



Aspects of Digital Banking before and After Covid

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1. INTRODUCTION

The financial sector has experienced a significant transformation in the last ten years, with digital banking emerging as a key player in the global economy. The widespread use of smartphones, innovations in financial technology (FinTech), and initiatives led by governments have accelerated the adoption of digital banking services. Prior to the COVID-19 pandemic, there was a gradual shift among consumers towards online and mobile banking, motivated by the convenience, speed, and efficiency these platforms offered. Nevertheless, traditional banking practices—such as visiting physical branches, conducting cash transactions, and processing documents in person—remained common, particularly among older demographics and those in rural areas.

The COVID-19 pandemic acted as a catalyst, propelling an extraordinary increase in the adoption of digital banking. As nations enforced lockdowns, social distancing measures, and limitations on physical banking activities, financial institutions were compelled to upgrade their digital capabilities to accommodate the growing demand for online transactions. Consumers who had previously been reluctant to adopt digital banking found themselves with no other options, resulting in a notable rise in mobile banking sign-ups, online money transfers, and contactless payment methods. Essential financial services, including Unified Payments Interface (UPI), Immediate Payment Service (IMPS), mobile wallets, and internet banking, experienced remarkable growth during this time.

In addition to individual consumers, businesses and organizations were also required to embrace digital banking solutions for payroll management, vendor payments, and various financial transactions. Small enterprises, which had traditionally depended on cash transactions, swiftly adopted digital payment systems to maintain their operations. Governments and financial regulators played a vital role in supporting this transition by implementing incentives, policy adjustments, and financial assistance programs that were distributed through digital channels.

However, the rise in digital banking adoption also brought forth new challenges. The transition to online platforms has resulted in a significant increase in cybersecurity threats, including phishing scams, fraud, and data breaches. Many individuals who are new to digital banking often lack sufficient digital literacy, rendering them more susceptible to financial scams. Furthermore, the disparity in digital access between urban and rural areas has become increasingly pronounced, as issues related to internet connectivity and smartphone availability continue to pose challenges in certain regions.

This study intends to deliver a thorough examination of digital banking practices before and after the COVID-19 pandemic, concentrating on several critical aspects, including:

1. The expansion of digital financial inclusion and the influence of government policies in enhancing banking accessibility.
2. Shifts in consumer behavior, particularly the transition from conventional banking methods to digital platforms.
3. The repercussions of cybersecurity threats and financial fraud within the digital banking landscape following the pandemic.
4. The future trajectory of digital banking and emerging trends, such as the integration of artificial intelligence (AI), blockchain technology, and the proliferation of neobanks.

By conducting a detailed statistical analysis and empirical research, this paper aims to assess the long-term effects of the pandemic on digital banking and its influence on the future of the financial industry. The results will offer essential insights for policymakers, financial institutions, and technology providers in crafting more secure, inclusive, and efficient digital banking solutions for the post-pandemic landscape.

2. PRE-COVID BANKING

Before the arrival of the COVID-19 pandemic, banking primarily focused on traditional in-person services, even though digital banking was gradually increasing. Here's a summary of the main banking methods during that period:

2.1. Traditional Banking Services

- **In-Person Banking:** The majority of clients engaged with banks at physical locations. Activities such as setting up accounts, applying for loans, cashing checks, and consulting with bank staff for financial guidance were typical.

- **Cash Transactions:** Cash usage was still prevalent, and individuals visited ATMs or branches to withdraw and deposit cash. While electronic payments were becoming more common, a significant number of people still depended on cash for everyday transactions.
- **Manual Processes:** Physical forms, documents, and paperwork were typical for various transactions such as applying for loans, opening accounts, and addressing disputes.

2.2. Early Adoption of Digital Banking

- **Online Banking:** By the early 2010s, numerous banks had created online banking platforms. These services enabled customers to view balances, transfer funds, and settle bills. However, they generally offered only basic functions and required desktop computers for usage.
- **Mobile Banking Apps:** By the mid-2010s, banks began launching mobile banking applications that permitted customers to execute banking operations from smartphones. Commonly offered services included balance checks, bill payments, and money transfers.
- **Remote Deposits:** The idea of remote deposit capture (RDC) emerged, allowing clients to deposit checks through their smartphones, removing the necessity to visit physical locations.

2.3. Digital Payment Systems

- **P2P Payments:** Peer-to-peer (P2P) payment platforms such as PayPal, Venmo, and Zelle began to pick up popularity. Although these services were not directly linked to conventional banks, numerous banks integrated them into their mobile applications to facilitate seamless transfers between individuals.
- **Digital Wallets:** By the end of the 2010s, digital wallets such as Apple Pay, Google Pay, and Samsung Pay were introduced, allowing users to keep credit and debit card details digitally and perform contactless transactions.
- **Bank Transfers and Bill Payments:** ACH (Automated Clearing House) transfers and bill payments were primarily available through bank websites and mobile applications. However, these services were generally slower than the modern real-time payment systems.

2.4. Security and Authentication

- **Traditional Security Methods:** Banks utilized standard security measures such as usernames and passwords for account access. Nonetheless, more sophisticated security methods like two-factor authentication (2FA) and device-specific access were beginning to be implemented.
- **Limited Use of Biometric Security:** Some banks started rolling out biometric authentication methods such as fingerprint and facial recognition for mobile banking applications, although these features were not as widely adopted as they are now.

2.5. Customer Experience

- **Branch-Dependent Services:** Although digital services were expanding, many clients still needed to visit branches for more complicated tasks such as applying for loans or managing accounts. Personalized service in physical locations was still a crucial aspect of banking.
- **Limited Digital Customer Support:** Live chat, AI chatbots, and phone-based customer service were available but in their infancy. Individuals still needed to depend on in-person visits or phone calls for the majority of issues.

3.IMPACT OF COVID-19 ON THE BANKING SECTOR

The COVID-19 pandemic has significantly and enduringly affected the banking industry, hastening numerous trends that were already underway while presenting new obstacles and prospects. The pandemic changed how individuals interacted with their banks, impacted the digitalization of banking services, and altered the regulatory environment. Here's a comprehensive overview of the primary effects on the banking industry during and following COVID-19:

3.1. Accelerated Digital Transformation

- **Shift to Digital Channels:** The COVID-19 pandemic drove numerous banks to swiftly improve their digital functions. With physical bank branches shut or limited because of lockdowns and health concerns, customers needed to rely on online banking services for their everyday transactions. This surge in need for digital banking urged banks to accelerate their digital transformation initiatives, focusing on enhancing mobile banking apps, online services, and digital-only alternatives.
- **Remote Banking Services:** To adjust to the pandemic, numerous financial institutions boosted their online customer service capabilities. Virtual consultations, video banking, AI-powered chatbots, and online loan applications became more widespread as banks aimed to fulfill consumer requirements in a socially distanced environment. Services that were previously conducted in-branch, such as loan consultations or account openings, shifted to virtual platforms, enabling customers to connect with banks remotely.
- **Adoption of Contactless Payments:** With a focus on reducing physical contact, consumers transitioned to contactless payment methods, including digital wallets and QR code transactions. This trend not only spurred the adoption of digital payments but also led banks and financial institutions to improve their payment systems and security measures. The pandemic hastened the adoption of contactless payments, as both consumers and businesses preferred these safer, more hygienic options compared to cash or card payments.

3.2. Changes in Consumer Behavior and Expectations

- **Increased Demand for Online Banking:** As people stayed home and reduced in-person interactions, the need for online banking services increased significantly. Conventional banking services like money transfers, bill payments, and balance checks shifted primarily to digital formats. Customer expectations changed as they started expecting faster, more cohesive experiences across digital platforms.
- **Remote Banking as the New Norm:** The pandemic altered how individuals perceived banking, establishing remote banking as the preferred approach for many. Prior to COVID-19, many consumers frequently visited branches for face-to-face transactions, but the necessity for remote banking during the pandemic has resulted in enduring changes in habits. Customers have grown more at ease with mobile banking applications and digital solutions, prompting a more lasting transition away from physical branch visits.
- **Security and Trust Concerns:** With the rise in online transactions, customers grew increasingly anxious about cybersecurity, data breaches, and fraud. Banks reacted by improving their cybersecurity measures, incorporating two-factor authentication, biometrics, and encryption, to reassure customers regarding the security of their financial information.

3.3. Financial Relief and Support Measures

- **Government Assistance Programs:** Governments worldwide initiated financial relief initiatives to assist businesses and individuals affected by the pandemic. Banks served a pivotal role in disbursing government relief funds, including unemployment benefits, stimulus checks, and emergency business loans. Numerous banks swiftly modified their digital platforms to manage these funds effectively and reached a wider audience, encompassing those who were either unbanked or underbanked.
- **Loan Forbearance and Payment Deferrals:** In order to aid individuals and businesses facing financial difficulties, many banks launched loan forbearance initiatives, providing deferred payments, reduced interest rates, or prolonged loan terms. Digital platforms became essential in executing these initiatives, as customers utilized online banking services to request deferrals or financial assistance.

3.4. Effect on Small and Medium Enterprises (SMEs)

- **Growing Reliance on Digital Banking:** As a result of the pandemic, numerous small and medium enterprises (SMEs) had to switch to digital banking for managing finances, processing payments effectively, and accessing loans. Banks provided SMEs with creative options to apply for digital loans, offering more flexible terms to tackle the unique difficulties brought about by the pandemic. Additionally, digital platforms allowed SMEs to more easily tap into government relief programs and adapt their operations in a swiftly changing environment.
- **Rise of Neobanks and Fintech Solutions for SMEs:** While traditional banks were adjusting to digital services, they were frequently viewed as sluggish and less responsive to the swiftly evolving needs of SMEs during the crisis. This scenario presented an opportunity for neobanks (digital-only banks) and fintech firms to provide more agile, technology-driven solutions for SMEs, ranging from cash flow management tools to fast digital loans.

3.5. Financial Inclusion and Digital Banking

- **Promotion of Financial Inclusion:** COVID-19 underscored the significance of financial inclusion as millions of individuals previously unbanked or underbanked began utilizing digital financial services for the first time. Digital banking solutions facilitated underserved communities' easier access to vital financial services, including payments, transfers, and savings accounts. Mobile banking services, particularly in developing regions, were instrumental in integrating individuals into the formal financial system.
- **Challenges of the Digital Divide:** Although digital banking improved access, it also highlighted the challenges posed by the digital divide. In many rural or economically disadvantaged areas, insufficient internet access, smartphones, or digital literacy hindered people's ability to fully engage in the digital banking ecosystem. This challenge prompted banks and governments to contemplate how they could more effectively serve these populations in a post-pandemic context.

3.6. Cybersecurity and Risk Management

- **Increased Cybersecurity Threats:** The swift transition to digital banking during the pandemic resulted in a notable increase in cyberattacks, phishing schemes, and fraud aimed at both consumers and financial entities. Cybercriminals sought to take advantage of weaknesses in banking systems, especially as banks rapidly expanded their digital frameworks. Consequently, banks encountered heightened pressure to improve their cybersecurity protocols, bolster data safeguarding, and establish more effective identity verification methods.
- **Investment in Technology and Cybersecurity:** In response to the escalating cybersecurity threats, banks allocated funds towards advanced technologies like artificial intelligence (AI) and machine learning to identify fraudulent actions and potential security vulnerabilities. Additionally, cybersecurity emerged as a central element of banks' overall risk management plans, as they endeavored to balance the necessity for innovation and customer ease with the crucial need to uphold security and reliability.

3.7. The Future of Banking: Post-COVID

- **Hybrid Banking Model:** Although the surge in digital banking has been significant during the pandemic, physical branches are not expected to vanish completely. The future of banking is anticipated to adopt a hybrid approach, providing both digital and physical services. Nevertheless, the significance of digital offerings is projected to grow, as customers adapt to the comfort and accessibility of online banking.
- **Role of Artificial Intelligence and Automation:** The pandemic has accelerated the adoption of artificial intelligence (AI) and automation in the banking sector. With AI-powered chatbots providing customer support and automated systems for credit evaluations and loan processing, the pandemic revealed the need for efficiency and scalability in banking operations. Looking forward, these technologies will play an essential role in enhancing customer experiences, reducing operational costs, and streamlining services.
- **Increased Collaboration Between Banks and Fintechs:** The pandemic has underscored the necessity for innovation within the banking sector, leading to increased collaborations between traditional banks and fintech firms. Banks are progressively partnering with fintech companies to launch new digital products, improve user experiences, and stay aligned with technological advancements in fields such as payments, lending, and personal finance management.

COVID-19 has profoundly transformed the banking environment, hastening the transition to digital formats and emphasizing the critical role of technology in maintaining business resilience and customer satisfaction. While the pandemic posed significant challenges, it also opened doors for innovation and long-term change within the banking industry. As the sector progresses, banks must adopt digital-first approaches, reinforce cybersecurity protocols, and discover ways to cater to an increasingly tech-savvy and convenience-oriented clientele.

4.DIGITAL BANKING DURING PRE-COVID

Before the COVID-19 pandemic, digital banking was expanding but had not reached the same level of prevalence as it did subsequently. Financial institutions had created online and mobile banking options to cater to the demands of technology-oriented clients.

- The majority of conventional banks possessed online banking platforms that enabled customers to review balances, transfer funds, settle bills, and access transaction records. Nevertheless, for more intricate services such as loans or opening new accounts, clients still had to go to a physical branch. Interaction was rising with resources to oversee accounts and track expenditures, yet the user experience frequently left much to be desired.
- Mobile banking apps also gained popularity. They provided similar services to online banking but added convenience for smartphone users. Customers could check balances, pay bills, and deposit checks using their phones, which made banking easier. However, many apps were still not optimized for a good user experience.
- Payment services like Venmo, PayPal, and Zelle were commonly used for sending money to others. Digital wallets such as Apple Pay and Google Pay allowed users to store card information on their phones for contactless payments, although this trend had not fully taken off yet. Traditional bank transfers were slower, but some banks offered bill pay services for automatic payments.
- Digital-only banks, known as neobanks, started to emerge before the pandemic. These banks, including Chime and Revolut, operated entirely online and focused on providing low-cost and user-friendly banking services, especially for younger customers.
- To enhance security, many banks began using two-factor authentication (2FA) for logins and experimented with biometric options like fingerprint and facial recognition. Banks also implemented encryption and fraud prevention measures, but they were still catching up with the increase in digital transactions.
- Customer service saw improvements, with many banks offering live chat and AI chatbots for assistance. However, more complex issues still required phone or email support, and in-person visits were often necessary for detailed matters like loan applications. Virtual consultations with financial advisors were available only to certain customers.
- Traditional banks began to make progress in digital transformation, though many still relied heavily on in-person service. Improvements in back-end systems were underway to speed up digital transactions, but changes were often slow and not visible to customers.
- Digital banking faced challenges like limited access for older generations and rural customers, fragmented services among different banks, and the need for in-person visits for complex transactions.

While digital banking was growing before COVID-19, it was not as widespread or advanced, with many services still dependent on physical branches. The pandemic accelerated the move towards fully digital banking, emphasizing the importance of mobile apps and online services.

5.POST- COVID-19 DIGITAL BANKING USAGE IN INDIA

The COVID-19 pandemic transformed how people in India utilize digital banking. Due to lockdowns, social distancing, and limitations on going outdoors, conventional banking practices such as visiting branches or using cash became more difficult and less desirable. As a result, a larger number of individuals began to utilize digital banking services, and digital payments emerged as the primary method for managing money for millions of Indians. Below are the key shifts in digital banking usage following the pandemic:

5.1. Increase in Adoption of UPI and Other Digital Payment Systems

- **Unified Payments Interface (UPI):** UPI, which was already making progress before the pandemic, emerged as the main payment option for the majority of Indians throughout the COVID-19 lockdown. Its ease of use and ability to quickly transfer money between people played a

significant role in its rapid growth. With physical bank branches closed and people reducing contact, UPI saw a remarkable increase in both transaction volume and the sums of money exchanged. According to the National Payments Corporation of India (NPCI), UPI transactions surpassed 5 billion in a single month in 2020, reflecting a noteworthy shift toward digital payments.

- **Digital Wallets and QR Code Payments:** Mobile wallets such as Paytm, Google Pay, and PhonePe became increasingly popular as individuals used them for essential activities like paying bills, grocery shopping, and transferring money. The use of QR codes offered a more convenient and secure way for individuals to pay for items without physical interaction, which was vital during the pandemic. This contactless payment method further accelerated the growth of digital wallets during this time.

5.2. Increased Trust in Digital Payments

- **Security and Trust Concerns:** Prior to the pandemic, a lot of individuals had concerns about the security of digital payments and lacked knowledge about online banking. Nevertheless, as the pandemic restricted face-to-face interactions, individuals were compelled to start utilizing digital payments. Throughout this period, banks and fintech companies endeavored to enhance the security of their platforms by incorporating features such as encryption and two-factor authentication. These advancements, paired with the growing awareness of the convenience and necessity of digital payments, contributed to an increase in trust in online banking.
- **Government Support for Digital Transactions:** The Indian government also promoted the adoption of digital payments through initiatives like the Digital India campaign and financial incentives. It became simpler for individuals to obtain benefits and subsidies via digital payments. For instance, the government employed direct benefit transfers (DBT) to deposit subsidies straight into bank accounts, which were frequently accessed through UPI or other digital banking methods.

5.3. Expanded Use of Mobile Banking and Internet Banking

- **Mobile Banking:** Mobile banking became crucial for conducting financial transactions during the pandemic. With smartphones, individuals could handle their banking necessities from home, including money transfers, balance checks, bill payments, and loan applications. The increasing usage of smartphones and improved internet connectivity in both urban and rural regions bolstered the popularity of mobile banking.
- **Internet Banking:** For those with access to computers and reliable internet, internet banking also saw an increase in usage. As physical bank branches remained closed or operated with limited services, internet banking enabled individuals to perform actions like transferring money, paying bills, and managing loans without needing to visit a branch. It also became essential for individuals to apply for loans, insurance, and various other services online during the pandemic.

5.4. Emergence of New Payment Technologies

- **Contactless Payments:** The pandemic accelerated the adoption of contactless payment options such as NFC (Near-Field Communication) and QR code payments. With individuals opting to minimize physical contact with cash or payment machines, contactless payments emerged as a favored choice. Numerous Indian banks and fintech apps facilitated the ability for users to pay simply by tapping their cards or scanning QR codes on their smartphones. This method was user-friendly and added a layer of hygiene, making it a preferred selection for both consumers and retailers.
- **Buy Now, Pay Later (BNPL) and Digital Credit:** Throughout the pandemic, numerous individuals encountered financial difficulties and sought more accessible ways to make purchases. Services like Buy Now, Pay Later (BNPL), including Simpl, LazyPay, and ZestMoney, gained significant popularity. They enabled individuals to make purchases and pay in installments, alleviating their financial strain. These services, alongside other digital lending alternatives, granted people rapid access to credit without needing to visit a bank in person.

5.5. Increased Adoption of Digital-Only Banking and Fintech Solutions

- **Rise of Neobanks:** Neobanks—banks that operate only online without physical branches—became more popular during the pandemic. Neobanks like Niyoy, Finbox, and Upstox offered full banking services such as savings accounts, payments, loans, and investments, all through apps or websites. They took advantage of the demand for easy banking and personalized services, especially among younger, tech-savvy people. Neobanks became a great alternative to traditional banks during the pandemic since they allowed customers to sign up and access banking services anytime, anywhere.
- **Fintech Innovations:** Fintech companies in India introduced new digital financial services to meet emerging needs. The pandemic led to innovations in payments, loans, insurance, and investments. For example, fintech companies offered fast personal loans with little paperwork, making it easy for people to get funds for emergencies. Similarly, digital investment platforms gained more users as people explored options like mutual funds and stocks from home. Digital insurance providers also offered policies that could be bought and managed online, helping people protect themselves and their families during uncertain times.

5.6. Challenges and Barriers to Digital Banking Post-COVID

- **Digital Divide:** While digital banking grew in cities, rural areas and people without smartphones, computers, or reliable internet struggled to fully participate in the digital economy. Despite efforts to improve digital literacy and access to devices, many in rural areas continued to rely on cash-based transactions. To solve this, more investments in rural internet access, digital education, and affordable devices are needed to ensure everyone can benefit from digital banking.
- **Cybersecurity Risks:** The quick shift to digital banking during the pandemic also brought new security challenges. With more people using online banking, cybercriminals took advantage of the situation, leading to an increase in scams, fraud, and hacking. To address this, banks and fintech companies strengthened their security measures, and the government issued guidelines to protect users. However, educating consumers about digital security is still crucial to keep digital banking safe.

5.7. Long-Term Implications for the Future of Digital Banking in India

- **Continued Growth of UPI and Digital Payments:** Following COVID-19, digital payments alongside UPI are predicted to continue their expansion. The Indian government's objective for a cashless economy, along with shifts in consumer behavior, indicates that UPI and other digital payment options will maintain their significance. With the introduction of UPI 2.0, featuring enhancements such as overdraft facilities, improved security, and invoice approvals, UPI is poised for ongoing growth.
- **Digital Financial Inclusion:** A key advantage of the transition to digital banking during the pandemic is that it facilitates the inclusion of more individuals into the financial ecosystem. Digital platforms provide individuals in marginalized areas with access to banking services including savings accounts, loans, and insurance. Through sustained initiatives aimed at enhancing digital literacy and increasing internet availability in rural regions, a greater number of individuals will be able to participate in the formal financial sector.
- **Integration of Advanced Technologies:** The future of digital banking in India will encompass the incorporation of sophisticated technologies such as artificial intelligence (AI), machine learning, blockchain, and data analytics. These technologies will foster new innovations, providing features like more individualized banking experiences, advanced financial products, and enhanced security measures. AI and machine learning will automate functions, identify fraudulent activities, and deliver personalized financial guidance to customers.

6. KEY TRANSFORMATIONS IN DIGITAL BANKING AFTER COVID-19

6.1. Rapid Growth in Digital Banking Usage

- Greater dependence on mobile banking applications and online banking platforms.
- Traditional banks are expanding their digital capabilities to stay competitive with fintech firms.
- Rise of digital-only financial institutions (neobanks) that operate without physical branches.

6.2. Increase in Contactless and Digital Transactions

- More widespread use of contactless payments via NFC-enabled cards and mobile payment solutions.
- Growing popularity of QR code-based transactions in both retail and online commerce.
- Expansion of cryptocurrencies and central bank digital currencies (CBDCs) as alternative financial instruments.

6.3. Advancements in AI and Automation

- Greater reliance on AI-powered chatbots and virtual assistants for customer support.
- AI-driven fraud detection and risk mitigation tools improving security.
- Use of machine learning and predictive analytics to create personalized banking experiences.

6.4. Strengthened Cybersecurity Measures

- Rise in cyber threats such as phishing attacks, ransomware, and identity theft.
- Adoption of multi-factor authentication (MFA) and biometric verification (fingerprint, facial recognition) for enhanced security.
- Implementation of stricter regulations to protect customer data and ensure compliance.

6.5. Transition to Cloud Computing and Blockchain Technology

- Greater use of cloud-based banking solutions for scalability and enhanced security.
- Exploration of blockchain technology for secure transactions and smart contract applications.
- Expansion of Decentralized Finance (DeFi), challenging traditional banking structures.

6.6. Evolving Regulatory and Compliance Frameworks

- Introduction of new data protection laws (GDPR, CCPA, etc.) impacting digital banking operations.
- Increased regulatory scrutiny over digital currencies and fintech activities.

- Tighter enforcement of anti-money laundering (AML) and know your customer (KYC) policies.

6.7. Changing Customer Expectations

- Growing demand for seamless banking experiences across multiple platforms (web, mobile, chatbots).
- Customers seeking 24/7 banking access with real-time support.
- Rising interest in financial wellness tools, such as budgeting applications and AI-driven investment advisors.

6.8. Reduction of Physical Bank Branches

- Many traditional banks shutting down branches or shifting towards hybrid service models.
- Emergence of self-service kiosks and video banking options for remote customer assistance.
- Increased emphasis on digital onboarding and online account management.

6.9. Growth of Embedded Finance

- Expansion of "Banking-as-a-Service" (BaaS), enabling non-banking firms to offer financial products.
- Rising adoption of "Buy Now, Pay Later" (BNPL) solutions integrated into e-commerce platforms.
- Emergence of super apps (e.g., WeChat, Paytm) that provide banking, payment, and financial services in one platform.

6.10. Emphasis on Sustainability and Green Banking

- Digital banking reduces paper usage and carbon emissions.
- Growing popularity of eco-conscious financial products, including green loans and ESG-based investments.
- Banks increasingly support sustainable finance initiatives via digital platforms.

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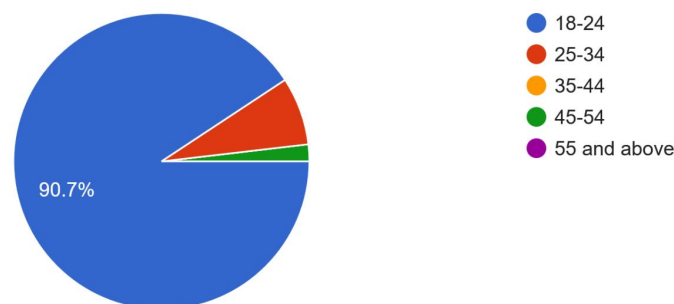
7. RESEARCH ANALYSIS: TRENDS IN DIGITAL BANKING USAGE BEFORE AND AFTER COVID-19 (QUESTIONNAIRE)

7.1. Introduction

Digital banking has transformed the way individuals access financial services, offering convenience, accessibility, and time-efficiency. The COVID-19 pandemic has significantly accelerated the adoption of digital channels as consumers avoided physical contact and sought safer transaction methods. This research aims to analyze the evolving trends in digital banking practices with a special focus on the before-and-after scenarios brought on by the pandemic. The data for this study was collected via a structured questionnaire aimed at understanding demographic preferences, service usage, perceived benefits, challenges, and future expectations from digital banking systems.

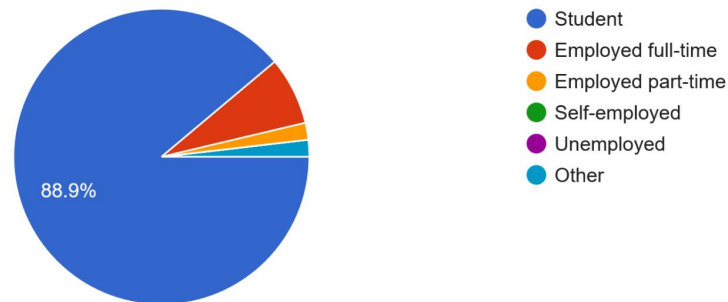
1. Age Group:

54 responses



2. Occupation:

54 responses



7.2. Demographic Overview

7.2.1 Gender Distribution:

The survey saw a higher number of female participants compared to males. This suggests that digital banking usage is not restricted by gender, with females engaging actively with these services, possibly due to increasing financial literacy among women.

7.2.2 Age Distribution:

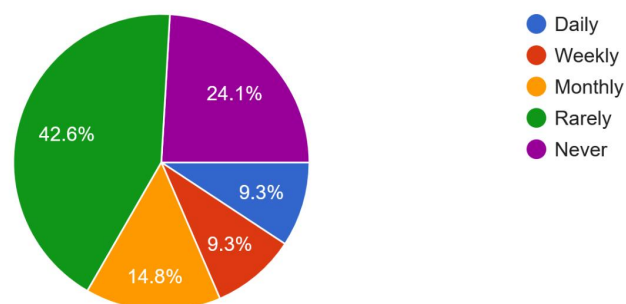
The dominant age group was 18–24 years, which includes university students and early-stage professionals. This generation is typically more comfortable with technology, explaining the high adoption of digital banking services. Their responses reflect modern-day expectations from financial systems and give insight into the future trajectory of banking behavior.

7.2.3 Educational Background and Tech Exposure:

While the form did not explicitly ask about education level, the age group and responses suggest that most respondents are tech-savvy and well-versed with digital tools, likely due to academic and social exposure.

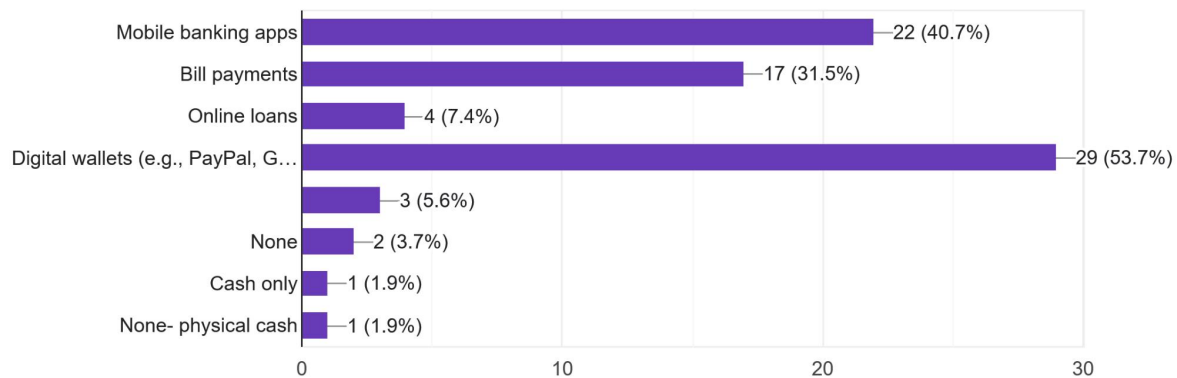
3. How often did you use digital banking services before the COVID-19 pandemic?

54 responses



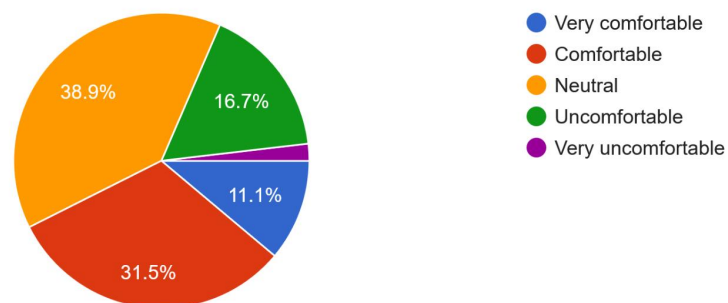
4. Which of the following digital banking services did you use before COVID-19?

54 responses



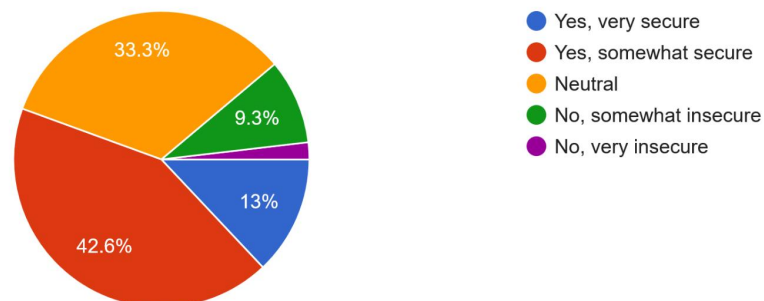
5. How comfortable were you with using digital banking services before the COVID-19 pandemic?

54 responses



6. Did you feel your bank's digital services were secure before the COVID-19 pandemic?

54 responses



7.3. Awareness and Usage of Digital Banking

7.3.1 Awareness Levels:

Almost 100% of respondents confirmed that they are aware of digital banking services. This high awareness may be attributed to the active promotion of digital platforms by banks and government initiatives supporting fintech growth.

7.3.2 Frequency of Usage:

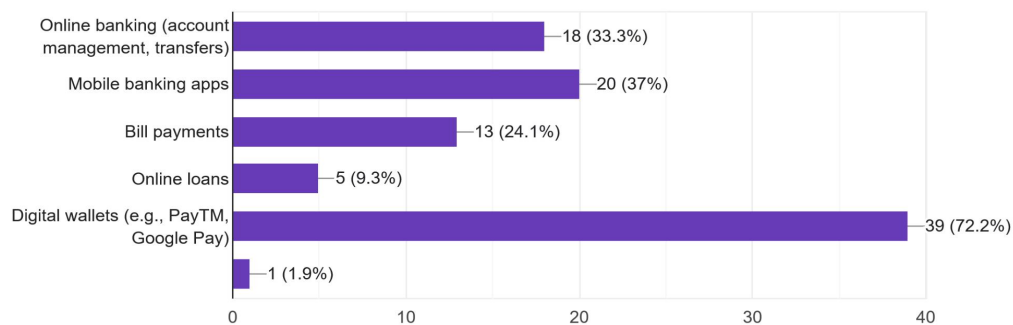
The majority use digital banking services daily or weekly, indicating that digital banking has become an integral part of financial management. Rare or non-users were negligible, underscoring the wide adoption.

7.3.3 Devices Used:

Most participants access digital banking services through mobile phones via banking apps or UPI-based applications. Laptops and desktops are used less frequently, indicating the shift toward mobile-first experiences.

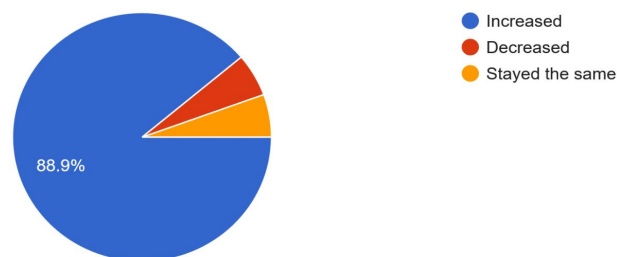
7. Which of the following digital banking services have you used more since the COVID-19 pandemic?

54 responses



8. Has your use of digital banking services increased, decreased, or stayed the same since the onset of COVID-19?

54 responses



7.4. Digital Services Utilized

Respondents reported using a wide range of digital banking services. The most commonly used ones include:

- UPI platforms (e.g., Google Pay, PhonePe, Paytm)
- Internet banking
- Mobile banking apps
- ATM locators, account balance inquiries, and fund transfers
- Bill payments and recharges
- QR code payments for offline purchases

This highlights a diverse and multi-functional use of digital banking tools beyond just transferring money.

9. What factors influenced your increased usage of digital banking during or after the pandemic?

54 responses



7.5. Perceived Benefits of Digital Banking

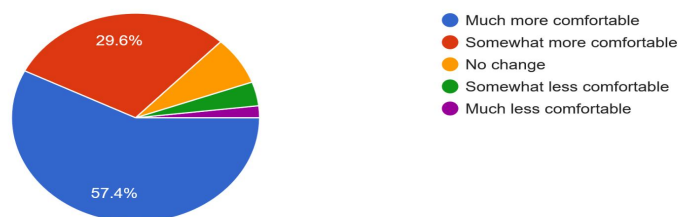
The top perceived benefits reported were:

- Convenience: The ability to perform transactions anytime and from anywhere.
- Speed: Instant fund transfers and reduced transaction time.
- Accessibility: Easy access through mobile apps, especially for students and professionals.
- Paperless transactions: Environmentally friendly and efficient.
- Contactless payments: Especially emphasized during and post-COVID for hygiene purposes.

This indicates strong alignment between digital banking features and user expectations.

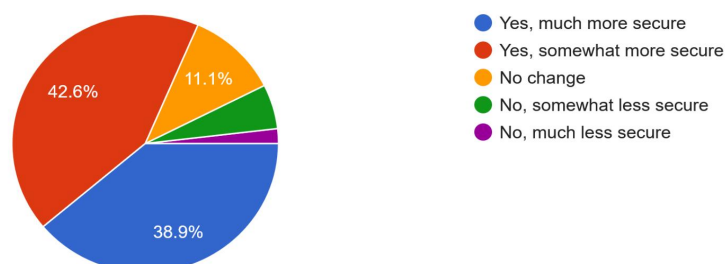
10. Do you feel more comfortable with digital banking services now, compared to before the COVID-19 pandemic?

54 responses



11. Do you feel your bank's digital services are secure now compared to before the pandemic?

54 responses



7.6. Security and Trust Issues

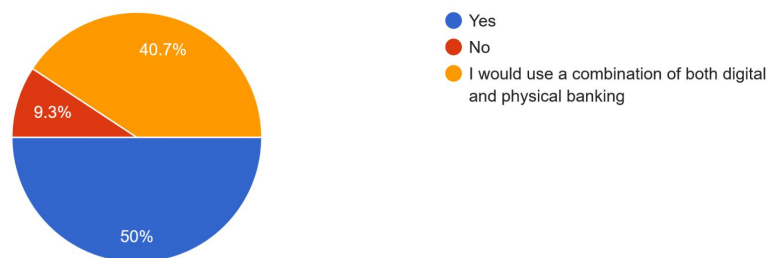
Responses to digital banking safety were mixed:

- Many respondents trusted digital banking due to OTPs, biometric authentication, and app security layers.
- However, a significant minority expressed concerns regarding phishing, scams, and data theft.
- Some users avoid high-value transactions through mobile apps due to fear of cyber fraud.

Conclusion: Security awareness is high, but consistent education and system improvements are needed to reinforce trust.

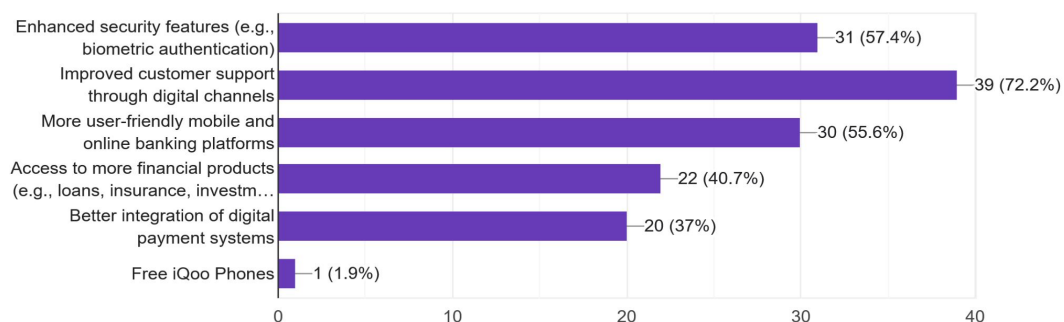
12. Would you prefer to continue using digital banking as your primary banking method after the pandemic, even when physical branches reopen?

54 responses



13. What improvements would you like to see in digital banking services post-COVID?

54 responses



7.7. Changes in Behavior Due to COVID-19

- Increased Usage: A clear spike in the frequency of digital banking post-COVID-19. Users shifted from cash-based transactions to digital for essentials like groceries, bills, and shopping.
- Adoption by First-Time Users: Some users mentioned adopting digital banking for the first time during the pandemic due to necessity.
- Preference for Contactless Payment: The pandemic normalized QR-based transactions and reduced ATM withdrawals.

These shifts are likely to continue, indicating a long-term behavioral change.

7.8. Challenges Faced by Users

Despite overall satisfaction, users highlighted some challenges:

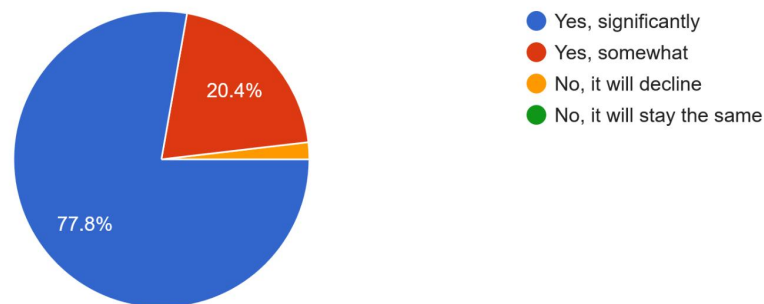
- App crashes and technical glitches

- Slow customer support response
- Difficulty in recovering money in case of failed transactions
- Limited support in rural or low-connectivity areas
- Complex interfaces for older users or non-tech-savvy individuals

This suggests a digital divide that banks need to bridge to ensure inclusivity.

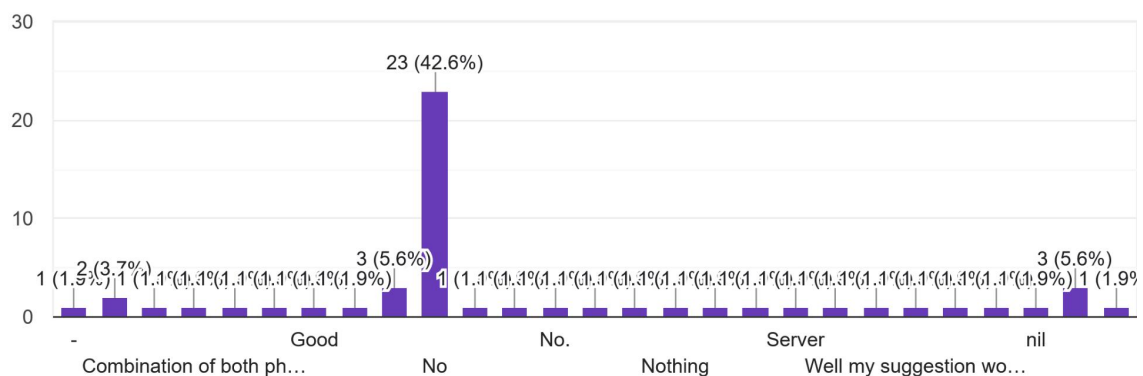
14. Do you think digital banking will continue to grow in importance post-COVID?

54 responses



15. Do you have any concerns or suggestions regarding digital banking services moving forward?

54 responses



7.9. Expectations and Future Outlook

Users expressed interest in:

- AI-powered chatbots for faster resolution
- Voice-based banking for accessibility
- Enhanced fraud detection
- Multilingual support in apps
- Integrated finance dashboards for managing expenses and savings

These features reflect the growing sophistication of user expectations from digital financial systems.

7.10. Conclusion

The analysis shows that digital banking is not only widely adopted but has become an essential part of financial life for young users. COVID-19 acted as a key driver, pushing even hesitant individuals toward digital platforms. While users enjoy the convenience and efficiency, there remain concerns around security and inclusivity that must be addressed. The findings imply a need for banks and fintech companies to invest more in user education, UI/UX improvements, cybersecurity, and support services to ensure continued growth and trust in digital banking.

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