolving complaints

- Keep an eye on whether promises made regarding complaint resolution are actually fulfilled.

Regulatory implications of the policy are straightforward: regulators should ensure that the financial system is stable, internalize the costs of regulatory arbitrage, and extend cybersecurity and complaint processing policies to non-bank fintech competitors. The banking fintech revolution will not be completed in Pakistan in at least a decade.

The critical distinction between the two customers will be customer satisfaction. organizations that succeed and those that cannot survive through this extended change. Their capacity to respond rapidly to issues when faced with heightened risks in their operations will determine the survival of traditional banks, not necessarily due to their technological capability.

Figure 8: E-Commerce Process Flow Diagram



6. Limitations and Future Research

This study has several limitations. To start with, despite the comprehensive nature of the theoretical model, the empirical testing will require longitudinal statistics on customer satisfaction, risk factors, and

complaint resolution rates among the Pakistani banks. which are still in the privy household. This kind of information must be collected on future research through customer and bank institution surveys and interviews.

Second, the analysis points out consumer satisfaction as a mediator of satisfaction with the realization that the organizational risk aversion is also affected by other factors, including technological investment, intensity of competition and regulatory capital requirements. In future studies, the model of these connections should be implemented.

Third, generalizability to other markets is limited by the fact that the underlying theoretical linkages are likely to be valid in the context of developing economies with similar levels of maturity in terms of banking infrastructure, but the Pakistan-specific setting limits that.

Gap Identification for future research areas:

1. The mediation hypothesis is tested through structural equation modelling and relative study across South-Asian banking industries.
2. Analysis of the complaint management processes applied by financial platforms.
3. Assessment of regulatory effect of the proposed improvements.

In Pakistan and around the world, the disruption of traditional banking by financial technology is irreversible. According to this research, fintech adoption inevitably creates increased operational, credit, and market risks; however, the negative effects of these risks can be mitigated by maintaining customer satisfaction through prompt complaint resolution, rather than only seeing fintech as a threat requiring defensive risk aversion.

Pakistan's conventional financial institutions have corporate advantage in handling complaints due to the institutional customer service infrastructure and

regulatory scrutiny. Traditional banks can handle the digital shift, maintain client satisfaction, and maintain organizational legitimacy by deliberately investing in complaint resolution, implementing hybrid risk management techniques, and forming selective fintech alliances.

This evaluation is largely comprised of the assessment of both service and operational excellence. The number of total complaints, complaints done via ecommerce channels and how many customer complaints were solved will all be utilized as key performance indicators to identify how effectively the bank is performing the needs and expectations of its customer. By including these indicators, the research will be able to demonstrate the relationship between "Operation Excellence," "Customer Satisfaction", and "Financial Performance" for the bank.

The results of evaluating each financial performance metric (reported in millions of rupees) will provide an indication of the bank's profitability; e-commerce profitability will specifically measure revenues from online generation and will help demonstrate the bank's ability to make money through e-commerce channels. By analyzing the results of these various variables using both regression and correlation analysis techniques, the research will show how traditional banking operations, new technology innovation, ability to provide good customer service, and the success of an organization's complaint management system all work together to help produce the bank's financial results. The quantitative analysis and results are discussed as follows:

7. Conclusion

This study indicates that the use of digital banking and the dynamics of the work and finances of the bank are closely and significantly related. There is always an increase of complaints as the e-banking customers increase and this is natural. scaling effect of higher volumes of transactions expected. In spite of the scale of the system, the customer contentment is guaranteed, which is evidenced by the constantly high effectiveness of the process of complaint resolution. This consistency means that the quality of the bank support is strong and is not influenced by the increase of the number of users.

Other strategic variables such as marketing, products and customer acquisition are more significant in creation even though they are with less importance in creation. resolution rate increment, digital revenue, do not have a strong impact on the profitability of e-commerce. More importantly, the general bank profitability has a strong and positive correlation with the customer growth, which is why the expansion of the user base is one of the key drivers of financial outcomes.

Collectively, these findings point to the fact that operational risk and complaints increase with scale, however, planned expansion strategies accompanied by effective service management ensures profitability in the long term and customer satisfaction. This study examines the complex relationships that exist between digital banking adoption, the quality of customer service and financial performance outcomes through a mediation analysis approach.

There are three distinct dimensions of the digital ecosystem of the bank include the **independent variables**: Fintech Platforms (which also involves E-Banking and MyABL users), Infrastructure (which also involves branches, ATMs, and total customers), and Transactions (which also involves the number of transactions) and encompasses ATM transactions, MyABL transactions and total card issuance). Combined, these elements indicate the capacity of operations and digital coverage and client interaction rates at the bank, which are the basic drivers of the company performance.

Complaints Resolution is a significant **mediating variable** that is introduced in the study using the resolution rate of all complaints and e-commerce complaints. This mediator is another intermediation mechanism through which the independent. variables influence the outcome of profitability by considering the efficiency of the bank operations and the quality of customer service by the bank. The hypothesis is that the enhancement of customer satisfaction, loyalty, and retention leads to the positive correlation among returns to financial investment and investment by improving the effective resolution of complaints. in digital infrastructure.

The dependent variables are E-Commerce Product Profitability (PKR Mn) and the Profit of the entire bank (PKR Mn) which are the ultimate

measurements of financial success. The analysis provides subtle ideas on how digital transformation and customer service excellence lead to sustainable financial performance in the banking sector by examining how the following fintech platform adoption, infrastructure development, and volume of transactions impact profitability directly and indirectly in the form of the effectiveness of complaint resolution.

Resulting of this research, we can state that the level of customer satisfaction is high due to the efficient resolution, regardless of size, though the growth of complaints is a rational outcome of increasing the number of digital banking clients. There are few effects of resolution performance on the profitability of e-commerce which is largely dictated by aspects of strategy such as marketing, product availability, and acquisition of users.

More importantly, the correlation between customer growth and the overall profitability of the bank is strong and positive, which explains that the increase in the number of users has a profound effect on the financial success. These results indicate that operational issues associated with the scale can be successfully addressed, and the use of digital can be used to promote long-term profitability and customer satisfaction.

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