

# Entering the Digital Banking Era: A Mechanism to Change and Accelerate Financial Access in Bangladesh

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**Abstract:** The banking sector in Bangladesh has entered a new era with the introduction of guidelines for establishing digital banks. This digital banking seems to be new in Bangladesh, but is already a reality in other countries. Digital banking is transforming traditional banking activities into a digital environment and has identified as a potential solution to help accelerate individual's access to affordable financial services. The purpose of this study is to identify the various prospects and challenges of digital banking in Bangladesh. The present study used qualitative research method, document analysis, in order to collect data that would address the research aims. The findings highlight the challenges faced in terms of technology, organization, people, processes, environment, customers, security, and risk, all of which are crucial for driving transformation in digital banking. By reducing dependence on cash transactions, the branchless digital banking system will provide a convenient financial access platform that will bring the country forward on the way to the 'Smart Bangladesh'.

**Keywords:** Digital Bank, Digital Transformation, Financial Inclusion, Technology, Unbanked Population, And Financial Access.

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## I. INTRODUCTION

Digitalization involves converting physical or paper documents into a digital format and transforming commercial guidelines and processes to accommodate this change. On the other hand, the digitalization of banking represents a completely new approach to conduct banking business. Digital banking is the application of technology to enable seamless end-to-end electronic processing of banking operations and transactions. The digital banking system, being the first branchless and cashless financial service provider, has had a significant impact on how individuals carry out financial transactions. As a result, it is expected to bring about a positive transformation in customer behavior. This shift in consumer preferences has prompted financial institutions and stakeholders worldwide to embrace digital banking.

The demand for convenience has led individuals to conduct financial transactions on their own terms and schedule. The development of Digital Banking systems has been instrumental in making this a possibility. The rapid advancement of mobile devices, machine learning, big data analytics, and artificial intelligence has opened up new avenues for innovation and enhancement of banking services. These technologies enable banks to provide faster, safer, and more effective digital banking solutions.

The growth of digital banking has been significantly influenced by technology. The transformation to digital banking is irreversible. According to the latest Development Edition of World Payments Report by Capgemini, the analysis of digital payment trends for 2021 reveals that instant payments and e-money payments will surpass 25% of global non-cash transactions by 2025, a significant increase from 14.5% in 2020. Furthermore, a study conducted in 2017 found that 36% of consumers prefer branchless banks over physical locations.

At present, the banking sector in Bangladesh is undergoing a significant transformation, shifting from traditional banking approaches to digital banking products and financial technology (Fintech) companies. With traditional banking adapting to the digital era in various ways, it is crucial to examine the landscape of digital banks in Bangladesh, focusing on the regulatory framework that will oversee this emerging sector and the opportunities available to drive its growth. The initiative of the Central Bank to launch digital banks aligns with its goal to settle at least 75% of retail transactions through digital means by 2027, leading towards achieving Vision 2041 and advancing the National Financial Inclusion Strategy.

The Central Bank of Bangladesh is currently in the process of finalizing a framework to the establishment of digital banks under the country's plan to transform into a

cashless society. This framework would play a crucial role in advancing the aim of the National Financial Inclusion Strategy (NFIS) (established in June 2022, and in action till June 2026).

➤ *Objective of the Study:*

- The objectives of the study are:
- To highlight the key features and trends of digital banking
- To explore the significant role of new technology adopted by banks
- To explore the prospect of digital banking in Bangladesh
- To identify the hurdles and challenges of digital banking in Bangladesh

## II. METHODS

Document analysis is a systematic procedure for reviewing or assessing documents, both printed and electronic, such as computer-based and internet-based content (Bowen 2009). This study used publications, brochures, fliers, billboards, academic articles, newspaper articles, annual reports, Bangladesh Telecommunication Regulatory Commission (BTRC), Bangladesh Bank (BB) and different commercial banks in Bangladesh, policy documents, manuals, handbooks, and books related on digital bank, as well as internet-based information like websites, and YouTube videos. Additionally, different national and international working papers, policy studies, and peer-reviewed journal articles were also reviewed for the study. Document analysis is an inexpensive method for obtaining empirical data in an unobtrusive and nonreactive manner. In this research, information collection is the primary aim of document analysis.

## III. REVIEW OF LITERATURE

In the era of digitalization, banking sector is one of the first industries which has been seen adopting technological evaluation. As customer/clients are the main priority, providing better service is the major concern in banking sector. It assists in retaining customer; making new customer; maintaining agility, scalability and efficiency in providing services as well as in carrying stability to company's economy. Digitalization or digital transformation appears with a commencement of major shifts of an entity (Suluk, 2023) via "combinations of information, computing, communication, and connectivity technologies" (Mikalef and Parmiggiani, 2022, pp. 2). The shifts in banking sector is visualized by its' functions and activities (Stjepić et al., 2020) from the innovation of bank cards and ATMs in 1960 to the advanced broadband and e-commerce systems in the early 2000 (Kelman, 2016) as well as to the practice of open banking, using artificial intelligence and machine learning for personalized services in 2023 (Grinberg, 2024). However, availability and better speed of internet including smartphones, software, apps are making easier access into digital banking now. Digital banking is an interconnection between Fintech Company and Banks. Predominantly, this banking system is the use of technology to deliver financial goods in order to improve accessibility and affordability of services (Melubo and Musau, 2020).

Following Ozili (2018) concept of digital banking, it is defined here as financial services conveyed through mobile phones, personal computers, the internet, or cards linked to a reliable digital banking system. This includes services like money deposits, withdrawals, and transfers. Those online banking activities which were traditionally available only at a physical bank branch, is the primary offerings of financial institutions called 'Digital Bank'. It operates with minimal to no physical locations. Core banking functions (e.g.: onboarding, loan sanction, mortgage approval, etc.) are done via digital channels. So, the majority of the 'interactions' or 'interventions' of digital banks are online based; in contrast to the physical nature of interactions/interventions by digital banks.

Though the business strategies and model become more reliable and convenient to cope up with the digital transformation, the fundamental banking functions remain alike (Beattie, 2023). The two primary goals of bank is still financing loans and keeping the customers' deposit and personal information safe. But customers' demands are fluctuating due to experiencing more effective, efficient and convenient technologies- "new features, including anytime and anywhere banking, ultra-fast response times, and omnipresent advisors" (Eistert et al., 2013, p. 2) and virtual distribution channel for financial services (Carmen Cuesta, 2015) for everyday usage. Beside that the pandemic period-COVID 19 had forced banking sectors to think about new strategies (Indriasari et al., 2022) while serving customer in lockdown. Multi-service platforms were introduced to provide customer at his/her preferred place (Deloitte Digital, 2022). Banking sector also started to serve various alternative offerings to be on edge with low customer attrition, minimal market rivalry, fewer governmental regulation as well as strong customer relationship (Eistert et al., 2013).

To sustain in this competitive market, banks are ready to adopt and function all innovative way/ strategies along with updated technologies which are perceived as a worthwhile solution in customer viewpoint from TAM (Tran et al., 2023). The study of Davis (1989) highlighted Technology Acceptance Model (TAM) is a solution model. Banks can treasure trove the digital banking platforms or technologies which are customers' choice in terms of benefits, convenience, flexibility, quick transaction, information access, selling point, call advisor and other bank-related services (Davis, 1989).

Tremendous customer endorsement of digital banking for domestic use has positioned it as a potential alternative for financial transaction (Indriasari et al., 2022). In an investigation of Shen et al. (2020), wide acceptance has highlighted the advancement of people's literacy on financial activities, technologies, electronic marketplace, e-government, digital transformation, and digital banking which ensured the stability of banking sector in pandemic situation all over the world. However, an unpredictable innovation and functioning of new technologies have been experienced by different banks in different counties.

Technology has made branchless banking as reality, which is the delivery of financial services without using the necessity of conventional bank branches, but rather through the use of information and communications technologies. The

combination of information technology and mobile telephony has proven to be an effective method for enhancing financial inclusion, as it reduces the reliance on establishing physical bank branches. Beck et al., (2011), Mbiti and Weil (2011), Andrianaivo and Kpodar, (2012) have stated that the surge in mobile phone usage has contributed to an increase in financial accessibility. At the same time, artificial intelligence, blockchain, cloud computing, open API, TELCOs (Jameaba, 2023; Indriasari et al., 2022 & King, 2018), Fintech ATMs and Self-Service Kiosks (Nasriddinova, 2021), Bigtechs (Mărăcine et al., 2020), QR and KZ (Gumar et al., 2023) are addressed at the pole position when thinking about the new digital cloud technologies used in the banking sector.

Being at the top of customer choice in the competitive tech-savvy market of banking sector demands some basic features of product or services. A password protected, convenient, accessible banking platform should be delivered to customer for both financial and non-financial activities. Similarly, a flawless online service to track the latest updated balance-investments & credits, last transaction, account statements (Indriasari et al., 2022). Again, digital banks should enable online fund transfer with NEFT, RTGS, and IMPS without interruption as well as the option of quick automated bill processing & cancelation of automatic payments (Baroda, 2022).

Only customer are not aided, banking sector has also benefitted through this digital transformation. From the documentation of BRIAPI (2021) on digital banking revealed that Digital banks or digital financial service providers has faced comparatively less regulatory pressure considering licenses, capital, & rules along with low configuration cost paralleling with the traditional financial service providers. Relatively easy entrance into digital banking make many efficacious story of bank's service innovations such as Chase Bank's mobile app, simple peer-to-peer payment facility in PayPal and Venmo, Capital One, Erica from Bank of America, innovation team by U.S. Bank, DBS Bank's 'digibank', BRIZZI- BRImo development, BRIAPI-development of BRI bank, Ceria etc. Marous (2023).

Whereas financial service providers have encountered a lot of challenges which may affects customer behavior and their business. Customer's privacy maintenance, conformance or strict rules is another consternation. Quick customer's decision over alternative banks is first and foremost challenge faced by banking sector. For instance, every bank has tried to shower customer with multiple and speedy services, it becomes too much competitive to run in the race (Baroda, 2022). Single changes or minor mistakes can lead to divert customer where creating customer or retain old one is one of the challenges. Customer trust is another one which drives focus on cybersecurity and fraud prevention. Talent or illiteracy, language barriers and culture issues also appear as a dare. (Graham, 2023). Low internet connection, limited ICT and telecommunication infrastructure, incompetent staff members, power-supply disturbance, religious beliefs have created the journey hard for banking sector (Srivastava & Srivastava, 2024).

Changes in customer's desire and service provider's offering is unstoppable. Digital banking basically makes

online/mobile banking easier which provokes customer and service provider for cashless society. Cashless society means cashless economy where physical money is not used for any financial transaction. Cards- Debit/Credit/ATM cards, online transfers, mobile payment, RFID signals, digital wallets are the method by which customer could borrow money, clear payments, deposit into account and also banks do all of its financial activities (Tabassum, 2023). Notably, Norway, Finland, Sweden, China, New Zealand, United Kingdom, Hong Kong, Canada, Switzerland, Netherlands, Singapore are the top countries closest to be cashless society (Phillips, 2022; Corepay, 2023). Norway, Finland Sweden with 0% unbanked population and only 1-2% cash payment have shown fast revolution in their economic system whereas New Zealand, having unbanked population of 1% and UK with 83% of consumers of digital banking are also in race of this digital transformation (Chechi, 2024). Though China was not willing to go for digitalization in its financial system, it has been changing deliberately into it. The use of digital payment methods-Alipay and WeChat pay in China creates a tranquil transaction for foreign visitors (Davidson, 2024). Best has showed the number of cashless transactions 2013 to 2021, with forecasts from 2022 to 2027, by region in Statistica (2024), transactions of 515 billion U.S. Dollars in Asia-Pacific, 290 billion U.S. Dollars in Europe, 218 billion U.S. Dollars in North America 92 billion U.S. Dollars in Latin America, 29 billion U.S. Dollars in Middle East Africa were in non-cash methods in 2022 which is 765 billion U.S. Dollars in Asia-Pacific, 364 billion U.S. Dollars in Europe, 246 billion U.S. Dollars in North America, 124 billion U.S. Dollars in Latin America, 39 billion U.S. Dollars in Middle East Africa in 2024. In upcoming days, banking sector probably may use only the digital payment methods. According to The World Bank (2022), South Asian countries are expanding its banking facilities towards digitalization leaving some major issues such as expensive broadband internet service, unbanked population, illiteracy, unskilled manpower, traditional environment, distrust. The advantages of cashless society is similar to digital banking which can't be concluded if one person tries to explain. But fully cashless society may not likely future of society. As paper/coins/cash is a reliable and tangible, it would carry the worthiness. NCR Atleos (2021) found out both the cash and cashless transactions as the most possible, convenient and flexible way for customer pointing at system vulnerability, privacy, unwillingness. However, it seems to be great to be in a technology-savvy society where everyone should adopt the advances ensuring the safest uses (Kuswandi et al., 2022).

Behind every successful business, there is a strong customer relationship. Banking sector is not apart from this fact. Also, solid correlation between clients and banks plays as a keystone in building and sustaining bank's distinctiveness. To reach at the peak point of customer satisfaction and to be competitive one with new service offering will not be an easy nut to crack. We are in 2024, having experiencing an immense banking service at our convenient place. This evolution is possible due to technological innovation, bank's ability in adaptation, bendable regulation, strategic focus on specialization, partnerships, emergence in customer demand and knock over traditional norms which are pertinent for digital transformation. On an average, customers have done most of the financial or banking activities without leaving

physical presence at bank or selling point or it can be said that customer are experiencing human banker (Mark, 2024). Obviously it is a hard reality for banking sector along with many challenges and opportunities too as demand is fluctuating in accordance with situation, time, innovation, technologies and convenience (Sharma & Sant, 2022). Over 70% growth in the global financial asset has been generating from the shift to private market, institutional investors, shadow banking (Mark, 2024). Also, GRAND VIEW RESEARCH (2023) forecasted, “The global neobanking market size was valued at USD 66.82 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 54.8% from 2023 to 2030” (p.1). However, Neobanking is growing more than its rivalry including incumbent banks (Thompsett, 2024). While Hronich (2023) highlighted the possible demand and potentials of Community banks in 2030 as Veritex Community Bank primarily work for customers in Dallas, Fort Worth and Houston, Texas which upraised \$135 Million from its 29 branches and call-center in 90 Days in 2022 by launching a new deposit platform. Non-bank financials and community banks (Mark, 2024); Central Bank Digital Currencies (CBDCs), Open Banking Payments, sustainability (Environmental, Social, and Governance-ESG) factors in banking operations, Digital identity solutions (Grinberg, 2024), CX to EX will be the digital trend in the future banking sector by 2023. Again, future is unpredictable. Researchers can assume many thing based on information. But walking on ups and downs will wholly give challenges to banking sector. This sector hopefully will change, reshape and position itself in future time (Mark, 2024).

Bangladesh, one of the South Asian countries, has been expected as a cashless society as the Government of Bangladesh has fixed a bull's eye on achieving 50% cashless transection within 2025 and 100% within 2031 (The Daily Star, 2024). Though most of people in this country have high illiteracy on digital transection or financial technologies, Zubair Ahmed (a venture capitalist in Japan) came up with

“Hishab”- conversational AI technology allowing personal intelligent assistant utterly in Bangla (Saifuddin, 2023). ATM Cards, banking Apps, debit or credit cards, Bkash, Nagad, and Rocket are the most used way of financial communications in Bangladesh. Infrastructure and connectivity remains the main challenge (Singh, Pattnaik, & Samanta, 2024) for Bangladesh in this regard. At the same point, governmental approaches and innovation will be result in a prodigious revolution in future. This paper aims at those features, benefits and challenges of Bangladesh in terms of entering into digital banking, especially in terms of becoming cashless society.

#### IV. DISCUSSION

##### ➤ Bangladesh's present status regarding digital banking services

Initiatives in preparing the base for digital transformation in banking sector in Bangladesh is hypnotic. Digital bank seems to deliver all banking services within no-physical communication system. This financial service points on the digital payment methods for both banks' and customers' transactions where Banking Cards USSD (Unstructured Supplementary Service Data), UPI (Unified Payment Interface), Mobile Wallets, Point of Sale Terminals, Mobile Banking, Internet Banking (Uddin, 2023). The availability of smartphones and Mobile Financial Services (MFS) has played a crucial role in advancing digital banking services in Bangladesh. This transformation has paved the way for the inclusion of previously marginalized demographics, especially those from low-income backgrounds, into the realm of financial services. Subsequently, several banks have introduced digital banking services to streamline transactions and expedite fund transfers. According to the latest report from Bangladesh Bank, the daily average transactions through MFS have surpassed 4175.66 (in crore BDT) in January, 2024 which was 4017.69 (in crore BDT) in December, 2023. This indicates 3.93% change within two months' transection showcasing a positive trajectory.

Table 1 Internet Banking Statistics (Dec, 2023 – Mar, 2024)

Period	Number of Internet Banking Customers	Internet Banking Transaction	
		Number	Amount in Million (Tk.)
March'24	8338860	12441038	995106.2
February'24	8915009	10775757	938227.5
January'24	8486538	10622601	962059.0
December'23	8331730	9850726	816402.4

Source: Bangladesh Bank (Internet Banking Statistics) 2024, May.

In April 2023, MFS transactions witnessed a year-on-year growth of 19.5% compared to April 2022. While internet banking transactions soared by 63.63% in the first eight month of FY23 (Mavis, 2023) and within 1 month (Feb, 2024-Mar, 2024), it has risen by 5.71%. But the Number of Internet Banking Customers has decreased by 576,149 persons at the same period according to Internet Banking Statistics (2024)

given by Bangladesh Bank showed in Table-1. Decrease in the number of internet banking customer in Bangladesh may be driven by trust issues on banking service, poor economic condition of customers, and insecurity from hijacker, slow internet speed, low service quality, gender issues-high female users and power crisis (Sadekin & Shaikh, 2016).

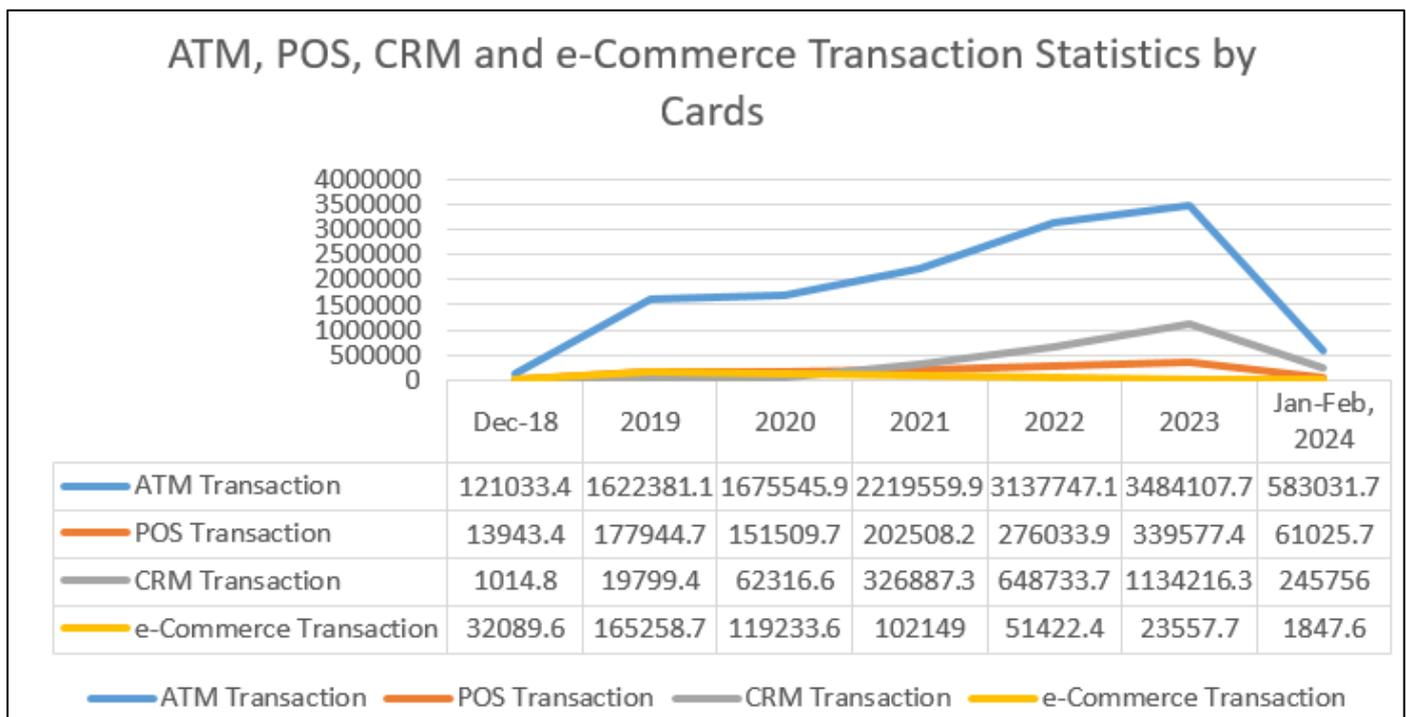


Fig 1 ATM, POS, CRM and E-Commerce Transaction Statistics

Source: Bangladesh Bank (ATM, POS, CRM and E-commerce transaction Statistics Statistics) 2024, May

However, digital banks and financial institutions are poised to play a pivotal role in promoting financial inclusion by extending their services to the underserved and unserved communities. Bangladesh has set a target for 75% of local transactions to be conducted digitally by 2027, aligning with the vision of a technologically advanced "Smart Bangladesh" by 2041 which will be "more than a futuristic Bangladesh, more than 5G internet, more than 100% smartphone penetration, more than 100% high-speed internet penetration, more than going cashless" (Chowdhury, 2023, p. 1). Figure 1 shows Bangladesh Bank's Statistics (2024) ratio on the uses of Automated Teller Machine (ATM), Point of Sale (POS), Cash Recycling Machines (CRM) and E-commerce Transactions. The numbers have highlighted the rising curve of three machine (ATM, POS, and CRM) usage from 2018 to 2023. It is evident that people are increasing their financial transactions through those digital services now which is a bigger steps toward fully digitalization in banking sector. On the opposite, ecommerce transaction has decreased in 2023 in Bangladesh. Miah (2023) has found out possible threats such as lack of regulation, increased unhealthy competition, and shortage of skilled workforce, data privacy and security concerns that may hamper customers' dealings through E-commerce.

In the statistical report of Bangladesh Bank (2024), installation of Cash Deposit Machine (CDM) in March'24 is decreasing comparatively last month of 2023. The scenario indicates the rate or willingness or the usefulness of using CDM (Table-2). Only one service may not be attractive and convenient service in users' mind. As profit-oriented organization broaden their service point in accordance with demand. After seeing the installation 3,897 units CRMs in last November, 2023, it is transparent that customers are now interested in multi-tasking and it is the main reason for booming the number of installed CRMs (Parvez, 2024). As it enables customer in both deposit and drawing (Tasreen, 2021). Though it helps to deal customer efficiently, it is much complex as it needs hardware and software solution for multi-tasking and it requires high cost for installation (Parvez, 2024). Along with that, deposit status is not updated at the same time of making deposit from machine. Manpower is needed to register or update customers' account. Yet, the increasing participation of customers in using different machines for convenient and hassle-free transactions indicates acceptance of the productive growth of digital banking, especially in rural area.

Table 2 Installed Number of CDM

Period	CDM	
	Urban	Rural
March'24	224	22
February'24	230	22
January'24	228	22
December'23	238	25

Source: Bangladesh Bank (2024), (ATM, POS, CDM and CRM Statistics)

Despite the considerable progress made in branch banking, agent banking, and MFS, the economic impact has been limited due to the low internet penetration rate in Bangladesh (Arafat, 2023), currently standing at just 38.9% according to Kemp mentioned in Datareportal (2023). Rekeen indicates in IDLC Monthly Business Review (2023) that a significant portion of the population in Bangladesh, approximately 53% of the individuals in Bangladesh are part of the formal financial infrastructure. When considering bank accounts and credit cards alone, this figure drops to approximately 20%, with the majority relying on MFS for their financial needs.

Through the adoption of digital financial inclusion, Bangladesh has the potential to reduce costs and risks linked to cash transactions, such as theft, losses, and financial crimes. Moving beyond mere access to accounts towards active utilization marks the next stage for economies with a large portion of the population having bank accounts. This trend can be seen in countries like China, Kenya, India, and Thailand, among others. The economic development of these nations was fueled by the implementation of reforms, fostering innovation in the private sector, and enhancing the accessibility of affordable accounts, such as mobile and digitally-enabled payment options.

➤ *Bangladesh Bank's Guidelines for Digital Banking*

In June 2023, Bangladesh Bank has issued a "Guideline to Establish Digital Bank," outlining the necessary requirements for setting up these banks, their operational procedures, and the services they are permitted to offer. The

guideline is based on the Bank-Company Act (BCA) 1991, its amendments, Payment and Settlement Systems Regulations 2014, and other relevant regulations. The branchless operation is one of the notable characteristics of DB, as it operates solely with a registered head office. It also takes advantage of the existing agent networks of banks or Mobile Financial Services Providers (MFSPs), as well as ATMs, CDMs, or CRMs. Moreover, it is mandatory to have a minimum paid-up capital of Tk125 crore, which includes ordinary shares. In contrast, individual shareholders are required to have a minimum stake of Taka 50 lakh. Additionally, the issuance of virtual cards and/or QR codes is implemented to facilitate and expedite consumer transactions. To carry out permissible transactions, the entity should obtain an Authorized Dealer (AD) license.

In addition, digital banks are required to undergo an Initial Public Offering (IPO) within a period of five years after obtaining the license. They must also maintain a minimum Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) as the BB directs.

The bank under consideration has the potential to provide financial support or loans to various industries, excluding foreign trade finance and term loans for medium and large-scale enterprises. The Board of Directors of a digital bank can be comprised of a maximum of 20 directors, including three independent ones, who would not be able to serve as directors of any other banks, NBFIs, insurance firms or their affiliate corporations, and 50% of these Board members must know emerging technologies, IT laws and regulations.

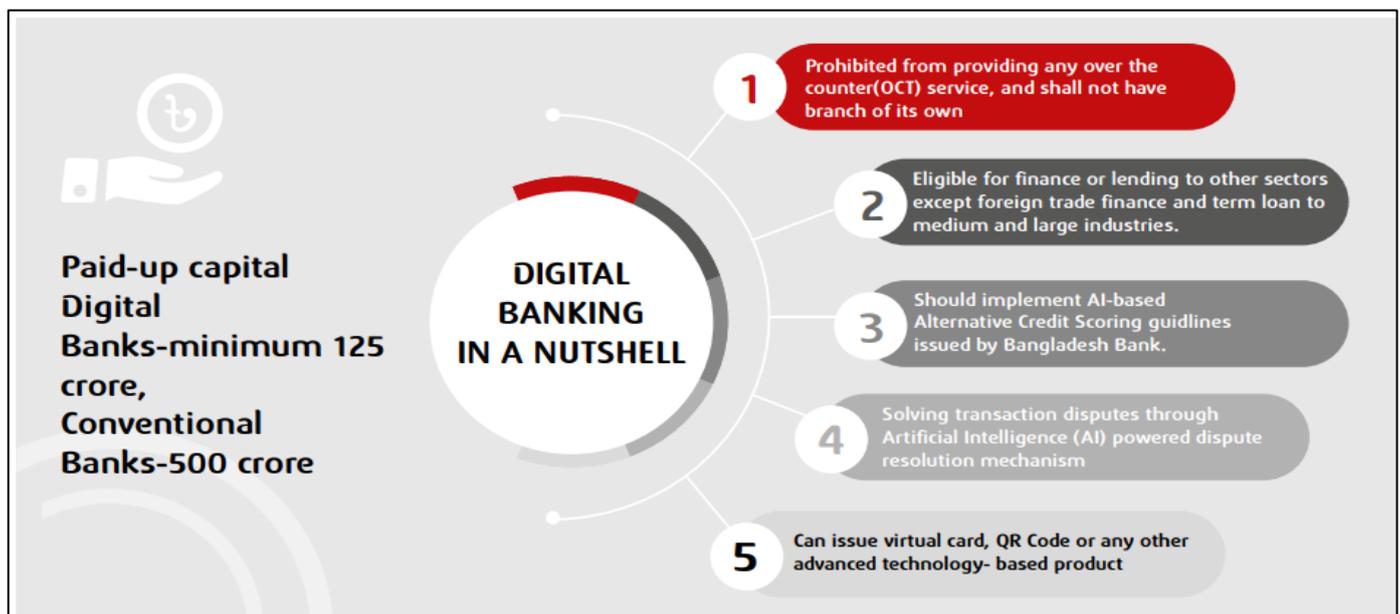


Fig 2 Digital Banking in a Nutshell (Rakeen, 2024, p. 34)

➤ *Benefits and Opportunities of Digital Banking in Bangladesh:*

Applying a branchless virtual banking system from start to finish can greatly advance the banking industry by broadening its accessibility to even the most remote areas of the nation. This growth offers a multitude of advantages, such as generating job prospects, guaranteeing economic and financial security, and setting up a strong financial environment for the country.

Apart from numerous other advantages, digital banking in Bangladesh will contribute to enhanced economic stability and greater financial intermediation for both customers and the overall economy. Furthermore, it will serve as a valuable tool for the government, enabling them to facilitate increased aggregate expenditure and generate higher tax revenue through the volume of financial transactions. Moreover, Appaya, S. & Abbas, S. B. (2024) said that digital banking will play a crucial role in empowering women economically by

facilitating asset accumulation and increasing their participation in the economy. Furthermore, it will also aid in formalizing the informal sectors of Bangladesh, allowing the

government to collect taxes from previously unattained sources of informal financial activities (Ndahiro & Luswata, 2023).

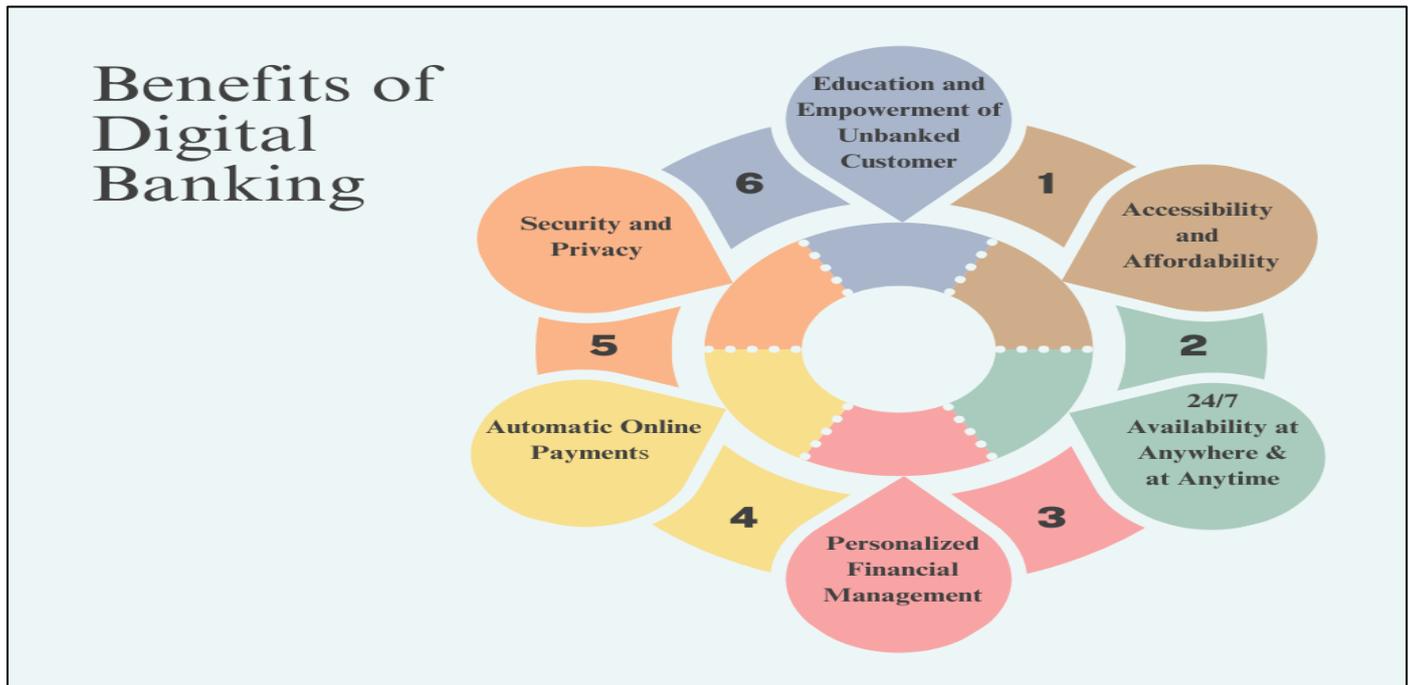


Fig 3 Benefits of Digital Banking

Digital finance plays a crucial role in enhancing the affordability and accessibility of financial services in 24\*7 and other credit facilities for disadvantaged and marginalized communities, including low-income households and micro, small, and medium-sized enterprises (MSMEs) (Uddin, 2023). This, in turn, contributes to fostering balanced and inclusive economic growth. As our government creates an opportunity where mobile phones are too much affordable and financial services are available at one touch on the phone, urban and remote people are getting used to it. Moreover, mobile phones shows business as an infrastructural efficiencies, thereby accelerating financial inclusion in countries with limited physical and financial infrastructure (Allen et al., 2014) Bkash, Nagad, Rocket, Bank’s apps, Cards, Machines deliver far effective and efficient experience to the customer. It also give benefits to providers by reducing operating costs and human inaccuracies (The Financial Express, 2021). Therefore, reducing cash dependence could pave the way for economic growth and development.

Along with these opportunities, streamlining of banking services such as innovation of “anywhere, anytime” financial or mobile service (Hossain & Haque, 2014), household saving and investment (Li et al., 2020 and Wang & Wang, 2022), developing stable consumption patterns during times of financial strain have been highlighted as potentials of digital banking.

Khan (2023) conducted a survey with 88% of farmers who are aware about DFS and used DFS for four years. From the survey, it is showed that “13 per cent of the farmers use DFS on a daily basis, 44 per cent on a weekly basis, while others do so once a month (31 per cent). Survey results indicate that bKash (82 per cent) is the most popular among DFS

products, followed by Nagad (30 per cent) and Rocket (23 per cent)” (Khan, 2023, p. 1). It is evident that farmers are also experiencing formal financial services with low cost, hassle-free transactions, security and transparency.

According to the Bangladesh Bureau of Statistics (Labor Force Survey 2016-17), 85.10% of the workforce is engaged in the informal sector, with a majority lacking e-skills. Additionally, they face challenges in accessing loans from banks due to a lack of required documentation or collateral. Failure to save money in financial institutions can result in depreciation and make people more vulnerable to inflation, which is concerning. The implementation of Digital Banking Platforms and Mobile Financial Services (MFS) can make a tremendous impact to enhance financial resilience in low-income, rural, and marginalized communities. Moreover, technological advancements and policy innovations can further improve the effectiveness and efficiency of these initiatives.

The government recently has emphasized on building a digital Bangladesh, establishing an ICT park, increasing funds for enhancing ICT infrastructure, exempting taxes on computer peripherals, and implementing an automation program in the banking sector under the guidance of the Bangladesh Bank, along with the competition among scheduled banks to improve customer services, will accelerate the growth of digital banking in Bangladesh.

➤ *Challenges and Hurdles of Digital Banking System in Bangladesh*

Bangladesh Bank should be praised for its commendable initiatives to establish a cashless ecosystem, which deserves acknowledgment. Also, private banks and financial institutes

launch variety of digital financial services that fosters customer reliance on digital banking. Nevertheless, it is critical to recognize the challenges that come with these endeavors. Presently, some crucial challenges thwarting these efforts include insufficient digital or IT infrastructure, a diffident regulatory environment, concerns regarding security and trust and issues related to customer consciousness and acceptance (Uddin, Shawon & Nayeem, 2017). Simultaneously, sustaining access to stable internet connections, cyber security and data privacy, protected digital banking environment, digital literacy and barriers in financial inclusion, consistent availability of customer' online and offline support channels, and user experiences act as decisive challenges in the way of digital banking (Masum, 2023 & Hossain, 2023).

Regardless of prominent advancements, internet penetration remains relatively low in Bangladesh, as only about 45.7 percent of the population currently has internet access (Bangladesh Bureau of Statistics, 2023). This poses difficulty for the digital banking sector, which intensely depends on internet connectivity. Collaboration among government, digital banks, financial institutions, telecom companies, other investors are vital for overcoming these challenges as well as to enhance connectivity and expand access (Masum, 2023).

To create a digital bank, it is crucial to implement clear ICT risk governance mechanisms and thorough ICT security policies to build trust with customers and ensure transparency and reliability. It is essential to have a professional team with sound knowledge in cutting-edge technologies, ICT governance, cyber security (Khan, 2021), and digital financial systems to ensure data security and overall protection. Ibrahim (2023). All at once, educating people about digital banking is one of the major hurdles in Bangladesh. Lack of knowledge about digital banking or technologies or financial solutions creates unskilled manpower (Rahman et al., 2017) as well as unconscious customers (Ibrahim, 2023). Adequate knowledge makes customers' approach easier to adapt new technologies. As Bangladesh always faces a problem of illiteracy, it will be hard enough to educate huge portion of uneducated people. Though education is needed as it helps to build reliance and to promote new financial services.

Aligning with education, maintain or introducing financial services in digital form for unbanked population is also a challenge due to the unwillingness of customer use and costly installation. The risk of fraudulent behavior and data breaches is significant, necessitating huge investments by banks to protect customer information. Additionally, challenges like insufficient technological infrastructure, low technological knowledge, frequent power interruptions, and limited access to banking services in remote areas will pose difficulties for digital banks in providing consistent and reliable services across the country. There is another challenge to motivate females' participation in digital banking as limited financial literacy, lack of formal identification documents, shared norms, and cultural limits, Limited ownership of smartphones, digital illiteracy, and restricted internet access are extremely thwarting their ability to engage with modern financial tools (Appaya & Abbas, 2024). These challenges can't be overcome rapidly, collaboration of Government,

banks and country peoples' willingness can bring most of the benefits resting the challenges.

#### ➤ *Necessary Actions to Implement Digital Banking:*

To ensure an effective execution of Digital banking, certain measures need to be taken. Acquiring digital literacy is crucial for enabling the mass people to operate internet and mobile banking without difficulty. Moreover, customers should possess a certain level of financial literacy and be educated about the security aspects associated with digital banking.

To protect data from both internal and external threats, digital banks need to employ strong encryption measures. Consequently, bankers must undergo regular training sessions to enhance their understanding of the workings of the system's operations. Furthermore, the security system should be regularly updated to ensure its effectiveness.

To provide uninterrupted service, digital banks must collaborate with other institutions whose standards should be like high standards. In the event of a security breach, it is crucial to quickly detect and mitigate any potential losses, whether they be financial or informational.

Every person should possess a smartphone equipped with a seamless and fast internet connection, cutting-edge technology, and relevant digital banking applications. In the event of internet buffering, customers may encounter disruptions in service, which could potentially reluctant them from using digital banking services. It is crucial to ensure that financially disadvantaged households, who are currently unbanked should be bankable. Many poor households are reluctant to open a bank account due to the high deposit requirements, thus digital banks should consider the economic status of those people.

## V. CONCLUSION

As we are developing our economy towards the future, digital transformation is becoming undoubtedly essential. The Bangladeshi banking sector is no exception to this shift. Undoubtedly, the widespread adoption of Mobile Financial Services among low-income households over the past decade is a clear indication of the potential success of digital banking services. These services can replace traditional banking services effectively, leading to enhanced competitiveness and reduced operational expenses. To ensure sustainable growth, banks in Bangladesh must proactively address cyber security and establish a strong digital infrastructure. This proactive approach, in turn, can help create a favorable business environment for both banked and unbanked societies where digital banks can accelerate the financial inclusion and economic growth of Bangladesh aiming to transit the majority of the population towards a cashless economy.

This article delves into the realm of digital banking, shedding light on its scope, challenges, and opportunities within the context of Bangladesh, a topic that remains largely unexplored in existing literature. The discussions at a conceptual level also touch upon the advantages and drawbacks of digital banking and digital financial inclusion as a whole.

The study was based on secondary data. This study might create a new investigation field for future researchers by collecting additional data from a larger sample size and the stakeholders may find out strategies for providing quality services for retaining their client's in the long term. Attention should be given by academics to the changing nature of banking risk due to digitalization.

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