

**Comprehensive Analysis Of Digital Transformation In Pakistan's
Banking Sector For Improving Operational Efficiency**

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Abstract

The purpose of this research is to explore current status of digital transformation for the operational efficiency of banks in Pakistan in the advanced technological environment of the world. Primary and secondary data is collected from the 10 branches of Al Baraka Bank from selected 15 staff members and 15 customers for 300 samples in the year 2025 from June to September 2025. Aside, Digital services of Bank of America are also discussed as a control variable. Researcher selected Al Baraka Bank (Pakistan) Limited as case study to examine the banking environment as role model from South Asia Middle East to compare with the standards of International Banks. The research employs quantitative methodology which includes survey from employees, customers and financial performance data, operational data. Data Analyses is based on 5-point Likert Scale and descriptive statistics is checked by standard deviation. The finding of the study shows significant drift in digital services due to customer's behaviour changes and technological innovation to reshape the operational services of banking. This transformation is absolute demand of digital era in competency to the developed world for payment services by providing active digital platforms to enhance operational efficiency for facilitating national and international customers. The results of this research lead to the recommendations for upgrading digital financial performance of Banks to prioritize the management services for boosting national economy. The study focuses on the development of cutting-edge technology solutions to contribute towards elevation of the Pakistan's economy and fostering a banking experience resulting in customer convenience. The study focuses on the development of cutting-edge technology solutions to contribute towards elevation of the Pakistan's economy and establishing multi-channel digital services for domestic and international customers to conveniently transact for trade business without the hassle of geographic boundaries and limitations. The study focused on modernization of traditional branches to reduce congestion in workflow and opening financial avenue for the nation. This transformation has reengineered the

working attitudes environment of the Bank and bridged the gap between customer and Bank by providing smart & convenient Digital Banking Solutions.

Keywords: Digital Banking, Operational Efficiency, Economy, Financial Avenue, Technology Integration

Introduction:

Digital convergence is rapidly transforming all fields of the world to change the global professional environment into the fully digitally dependent world. Traditional banks focused to implement agile and potential implementation of technological integration through big data concept to sustain competitive position in the region. (Martin, 2019) Recent up gradation in technology and use of smart phone has changed behaviours of customers which demanded hyper connectivity with digital services of banks to reduce physical visits in the banks. Online banking trends have become common worldwide to enhance customer services. (Borges, 2020) Bank of America is at the top advance level in providing Artificial Intelligence controlled applications to digitally communicate with customers about investments, financial sustainability and security and payments in smartest way. (Benali, 2024) Studies reveal that innovative and advance level digital services like cloud computing, virtual tools, cyber detectors, machine learning, and leveraging AI in the banking sector are reducing time, human intervention, real-time processing through workflows and cost utilisation and increasing effective performances in customer services throughout the world. (Alsemaid, 2024)

Pakistan initially targeted to convert the traditional banking into E banking during COVID-19 by enhancing the strategic framework for controlling macroeconomics. (Javaid, 2025). During phase of Covid-19 digital access by the customer in banks was observed as high from 10.6% to 76.1%. The e commerce lifted up to 55.5% with 25.3% new merchants and mobile banking rose to 106.8% which showed quick adoptive potential in the population of Pakistan. (Butt, 2025). Resultantly, many focused on channel migration and deoperationalization of processes to migrate csutomers to digital channels like MobileApp, Internet banking, WhatsApp Banking etc. Despite this, fraud , digitl scams and cyber security vulunerabilities are observed due to limited literacy of digital operations among population specifically in rural areas. (Ahmed, 2025).

According to National Financial Inclusion Strategy launched by government of Pakistan in 2015, 50% of population was aimed to be facilitated by digital financial access followed by strategic framework and action plans to achieve financial inclusion in Pakistan. SBP has launched agenda for NFIS 2024-28 to tackle bottlenecks in capitalization of digital financial services to strengthen customers and financial institutions in Pakistan. The progress of digital initiatives in banks of Pakistan by 2023 is shown in progress report of NFI as volume of transactions 2,073.3 M, Growth in deposits 168%, and growth in accounts 124%, growth in Islamic banking 391%. NFIS 24-28 aims to enhance these performances by 75% by 2028

through advanced financial inclusion, increasing digital access to customers and promoting secure e-services for customer protection. (State Bank of Pakistan, 2024)

Problem Statement:

The smog of digital applications and tools is creating rapid advancement in digital banking operations to create a large competition among international banks. Moreover, the limited digital literacy among customers is giving way to cybercrimes. Thus, this study fills the knowledge gap to address the effective digital financial operations of banks and customer satisfaction for sustainability in economic growth of Pakistan.

Objectives:

To analyze the impact of digital transformation on operational efficiency in Al Baraka Bank Pakistan.

To examine technological integration, process optimization, and strategic framework at international level

To analyze the effects of efficient digital platforms and automation in services on customer satisfaction for banking sectors in Pakistan.

Research Questions

What are the impacts of digital transformation initiatives on operational efficiency at Al Baraka Bank Pakistan?

What practices can be implemented for effective technological integration, process optimization, and digital strategic frameworks for Pakistani banking sector?

How do efficient digital banking platforms and service automation influence customer satisfaction in Pakistan's banking sector?

Significance of the Study:

This study provides practical approach to draw framework for action plan of implementing the digital integration to reduce operational deficiencies in banking sector of Pakistan. This initiative is essential in banking sector to reduce the literacy gap among population and for sustainability in economic development of Pakistan. It is also mandatory for Pakistan banking to increase the ability and potential for practicing the models Bank of America and Chase Bank to ensure the cyber security and financial inclusion at international standards.

Literature Review:

The global operational system has changed due to digital world order, which requires convergence of traditional practice into digital integration to provide efficient services in all fields. Thus; implementation of technologies, application, and software in all fields through internet services has become mandatory to stay connected and competitive in the digital world. According to research report by Forrester Research in 2015, Banks have to be connected with customers to fulfil their demands of transactions, funds transfer, paying bills, using ATM and MobileApp services in national currency. Banks initiated "self services" through digital platforms to

proliferate phone banking. This extended launching new algorithms, branch formats, value chains, and operational methods for employees and customers both, aiming to maintain profitable level and efficiencies operational services on equal terms. (Forrester, 2015) Worldwide banks are under pressure to develop systematic functional strategies followed by organizational configuration to adopt efficient digital capabilities with risk managements framework embedded to stand competitive in rapidly transforming digital world. (Warner, 2019). The banking sector is considered to be crucial field of economy as it flows and regulates the money and trade for sustainability in finances. Banks like Federal Reserve, SWIFT and The Bank of America provide guided framework to drive technology based modern world economy with global connectivity. (Robinson, 2023)

Research about assesing effeciency of banks in UK in 2015 shows that the customer visits in bank branches for transctions has decreased by 30%. (Jatic, 2017) The efficiency of Turkish banks is recorded as 23.6% which was inefficient in 2000 by not updating their functional strategies into technological based services. (Kasman, 2012) However, Kenya adopted innovative digital trend to reduce risks in monetry flow which increased performance of banking sector at high level in business analysis. (Moffat, 2017) These studies indicate that utilisation of technological innovation increase capacity and capability of banks.

Various countries are facing challanges in banking sectors like digital literacy among population, fraud and digital scams and cyber security threats. This is reducing the effeciency of digital banking and it reqires proper strategies and direction to reduce cyber risks for citizens. (Zukry, 2024) A survey based research about Greek banking shows that banks in Greece are extending e-services with technological development to reduce cost of e- transctions but customers response is low due to security issues and less use of internet due to digital illteracy are negatively influencing on e-banking. (Angelakopoulos, 2011) On the other hand, digital integration has empowered customers through providing user friendly fininacial inclusions by launching digital wallets, ATMs and online platform for secure followed by financial literacy inititaives in rural areas on the objectives of improving level of satisfaction among customers. (Mookerjee, 2025)

Research studies reveal that UAE, China,Pakistan and India are emerging economies to be considered high focus on digital banking transformations through FinTech, mobile applications, AI tools and block chains for sustabile business in the competetive world of banking. (Osei, 2023)

Banks of many developing countries are actively providing 24-hours e-services for financial dilvery and camplaint registrations to address challenges of customers for propmt solutions of users. (Wewege, 2020) Numerous digital services are launched to manage risk factor and develop treasury benefit for the customers followed by control cloud-based banking operations without physical services with minimum operation costs for both, customers and banks. (Shatalova, 2021) It is found through research that digital banking has high impact on customers for economic development by providing fast communication application to represent effective ecosystem with increased demands of data analysing tools, security check system and advanced

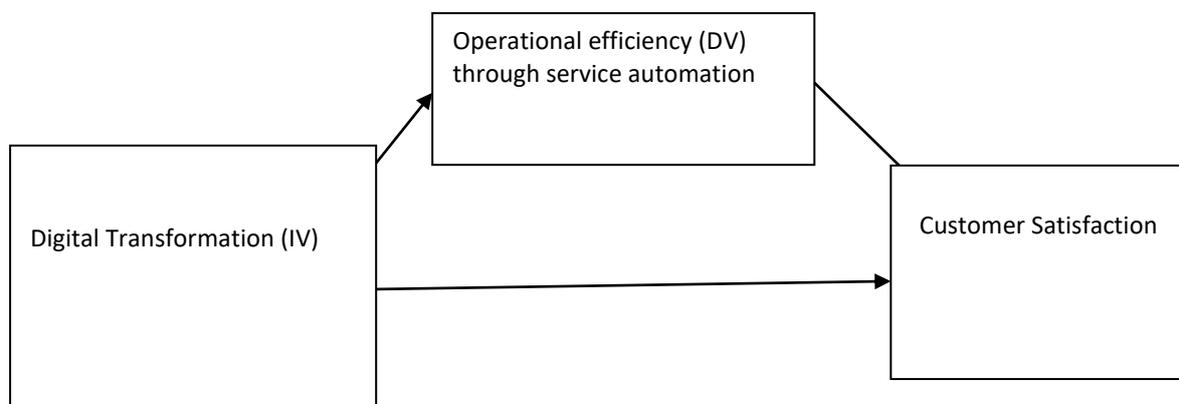
digital application for achieving excellence in customer satisfactions. (Acosta-Prado, 2024)

This literature reviews clarifies that adoption of digital banking in developing countries is handing pressure of competency and risk management to provide advanced technologic based services to customers. The research gap of examining operational strategies in Middle East and Pakistan is giving way to examine the potential financial institutions referring financial inclusion, collaborative strategies, digital framework and deterrence of cyber-crimes in banking of Pakistan.

Theoretical Framework:

This research is grounded on Socio-Technical System Theory. This theory explains that operational institutions follow two interlinked systems for joint optimization for effective working. First the complex technical system which includes technological tools, infrastructure, communication method and operational tools, and second the social system that include population, culture, perception and literacy rate (Sovacool, 2017). Researches on technological innovation system address the collabrative dynamics of socio techonological change to identify the relationship between social networks and technological application for effective functioning of the organsiations. (Malerba, 2002). Organisations are affected by flexible operational services through technological advancements in a specific society for effective performance to satisfy the customers (Appelbaum, 1997). Digital transformation in banking has changed consumer's behaviours that put pressure on altering the functional strategies to fulfil expectations of consumer, this required strong technical system in the banks followed by socio technical system (Verhoef, 2021). This theory is relevant to the research because it provides the strategic framework to evaluate the loopholes, errors and performance assessment through technological integration in institutions.

Conceptual Framework:



The relationship of digital transformation as independent variable with operational efficiency as dependent variable supported by technological integration, optimization for developing digital strategic framework for improving the operational efficiency in Pakistan's banking sector. The Digital transformation is mediator for operational

efficiency and customer services. This will strengthen digital literacy for customer satisfaction.

Hypothesis:

H1: Digital transformation has high impact on operational efficiency in Al Baraka Bank Pakistan

H2: Technological integration is effective to improve operational efficiency in Pakistani banking sector

H3: Efficient digital banking moderates the relationship between service automation and customer satisfaction

Methodology:

This study uses Quantitative Research Design which is descriptive in nature. The timeline of the study is from June to September 2025 the most updated era for digital services. The unit of analysis is survey and reports. The population of data are employees and customers of 10 franchise of Al Baraka bank Pakistan. The sampling techniques are Stratified random sampling for 150 employees' survey and Convenience sampling for 150 customer's survey. The sample size is 300. This data is used to measure the perceptives of process of digital services, customer satisfaction and automation services provided by Al Baraka bank Pakistan. Bank operational performances reports for 2025 are taken as secondary data. Data Analyses is based on 5-point Likert Scale and descriptive statistics technique is used to check standard deviation. SPSS is used to execute statistical data. The ethical standards are followed by consent of population by keeping it confidential and the secondary data from publically available sources are used.

The dependent variable in the study is operational efficiency which is measured with effectiveness of functioning of digital services while the independent variable is digital transformation which is observed through functioning of digital platforms, ATM and mobile transactions and internet banking. This study examines relationship of digital transformation with operational efficiency and customer satisfaction in Al Baraka Bank Pakistan through establishing correlations and analysing empirical data by measuring variables systematically. This methodology approach allows researchers to help to map empirical evidence based hypotheses to scan depth in statistical data analysis.

Data Analysis:

The reliability of the surveys is calculated through Cronbach's alpha coefficient to measure the internal consistency of questions in the survey. A value above 0.70 is highly closed and below 0.50 is low reliability. (Tavakol, 2011)

Table 1 the Cronbach's alpha coefficient

Construct	Cronbach's Alpha Measure	Interpretation
Digital transformation	0.81	Good Reliability

Operational efficiency	0.78	Good Reliability
Customer Satisfaction	0.71	Acceptable
Reliability		

This table shows that internal consistency of digital transformation in Al Baraka bank Pakistan is 0.81 which is a strong reliability. The items like digital integration, financial inclusion, automation, optimization process and digital services are sufficiently correlated for in depth data analysis. The value of operational efficiency indicates stable reliability of 0.78 and for customer services it is 0.71 that is appropriate for testing. This supports H1.

Table 2: Relationship of Variables

Relationship of Variables Result	Beta Value	P Value
Operational efficiency ← Digital Transformation Supported	-0.41	00
Customer satisfaction ← Operational efficiency Supported	0.61	00
Customer Services ← Digital Transformation Supported	-0.31	00

This table reveals that the relationship of variables is strong and interconnected. The findings of the study show clear data about impacts of digital transformation in Al Baraka bank Pakistan on employees and customers for high efficiency in operations and customer satisfaction respectively. This indicates a significant dependency on digital services of the bank. These results support H2 and H3. This narrates that as Al Baraka bank Pakistan adopted advanced digital strategies for providing quick digital services through applications and technology, the operational performance of staff improved to facilitate customers with fastest services delivery. This proves that efficient digital services increase productivity in operational performance of bank's staff. Moreover, it leaves the positive impacts of service automation (digital transaction, mobile banking and complaint services) on customer satisfaction. These build trust of customers with the bank due to being secure and accessible.

Update on Customer Satisfaction Survey (CSS)

The CSS is an important research tool for ABPL which is leveraged to gather insights from customers relating to their experience from ABPL. This survey covers both the existing customers and newly on-boarded customers of ABPL. As per the survey results, >90% customers of the bank are happy from services of ABPL. This is very good score highlighting the trust of customers on ABPL and its Services. Additionally, >70% of the ABPL customers are willing to refer the ABPL to their friends and family members. The overall results of the CSS are very encouraging and positive highlighting that customers rank their bank as a dependable Islamic Banking institution. The ABPL also conducts an independent video mystery shopping for its branches to gauge the service experience from an outsourced vendor. The findings of

this activity were observed as very healthy and positive as the overall video mystery shopping score for ABPL was >90% in 2025.

Number of Transactions (Financial & Non-Financial including all touch points (Branches, Digital Channels, ATMs etc.)

The total number of transactions performed in a day from ABPL network varies from 35,000 transactions to 65,000 transactions including all brick & mortar channels. This number includes financial and non-financial transactions.

Digital Initiatives

The state-of-the art digital lab was set-up in Karachi. This lab is utilized for all digital initiatives including conceptualization of new products/ services, proof of concepts, product/service design, testing of products & services and incorporating change requests in products & Services.

The end to end process of Islamic Auto Financing was digitalized from system input to hands-off/ decision by credit department. In this respect, a work flow application tool is leveraged that help real-time flow of application between various internal stakeholders in an efficient manner to facilitate in real-time application processing and this also provides an ability to the bank to track the customer experience.

The ABPL is in the process of developing its new MobileApp with improved user experience and user interface. This initiative will certainly provide convenience to ABPL customers in enjoying an improved banking experience from the convenience of their homes.

Results and Discussion:

The findings of the study highlight multiple functional roles of digital transformation in banking sector. In the internal set ups of bank, it improves the operational efficiency of staff through adaptation culture with digital literacy of employees which is quite effective to transform traditional banking practices into modern trends. Externally, digital transformation of bank is responsible for customer satisfaction through high level automation services, which builds trust of customers and increases clients of the bank. These factors contribute in economic development in the country. It is clear that digital transformation mediates to improve operational efficiency and customer services to improve, as digital tools controls risk management and improve ability to adopt digital system by employees and customer both. This highly impacts to increase digital literacy in the nation to contribute economic growth in the country. In other words, if the digital services are not updated or interfered through certain barriers and weakness it definitely leads to poor to service quality which direct effects customers. This might cause digital illiteracy and confusion to increase vulnerability for customer and employees. Thus, high readiness in digital transformation has significance value to bring efficient results. Upgraded and fast digital services are mandatory for banks to maintain competitive position in the world. Moreover, it will help reach rural population to provide financial solutions with less cost and more security. This will be effective for bridging unbanking population to banks for

generating safe revenues for the nation and to achieve maximum access through systematic digital infrastructure of banks.

The findings of this study direct future of digital banking through example of Al Baraka Bank's digital operational agility which has aligned cost reduction and process optimization in financial services up to IT based global trends in banking sector. Moreover, for the first time, digital challenges such as cyber security and ethical regularity are addressed by Al Baraka bank to sustain customer reliability.

The empirical data verifies that Al Baraka Bank Pakistan Limited is a role model in banking sector of Pakistan by providing efficient digital services and operational efficiency to the customers. The strength of digital infrastructure via optimization, automation, strategically framework benefit to streamline performance of the staff by reducing time, cost, papers and tangible resources for faster internal and external communication to give positive output.

Recommendations:

The results of this research lead to the recommendations for upgrading digital financial performance of Banks to prioritize the management services for boosting national economy. Academic and professional researches may examine quantitative and qualitative variation in the operational efficiency of multiple national and international banks to evaluate the effective digital communication through applications and internet banking services. The finding interprets that significance of digital integrations in banks is highly demanded to stay competitive in the world banking sector. For this, banking sector has to focus on digital literacy through training and improvement strategies in HR process for updating effective operational services. This may increase the potential of bank to benefit stakeholders, employees, and customers. Moreover, the surveys and feedback data evaluation of work performance, experience and working aptitude are essential to monitor operational efficiency of banks. The future aspect of the study highlights the thoughtful operations of Al Baraka bank for the welfare of customers through investment in technology and generating human capital by involving them in digital financial ecosystem.

To enhance the standards of banking for achieving excellence in international business market, Pakistani banks may adopt effective digital inclusion from American banks which invest in AI powered digital ecosystem with predictive analyses to ensure 99.9% cloud-based transaction system. Moreover, banks in Pakistan should focus on framework of security management system to ensure protection of customer from digital scams.

This study contributes the piece of knowledge in the research related to economy, banking and digital world and gives pathway for future researches on cyber security, monetary audits, and implementation of data driven personalisation and real time work flow at global standards.

Limitations:

This study is based on shortest time period of 3 months because time from customers and employees were difficult to manage during banking hours. Moreover, digital among more customers was imperfect due to their social perceptions of cyber security risks. Secondary data sources were limited due to less attention on content management system of banks.

Conclusions:

In Pakistan banks are doing Service Quality by just visiting branches and not identifying real issues as they are influenced with business and saving cost in some cases, lack of Management focus and empowerment issues. So real issues are not identified as staff publishes branch visit reports and then no one tracks it. Additionally, business intends to put pressure and Service Quality staff closes issues and in actual issues stands unclosed. This is not only damaging Customer Services but also Customer Experience and customers are unhappy with poor complaint resolution, lame practices, excuses by branch staff, misselling of product and behaviour issues. We can simply understand if issues are not properly identified, they issues will also persist and hamper the satisfaction of customers, if complaints are not addressed and closed with customer satisfaction and insights are not being used as leaning tool then these complaint stay unresolved and staff at fault doesn't care and keep on repeating these issues, when Root cause analysis of complaints are not made then process gaps are also not identified and stay where they are and customers keep on facing long, lame old styles processes with wasting more time and energy and this way we lose customer, new customer becomes hesitant and even its challenging to retain the existing customers.

Banks in Pakistan can get benefit from this project as it is full of innovation and different type of action plan as project specialist has the relevant experience of working in a branch as a Branch Manager and now as a Head of service Quality so this combination can be very beneficial to extract insights for service improvement at banks. This study has focused the development in banking for economical elevation of the Pakistan and establishing multi-channel access services for customer for international accessibility with prompt resolutions to avoid dependency on Bank Branches. The study brought attention on modernization of traditional branches to reduce congestion in workflow and opening financial avenue for the nation. This transformation has reengineering the working attitudes of bank and bridged the gap between customer and bank with the incorporation of biometric verification for security concerned to build trust with stakeholders.

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