



Growth Of Mobile Banking In India: Comprehensive Study

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ABSTRACT

The government's goal for cash-less economy and growing use of mobile phones have contributed to the exponential growth of Mobile banking transactions in India in recent years. COVID-19 and demonetization have considerably impacted this trend. By investing in new technologies, banks can make their mobile banking apps more convenient, secure, and user-friendly. As communication technology continues to evolve, more innovative and valuable mobile banking features and services will be in the future. The Digital India scheme has increased financial inclusion and improved the digital infrastructure and financial literacy in India, making mobile banking more accessible to broader population. Trend analysis shows consistent rise in the volume and value of mobile banking transactions. The paper finds that growth of Mobile banking transactions provides valuable understanding for the banks, Government, and policymakers. Considering the positive trend, it is essential to understand the factors that empower sustainable environmental growth in the digital economy.

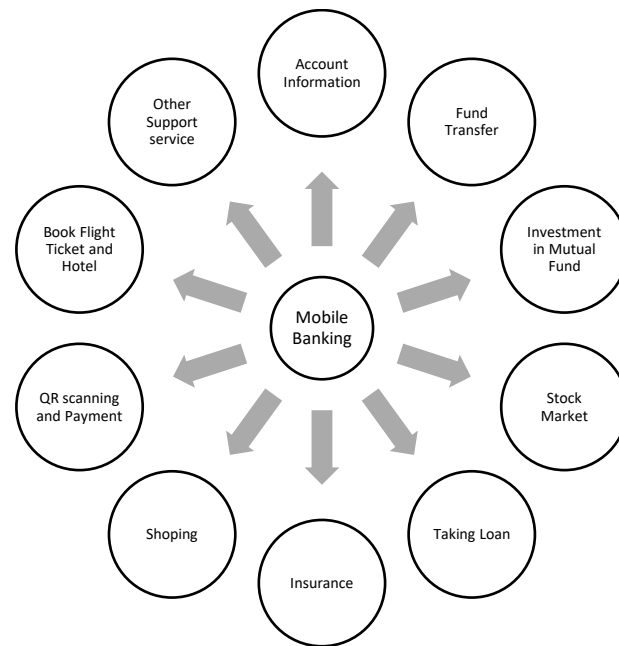
Keywords: Government Scheme, Mobile banking, Technology,

Introduction:

Mobile banking, often known as "m-banking" or "mobile financial services," is a technological innovation that allows people to access different banking and financial services via mobile devices like smartphones and tablets. Mobile banking is a convenient and secure system to manage people's finances. It is also a popular alternative to traditional brick-and-mortar banking, allowing customers to bank from anywhere at any time. It indicates a significant development in how people handle money, conduct transactions, and communicate with financial institutions. Due to its accessibility, ease, and potential to reach unserved communities, Users can access their bank accounts through mobile banking, check balances, view transaction history, and keep track of account activities in real-time. Banks offer mobile-friendly or specific mobile apps for this access. Users can transfer funds between their accounts, pay bills, send money to others or businesses, and execute various financial transactions using mobile/smartphones. (Nidhi Singh, 2016) The profiles of Indian customers have changed significantly. They are ready to accept the technology-upgraded network. According to Deloitte's 22 Global TMT (Technology, Media and Entertainment, Telecom) report, "The Smartphone market is expected to reach 1 billion Smartphone users by 2026". According to Deloitte's analysis, smartphone demand in India is expected to increase at a CAGR of 6 percent, reaching about 400 million smartphones in 2026 from 300 million in 2021. India has over 150 million mobile phone users and is expected to grow approximately 3.5 times in the next five years (Basuroy, 2023). The launch of various Mobile banking apps like ICICI I Mobile, HDFC Mobile Banking, SBI's YONO App, etc., has been demonstrated to be a game changer in India. (Dr. Varsha Agarwal et al., 2020)

Mobile banking is a facility that enables customers to access banking services through a phone. Mobile banking has made available benefits to providers and those who avail of the services. Mobile phones provide a way to reach out to people in isolated areas. Mobile banking is cost-effective for bankers and customers. (SINGH, 2014) Mobile banking services provided by the bank included Account information, fund transfer, investment, and other support, as given in Figure 1

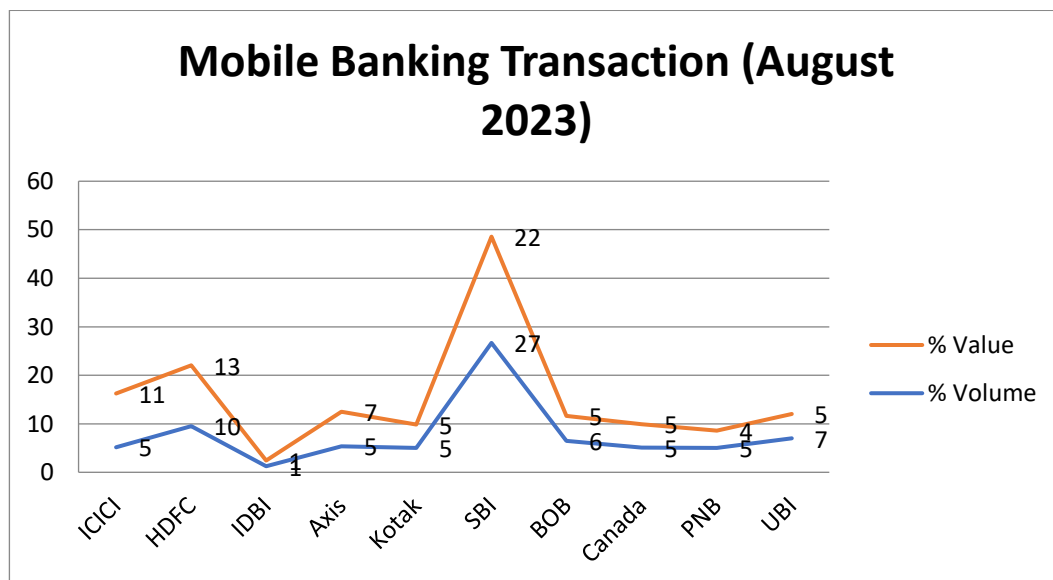
Figure-1



Top banks providing mobile banking facilities in India

Mobile technology has an extensive impact on banking financial services, be it payment or other banking services worldwide. (Sunil, 2013) During the last ten to fifteen years, the competition in the banking sector has been elevated. Due to competition, Banks or financial service providers face enormous challenges in providing similar customer services. (Alwi, 2019) ICICI Bank provided mobile banking facilities to customers in 2008. Over the years, various banks have introduced mobile banking services, with availability and functionality varying by location and bank. Since then, banks have continued to enhance their mobile banking platform to provide a wide range of services with more flexibility and safety. Hence, the bank and financial institute may gain advantages by providing better service at lesser cost with perceived benefits to their customers and satisfying customer's needs to attain the organization's goals. (Agarwal, 2020)

Chart-1 Bank-wise Mobile Banking Statistics for August 2023



Source: RBI data-based

As per Chart-1, the State Bank of India has covered 27% of the volume (transaction in No.) and 22% value (Transaction in Rs.) of the total mobile transactions in August 2023. The second leading bank is HDFC bank, which is covered 10% in volume (transaction in No.) and 13% in value wise (Transaction in Rs.) mobile transactions. As per the chart, ICIC, HDFC, IDBI, Axis, Kotak, SBI, BOB, Canada, PNB, and UBI covered 77% of the total value (transaction in Rs.) and volume (transaction in No.) of mobile banking transactions for August 2023. Technology innovation and upgradation by the above banks directly impact mobile banking transactions growth in India.

Literature Review:

(Singh Sikarwar, 2019) In this study, the researcher describes that in 2016, due to demonetization, Banks faced a cash shortage. The cash shortage made it difficult for banks to meet the needs of their customers; this resulted in heavy crowds in banks and ATMs, leading to the offense of ordinary people. Demonetization pushed many people to start transactions on the E-Banking system, i.e., NEFT and RTGS. On the other hand, the Digital India scheme is also promoted for online banking transactions by the Government of India. Researchers study the long-term impact of demonetization on the E-Banking system. The paper attempts to assess the importance, extension, and implication of E-Banking after demonetization. (Dr. Varsha Agarwal et al., 2020) observed in the study that the COVID-19 pandemic is the second-largest situation after demonetization. The COVID-19 situation directed a 5% growth in mobile banking transactions for three months from January to March 2020 and is also expected to grow even more in the future. According to the study, The Government of India has extended its support to mobile banking transactions through its partnership with various banks to increase the acceptance of Mobile banking among customers. (Gupta Vishnu, 2022) In his paper, an attempt has been made to determine the growth rate and the impact of Covid-19 on digital transactions. The result was analyzed with the help of paired sample t-test and CAGR through SPSS software, which showed that COVID-19 has positively benefitted banking transactions as there has been positive growth during the COVID-19 period. Finally, it was discovered that the pandemic situation increased the usage of digital banking platforms for performing banking transactions. (Shetty, 2019 April) As per research study, Digitalization is the need of today's world. It is the result of innovations and technological advances. As a part of it, the Government of India launched the Digital India scheme, which is a flagship program to transform India into a digitally empowered and knowledge economy. Digital India initiative aims to reach the untouched area through broadband highways, worldwide access to mobile connectivity, and public internet awareness programs. This research paper attempts to analyze the awareness of the Digital India scheme among the youth and its impact on mobile banking transactions.

(Deshwal, 2015) the study discussed that the Penetration of mobile banking services from high-end users to low-end users and cities to rural areas possible due to collaborations among various organizations (Ushadevi, 2018) According to the researcher, the new technology adoption rate of the customers in the banking sector is beneficial for the growth of banks in India. The bank and the financial institute provide digital technology-enabled services effectively to the customers. Due to competition, every bank provides modern and innovative services to attract and retain customers. Mobile banking technology is a user-friendly and widely used concept among other online banking. Mobile banking technology is used for online money transfers, credit applications, bill payments, etc., by using mobile devices. The exceptional boost in the consumption of mobile phones in both urban and rural areas creates opportunities for the growth of mobile banking.

(Ashish Saxena, 2022), (P.Rajeswari, 2021) and (V.Kanimozhi, 2022) in their study, they discussed financial technology (Fintech) and online payment growth. Now, people can do lots of transactions with just one click, invest money, and buy financial products like insurance with the advancement of technology. Fintech deviates from traditional banking and non-banking finance services. In the study, they focus on India's journey towards adaptation of fintech and how fintech start-ups impact the growth of mobile banking. According to them, to support a cashless digital economy, a robust fintech ecosystem has been developed by the government both at the policy and funding levels. Government aggressive strategy and continuous innovation in financial technology directly or indirectly turn into one of the significant factors in the growth of mobile banking.

Interpretation of Literature Review and Study Gap:

The literature review endorsed that the following are some key factors contributing to the growth of mobile banking:

- (1) Government initiatives with the object to combat black money, to reduce counterfeit currency, and to promote digital transactions (including mobile banking) – **Demonetisation (2016)**. The demonetization led to a temporary shortage, and significant shifts in payment behavior pushed the adoption of mobile banking.
- (2) The **COVID-19 pandemic** accelerated the adoption of mobile banking as people prefer safer and no-touch payment options during lockdowns and social distancing measures.
- (3) The **availability and adoption of the smartphone** possible mobile banking. Due to smartphones, people have easy and more convenient access to banking services on mobile devices.
- (4) The high-speed **mobile internet network**, from 2G to 4G and now 5G, ensures the user accessibility of mobile banking services quickly, reliably, and safely.
- (5) Due to **growth in Fintech start-ups**, competition between banks and fintech companies has arisen, driving the development of mobile banking services, leading to continuous improvement and innovation.
- (6) **Government Initiatives “Digital India”** has been instrumental in promoting digital and mobile-based financial services. The GOI launched the “Digital India Scheme” to develop (1) Digital Infrastructure, (2) Governance and services on demand (3) Digital empowerment of citizens.

Based on the above literature review, studies regarding the growth of mobile banking considered one or two of the above factors. This paper attempts to study all the factors together to understand their impact on the growth of mobile banking in India.

Research Objective

The research aims to provide a comprehensive and up-to-date assessment of the mobile banking landscape in India. To investigate and analyze the growth of mobile banking in India, the researcher framed the following study objectives.

- (1) To study the growth of mobile banking transactions in India from 2011-12 to 2022-23
- (2) To analyze the impact of government policy (Demonetisation) and Government Scheme (Digital India) on Mobile Banking Transactions in India
- (3) To study the impact of Technology Determinants (factors) on mobile banking Transactions in India
- (4) To study the impact of COVID-19 on mobile banking Transactions in India

Research Questions

As per the above Research objectives, the following questions have been framed.

- Q.1 What is the trend of Mobile banking transactions in India from 2011-12 to 2022-23
- Q.2 How Government policy (Demonetization) and Government Scheme (Digital India) impact mobile banking transaction growth in India.
- Q.3 How Technology upgradation impacts mobile banking Transactions in India.
- Q.4 How does the COVID-19 pandemic impact mobile banking growth in India

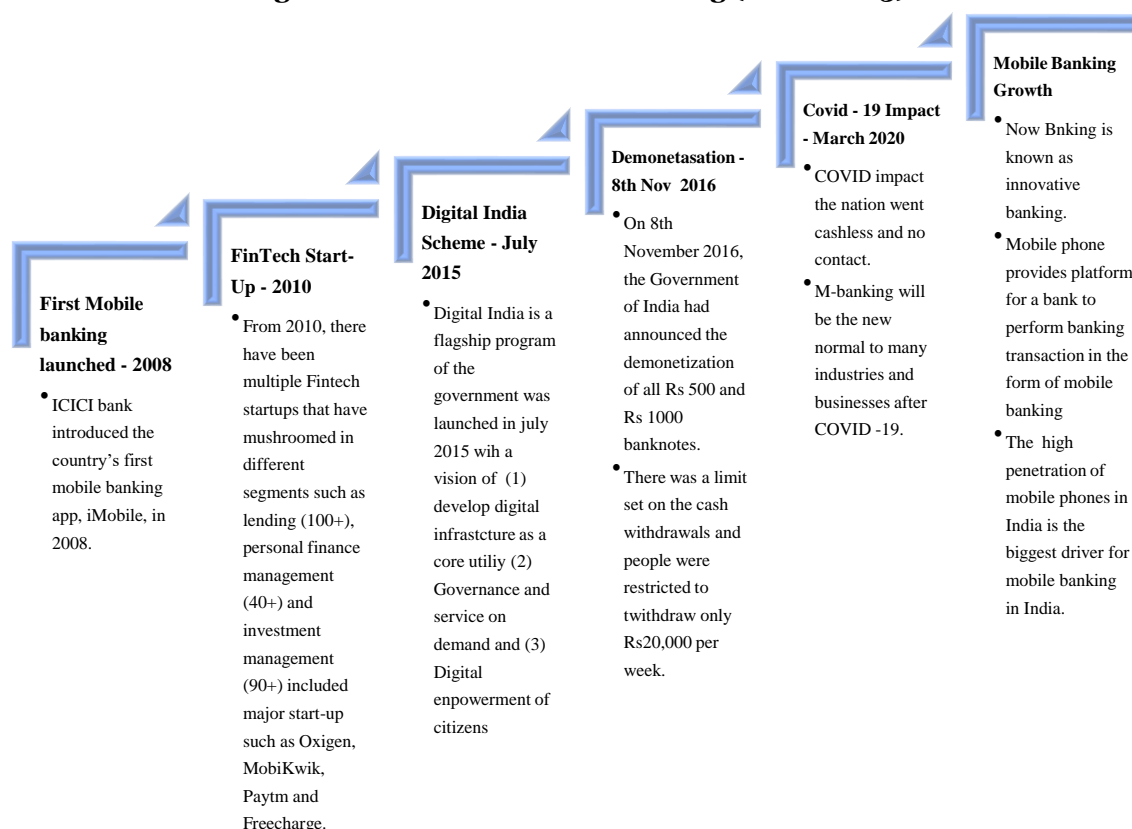
Research Methodology

The research followed an exploratory research approach to study the objectives. Data was collected from the RBI (Reserve Bank of India) bulletin, annual report, and National Payments Corporation of India and Telecom Regulatory Authority of India websites.

Trend analysis is a statistical technique used to identify and analyze patterns or trends in the data over time. The author adopted the trend analysis technique to analyze the growth of mobile banking in India. The study examines trend analysis of mobile banking transactions from 2011-12 to 2022-23. The data was analyzed from January 2023 to October 2023.

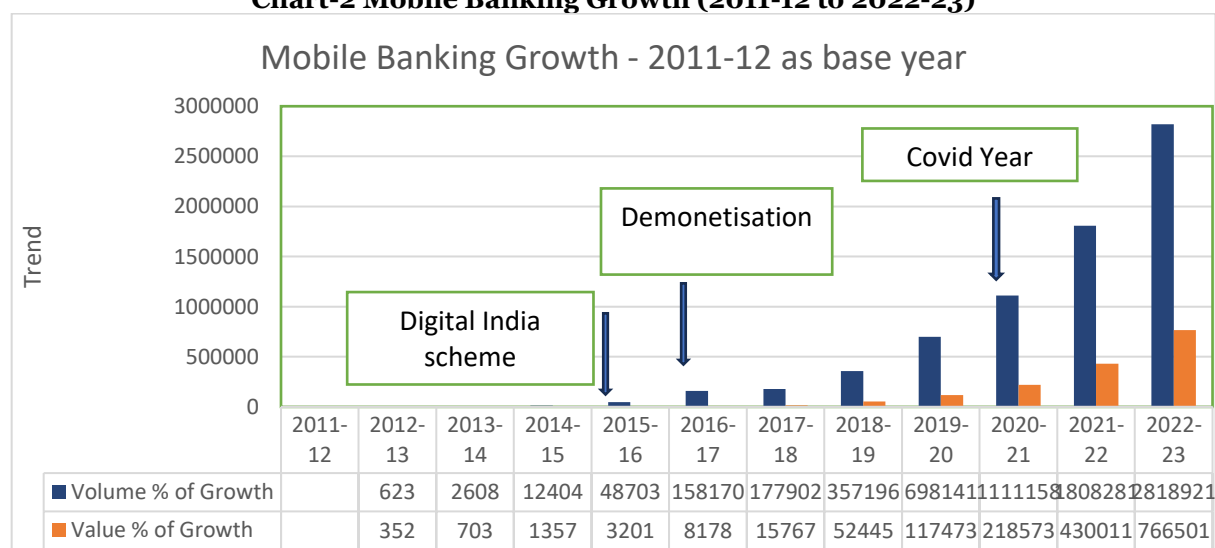
Q.1 What is the trend of Mobile banking transactions in India from 2011-12 to 2022-23?

The growth of mobile banking was studied with the consequence of (1) Demonetisation, (2) Government Scheme, (4) Covid-19 impact, (5) Mobile network speed, (5) Growth of smartphone users, and (6) Financial technology growth in India as per figure -2

Figure 2 Growth of Mobile banking (2008-2023)

Mobile banking growth from 2008 to 2023 has been exponential (Rapidly increased). In 2008, there were only a few million mobile banking users worldwide. By 2023, that number had grown to over 3.6 billion. (RBI, 2023) This growth has been driven by several factors, including:

- Innovation in Financial services provided by bank and Fintech start-ups
- The increasing penetration of smartphones and other mobile devices
- The growing demands for digital payments due to demonetization and COVID-19 no contact impact.
- Government initiatives to promote financial inclusion by launching digital India scheme schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY), the Aadhaar Enabled Payment System (AEPS), etc.

Chart-2 Mobile Banking Growth (2011-12 to 2022-23)

Source: <https://rbi.org.in/Scripts/Statistics.aspx>

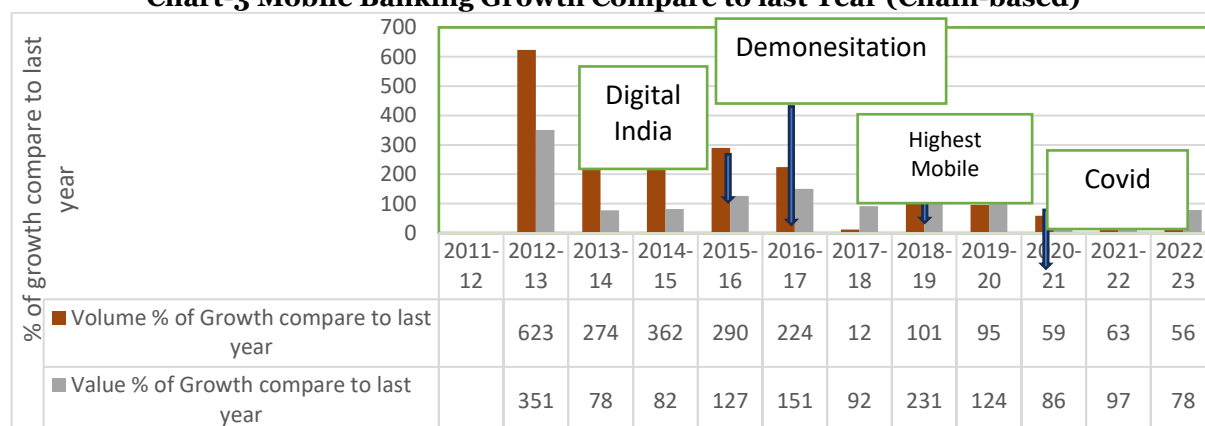
As per Chart-2, Mobile banking's % of Growth in Volume and value showed exponential. (rapidly increased) It has been observed that taking a based year from 2011-12(100), 48703 times growth has been recorded in volume (No of transactions), and 3201 times growth has been recorded in value (Transaction in Rupees) in the year 2015-16, where Government of India launched Digital India Scheme (July 2015).

(1) After the Digital India scheme, in November 2016, the Government of India announced the Demonetisation of Rs. 500 and Rs.1000 banknotes, which directly and indirectly impact mobile banking transactions. In 2016-17, Mobile banking growth was recorded 158170 times in volume (No. of Transactions) and 8178 times in value (Transactions in Rs.).

(2) The first case of COVID-19 virus was reported in India on 27th Jan 2020. The 2020-21 year was the most affected worldwide, and due to social distance and no touch approach, Mobile banking transaction in India was recorded 1111158 times increased in volume (No of Transactions) and 218573 times increased in value (Transaction in Rs.).

(3) Compared to 2011-12, Mobile banking growth in volume (No. of transactions) and value (Transactions in Rs.) was recorded 2818921 times and 766501 times in the year 2022-23 due to Digital India and other government schemes like Pradhan Matri Jan Dhan Yojana etc., Demonetisation policy, Increase in smartphone internet users, Upgrading of Mobile network technology and Financial technology growth adopted by the bank and financial institute.

Chart-3 Mobile Banking Growth Compare to last Year (Chain-based)



Source: <https://rbi.org.in/Scripts/Statistics.aspx>

Chart 3 exhibited the Government of India's Digital India scheme impact in 2015-16 mobile banking transactions increased 290 times in volume (No. of Transactions) and 127 times in value (Transactions in Rs.). Compared to 2014-15. Demonetisation scheme impact in 2016-17 mobile banking transactions increased 224 times in volume (No. of Transactions) and 151 times in value (Transactions in Rs.). The highest number of Mobile phone internet users was recorded in 2018-19, and its impact on mobile banking transactions increased 101 times in volume (No. of Transactions) and 231 times in value (Transactions in Rs.). In the year 2020-21, due to the COVID-19 virus, mobile banking transactions were 59 times in volume (No. of Transactions) and 86 times in value (Transactions in Rs.).

Q.2 How do Government policy (Demonetization) and Government schemes (Digital India) impact mobile banking transaction growth in India?

(1) Government Scheme

The Digital India program has four pillars:

- 1. Digital Infrastructure:** To create a digital infrastructure as a utility to every citizen, providing high-speed internet and mobile connectivity.
- 2. Digital Services:** To deliver government services to citizens electronically through a single portal.
- 3. Digital Literacy:** To make all citizens digitally literate and empower them to use digital technologies to improve their lives.
- 4. Digital Manufacturing:** To promote the electronics manufacturing industry in India and make India a global hub for electronics manufacturing.

The Digital India program has made significant progress in recent years. Some of the key achievements include (csc.gov.in, 2023):

- Over 1.2 billion mobile phone connections and over 800 million internet users in India.
- The launch of the Aadhaar program, the world's largest unique identity database.
- The launch of the Unified Payments Interface (UPI), a digital payment system that has made it easy and convenient for people to make digital payments.
- The launch of the Digital India Portal, which provides a single platform for citizens to access government services online.
- The launch of the e-District program, which has made it possible for citizens to access government services online at the district level.

- The launch of the Pradhan Mantri Jan Dhan Yojana (PMJDY), which has provided bank accounts to over 450 million people, many of whom are from low-income households.
- The launch of the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA), a scheme to make rural citizens digitally literate.
- The launch of the Make in India program, which has attracted significant investment in the electronics manufacturing sector.

The Digital India program has had a significant impact on the lives of millions of Indians. It has made it easier for people to access government services, make payments, and connect with others. (csc.gov.in, 2023)

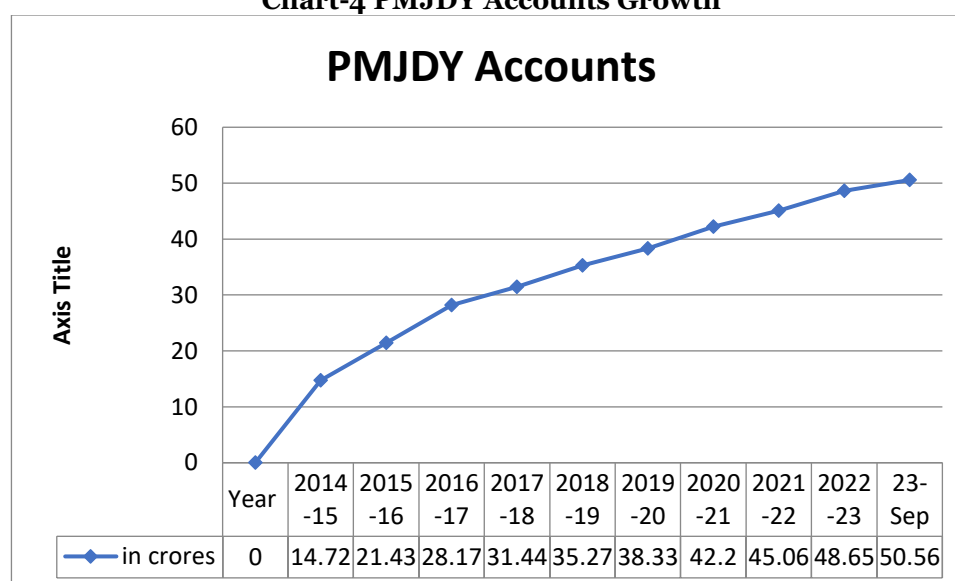
Digital India government initiatives (Chopra, 2016):

- **Aadhaar:** Aadhaar is a unique identity number issued to every Indian citizen. It is used to authenticate individuals and to access government services.
- **UPI:** UPI is a digital payment system that allows users to make instant payments to each other using their smartphones.
- **Digital India Portal:** The Digital India Portal is a single platform where citizens can access government services online.
- **e-District:** The e-District program allows citizens to access government services online at the district level.
- **PMJDY:** The PMJDY scheme provides bank accounts to people from low-income households.
- **PMGDISHA:** The PMGDISHA scheme is a scheme to make rural citizens digitally literate.
- **Make in India:** The Make in India program is an initiative to attract investment in the electronics manufacturing sector.

The Digital India program is a transformative initiative helping to make India a digitally empowered society and knowledge economy.

(a) PMJDY Scheme

Chart-4 PMJDY Accounts Growth



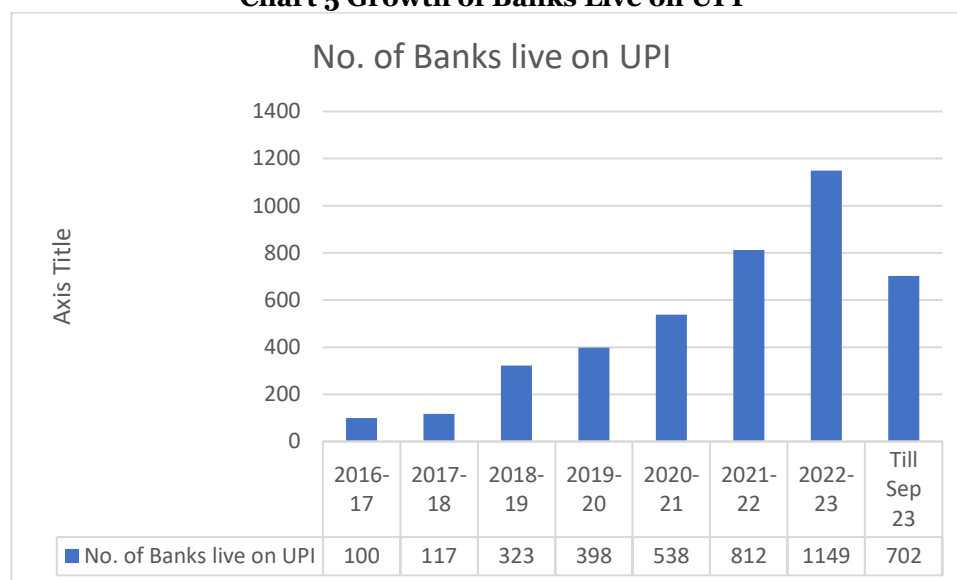
Source: pib.gov.in/PressRelease

Mobile banking is a type of banking that allows customers to access their bank accounts and perform banking transactions using a mobile phone. Mobile banking can make payments, transfer money, check account balances, and more. PMJDY and mobile banking are complementary initiatives working together to make financial services more accessible to people in India. Mobile banking is a convenient and affordable way for PMJDY account holders to access their bank accounts and perform banking transactions. Chart 4 represents the Pradhan Mantri Jan Dhan Yojana accounts growths from 2014-15 to 2022 to 2023. PMJDY accounts grew 14.72 crores in 2014-15 to 48.65 crores in 2022-23 and 50.56 crores till Sep 2023. As per RBI Data, Mobile banking transactions in volume increased 48703 times in 2015-16 compared to 2011-12 and value-wise 1357 times compared to 2011-12. Compared to 2014-15 years, 290% growth has been shown in mobile banking volume, and 127% growth has been recorded in the value of the mobile banking transactions in 2015-16 due to Digital India initiatives by the Government.

(b) Unified Payments Interface (UPI)

The Unified Payments Interface (UPI) was launched in India in 2016. It was developed and operated by the National Payments Corporation of India (NPCI). UPI is a real-time payment system that allows users to transfer money between bank accounts using a mobile phone. It is a fast, secure, and convenient payment method (NPCI, 2023). UPI has had a significant impact on the Indian economy. It has made it easier for people to make payments, and it has helped to reduce the use of cash. UPI has also helped to promote financial inclusion by making it easier for people from low-income households to access financial services. UPI has become one of the most popular payment methods in India. In the financial year 2022-23, over 74 billion UPI transactions were processed, worth over ₹125 trillion. People from all walks of life, including individuals, businesses, and government agencies, now use UPI. (NPCI, 2023)

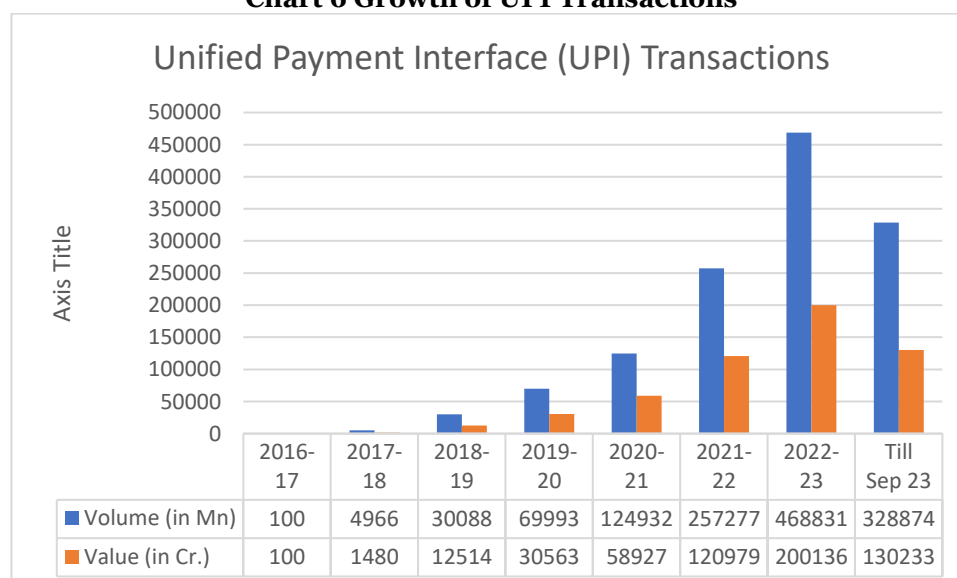
Chart 5 Growth of Banks Live on UPI



Source: <https://www.npci.org.in>

As per Chart- 5, Year 2016-17, taking as a base year No, of banks living on UPI was 1149 times in 2022-23. Moreover, till Sep 2023 (6 months), the number of banks living on UPI increased 702 times.

Chart 6 Growth of UPI Transactions



Source: <https://www.npci.org.in>

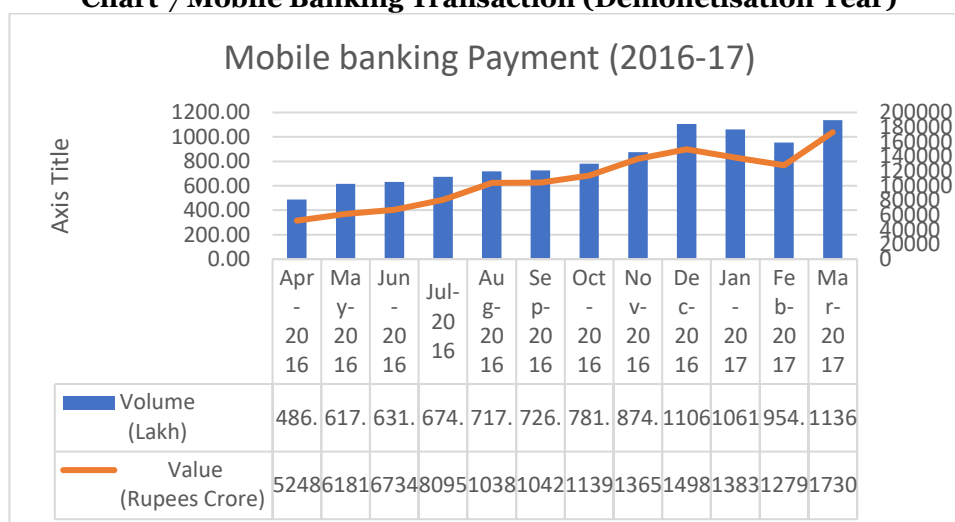
Unified Payment Interface (UPI) was launched by NPCI in 2016. In Chart-6, Taking 2016-17 as a base year (100), the number of transactions in Volume (No of Transactions) increased 468831 times, and in value (Transactions in Rs.) increased 200136 times in the year 2022-23. UPI is a simple and easy-to-use payment system. This makes it easier for people to use mobile banking services, even those who are not tech-savvy. UPI transactions are free or very low-cost. This makes mobile banking more affordable for people from low-income households. Over 700 million people in India have used Aadhaar, the world's most extensive biometric ID system, to access government services digitally, and The Unified Payment Interface (UPI),

India's digital payments platform, has processed over 730 crore transactions worth Rs 11.9 lakh crore in the financial year 2022-23. (RBI, 2023)

(2) Demonetisation

Demonetisation in India 2016-17 was a monetary reform introduced by the Indian government on 8 November 2016, in which all ₹500 and ₹1,000 banknotes of the Mahatma Gandhi Series were withdrawn from circulation and became invalid. Demonetization is primarily an economic determinant. It refers to a government's economic policy decision to remove a specific currency from circulation, often to curb black money, reduce corruption, and promote a transition towards digital and formal financial transactions. Demonetisation has had a positive impact on mobile banking in India. It has helped to increase awareness of mobile banking and its benefits. (Agarwal, 2020) It has also helped to accelerate the adoption of mobile banking by businesses and individuals. Demonetisation led to a significant increase in people using mobile banking for the first time. The cash shortage led to increased cashless transactions and digital wallet usage. People embraced mobile banking apps for online shopping, bill payments, peer-to-peer transfers, and even offline transactions at retail outlets. Demonetisation has led to an increase in the use of mobile banking for cashless transactions, such as payments at retail outlets and online shopping. As per RBI Data, Mobile banking transactions in 2016-17 increased 158170 times compared to the year 2011-12 and value wise 8178 times compared to 2011-12, and compared to 2015-16 due to demonetization in the year 2016-17, 224% growth in volume and 151% growth in value has been recorded as per Chart- 2 & 3. Overall, demonetization had a positive impact on mobile banking growth in India. It led to an increase in the demand for mobile banking services, a growth in the number of mobile banking users, and a growth in the volume and value of mobile banking transactions.

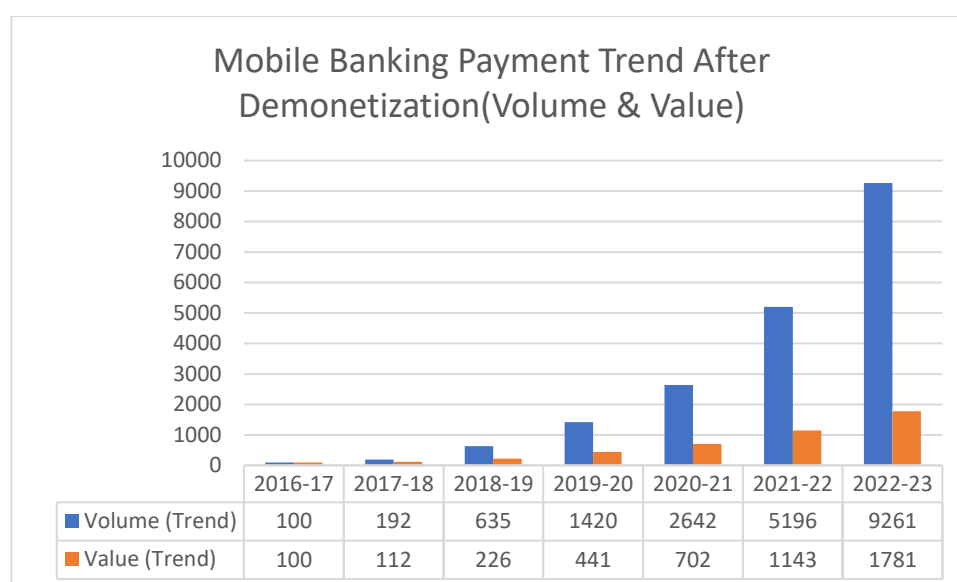
Chart 7 Mobile Banking Transaction (Demonetisation Year)



Source: <https://rbi.org.in/Scripts/Statistics.aspx>

On November 8, 2016, the Prime Minister of India, Narendra Modi, announced the demonetization of all ₹500 and ₹1,000 banknotes. As per Chart-7, Mobile banking transactions in Volume (No. of Transaction) have increased by 12% in one month, and till March 2017, increased by 31%. Mobile banking transactions in value (Transactions in Rs.) increased by 52% from Nov 17 to March 18 (5 Months) due to Demonetisations.

Chart 8 Mobile Banking Transactions Trend after Demonetisation



Source: <https://rbi.org.in/Scripts/Statistics.aspx>

As per Chart-8, Mobile banking transactions in volume (No. of Transactions) increased 9161 times compared to 2016-17 (base year) and increased in value (Transactions in Rs.) 1681 times compared to 2016-17 (base year). The volume of mobile banking transactions increased, indicating that more individuals were using it in 2022-23.

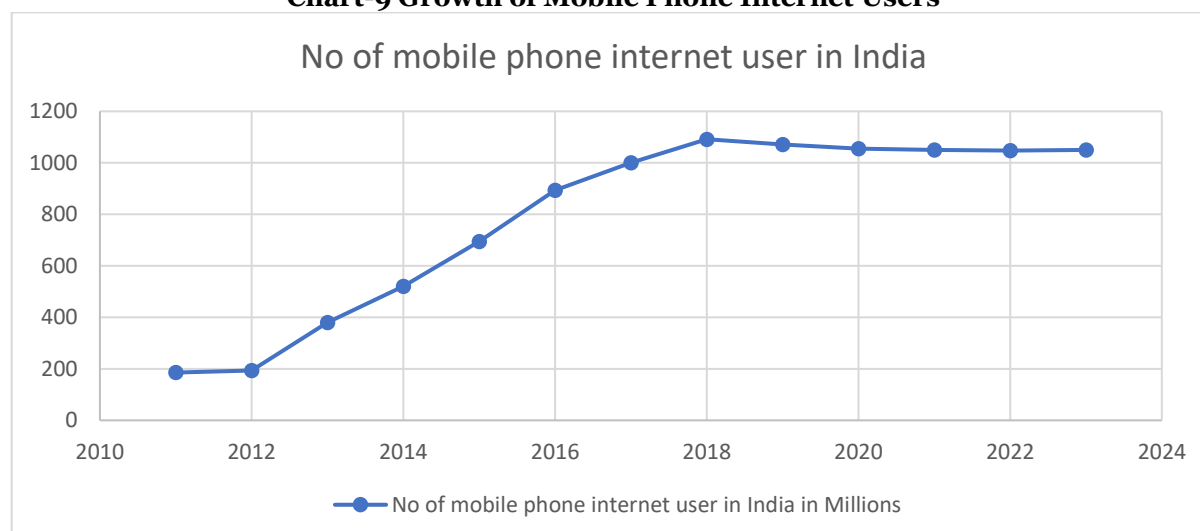
Q.3 How does Technology upgradation impact mobile banking Transactions in India?

Technology upgradation includes an increase in intelligent mobile phone internet users, fintech start-up growth, and growth of mobile wireless communication technology.

(1) Mobile Phone Internet user

According to Statista, there are 1.05 billion mobile phone internet users in India in 2023. This figure is expected to reach over 1.2 billion by 2050. Mobile internet has been a significant driver of digital growth in India, with over 73% of the country's web traffic coming from mobile phones in 2019. This is due to several factors, including the increasing affordability of smartphones and mobile internet plans, as well as the growing availability of mobile-first content and services. The growth of mobile internet in India has had a significant impact on the country's economy and society. It has helped to create new jobs and businesses and has made it easier for people to access essential services such as education, healthcare, and financial services. Mobile internet has also played a significant role in empowering people in India. It has given them a voice and a platform to connect with others and helped them learn and grow. As per the graph, FY 2017-18 had the highest mobile phone internet users in India. Compared to 2017-18, in 2018-19, 101% growth has been recorded in mobile banking volume, and 231% growth has been recorded in the value of mobile banking transactions.

Chart-9 Growth of Mobile Phone Internet Users



Sources: www.statista.com

As of June 2023, over 1.8 billion mobile subscribers have been registered in India, making it the second-largest mobile market in the world. India has over 1.4 billion internet users, the third-largest in the world. (Taylor, 2023) As per Chart 9, India had the highest mobile phone internet users in 2018.

(2) Financial Technology Start-ups Growth

The growth of fintech start-ups in India has had a significant impact on the Indian economy. Fintech start-ups are developing new and innovative mobile banking solutions, making mobile banking more convenient, accessible, and affordable for consumers.

(1) By 2023, there will be over 8,000 fintech start-ups in India, compared to 400 in 2010. (Rathore, 2023). Numerous reasons have contributed to this growth, such as the rise in smartphone and internet users, the government's encouragement of fintech innovation, and the expanding need for financial services among India's sizable and expanding middle class.

(2) The fin-tech start-up ecosystem in India has seen remarkable growth in the past few years, which makes it the fastest-growing and largest FinTech market. India surpassed the Asia-Pacific (APAC) countries in FinTech investments in early 2020 and then stretched its lead in FinTech investments, with \$7.8 billion raised in 2021 (Naveen Surya, 2022).

(3) Fintech startups are developing innovative new mobile banking features and services, such as mobile wallets, peer-to-peer payments, and micro-loans. These features and services are making mobile banking more convenient and valuable for people. Although the Indian fintech startup scene is still in its infancy, it has the potential to transform the country's financial services sector completely. Thanks to new ideas and rapidly developing technology, fintech has completely changed the financial services sector in India.

(4) The adoption of FinTech is accelerating in India. India has an adoption rate of 87%, which is far higher than the global average of 64%. By 2030, it is anticipated that the promising Indian FinTech sector will generate \$200 billion in revenue and \$1 trillion in AUM. (Naveen Surya, 2022)

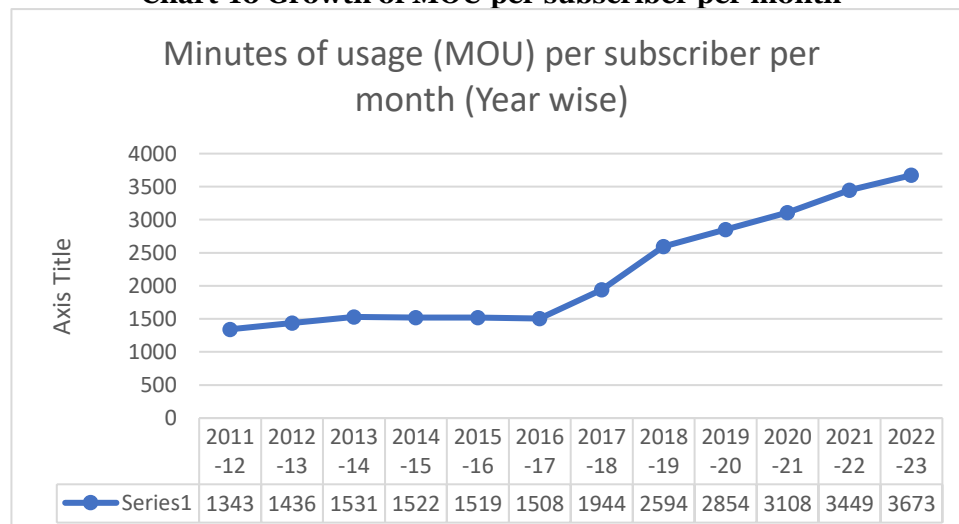
The Indian mobile banking industry is undergoing a significant transformation, and it is anticipated that fintech firms will continue to do so. FinTech developments are expected to enhance people's quality of life by providing valued and expressive technology-based financial services. FinTech businesses have emerged to address the neglected financial services thanks to a vibrant and expanding ecosystem, which will continue accelerating the expansion and penetration of FinTech in India.

(3) Growth of Mobile wireless communication

The growth of mobile networks has been driven by technological advancements, increased demand for mobile network services, increased use of smartphones, and Government support. The pace of technological advancement in mobile communications has been rapid. This has led to the development of new technologies that have made it possible to achieve higher speeds, capacity, and reliability. (Sharma, 2013). Mobile networks have also played a significant role in developing the digital economy (K. Krishna Prasad, 2015).

4G technology was launched in India in April 2012 by Bharti Airtel in Kolkata. Airtel was the first telecom operator in India to launch 4G services. Other telecom operators, such as Vodafone, Idea Cellular, and Reliance Jio, followed suit shortly after. The launch of 4G technology in India was a significant milestone in the country's telecommunications sector. It made India one of the first countries in the world to launch 4G services commercially. (Sharma, 2013) 4G technology has had a significant impact on mobile banking. It has made it possible for mobile banking apps to offer a broader range of services and features, making mobile banking more convenient and secure for users. (Zahid Latif, 2018)

Chart-10 Growth of MOU per subscriber per month



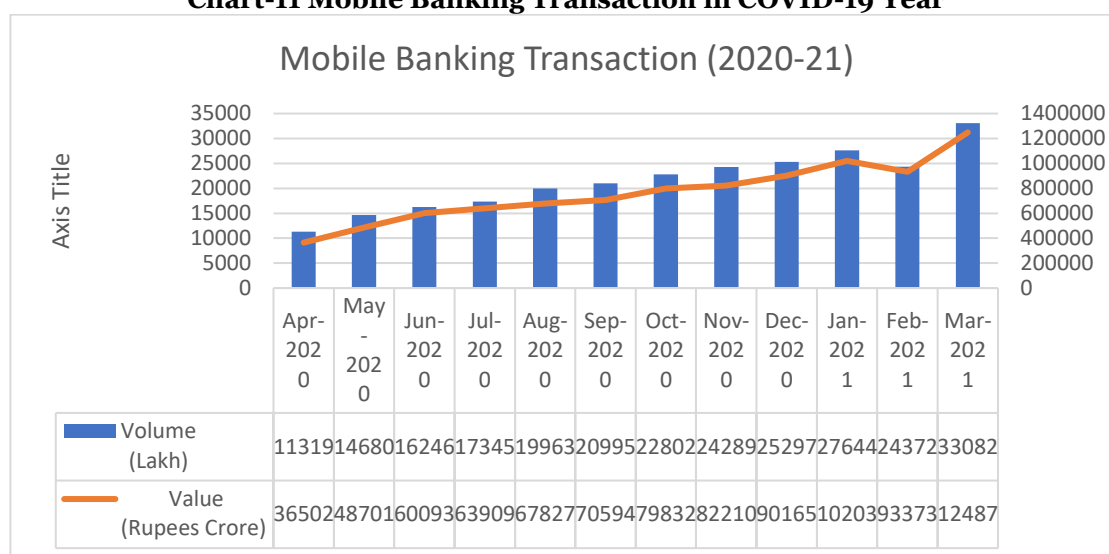
Source: <https://www.trai.gov.in/release-publication/reports/performance-indicators-reports>

As per the TRAI data in chart 10, Mobile wireless communication usage has increased tremendously in 2022-23 compared to 2011-12. It has almost increased 2.73 times in the 12 years. As per chart-, after demonetization (2016-17), 35% growth has been showed in the year 2017-18 due to an increase in mobile phone internet users.

Q.4 How did the COVID-19 pandemic impact mobile banking growth in India?

The COVID-19 pandemic has had a positive impact on mobile banking in India. It has helped to increase awareness of mobile banking and its benefits. It has also helped to accelerate the adoption of mobile banking by businesses and individuals. The COVID-19 pandemic has led to an increase in the use of mobile banking for cashless transactions, such as day-to-day payment. Banks and Fintech start-ups have expanded their mobile banking services to include a broader range of transactions, such as bill payments, money transfers, and investments. The COVID-19 pandemic has also led to several innovations in mobile banking. Many banks have launched features such as contactless payments, QR code payments, and peer-to-peer transfers. Banks are also increasingly using artificial intelligence (AI) and machine learning (ML) to improve the security and convenience of their mobile banking apps. In the financial year 2020-21, the volume of mobile banking transactions increased to 111115 times compared to 2011-12, and the value of mobile banking transactions increased to 218573 times compared to 2011-12. Compared to 2019-21, in the year 2020-21, 59% growth has been recorded in volume, and 86% growth has been recorded in the value of mobile banking transactions

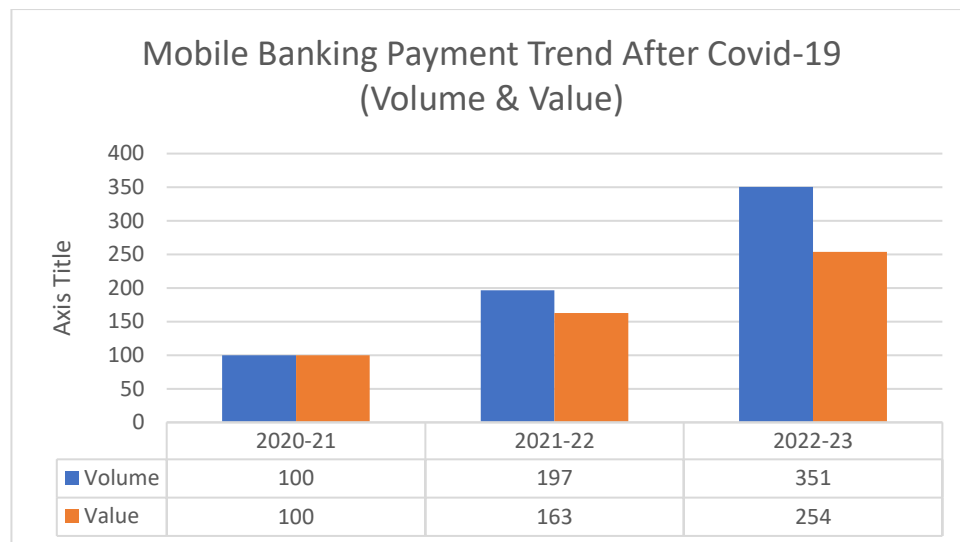
Chart-11 Mobile Banking Transaction in COVID-19 Year



Source: <https://rbi.org.in/Scripts/Statistics.aspx>

The Indian government imposed a nationwide lockdown to contain the spread of COVID-19 from 25 March 2020 to 14 April 2020. Chart-11 exhibited Mobile banking transactions in volume and value for 2020-21. From April 2020 to March 2021, Mobile banking transactions in volume (No. of Transactions) increased by 192%, and in value (Transactions in Rs.) increased by 242% from April 20 to March 21.

Chart-12 Mobile Banking Payment Trend After COVID-19



Source: <https://rbi.org.in/Scripts/Statistics.aspx>

Chart-12 represented the growth of mobile banking transactions in volume (No. of Transactions) 251 times and value (Transactions in Rs.) 154 times from 2020-21 to 2022-23 (3 Years).

Conclusion

In India, digital (online) payments have gradually increased over the past five years at a CAGR of 50% for transaction volume and 60% for transaction value. Only the Government of India's and the RBI's efforts to establish India as the leader in digital payments have made this feasible. The customer experience with speedier digital (online) payments is enhanced by new payer input and advanced payment systems. It gives users a unique opportunity to make it their go-to payment option. Transaction volume has grown due to this mindset, especially in urban and semi-urban regions. Because of the infrastructure in place and the general public's readiness to accept digital payment methods, the reach has also expanded into remote areas. It is a good thing that mobile banking is becoming more popular in India. It is contributing to the increased inclusivity and accessibility of financial services. Additionally contributing to the decrease in cash transactions and increased financial system transparency is mobile banking. To guarantee the continuous expansion of mobile banking in India, a few issues must be resolved.

One challenge is the lack of awareness about mobile banking among rural and low-income populations. Another challenge is the lack of internet connectivity in some parts of the country. The government and the fintech industry need to work together to address these challenges and promote the growth of mobile banking in India. This will help to make India a more financially inclusive and developed economy. Mobile banking is also helping to boost economic growth. By making it easier for people to make payments and transfer money, mobile banking is helping to promote trade and commerce. Additionally, mobile banking is helping to create new jobs in the fintech sector. Overall, the growth of mobile banking in India is a positive development that has a transformative impact on the country's economy and society.

Limitations of the study

The mobile banking landscape constantly evolves, and new technologies and trends can emerge rapidly. This can make it challenging to keep up with the latest changes and accurately predict future growth. Economic and Social conditions can have a significant impact on mobile banking growth. During a recession, consumers may be more likely to reduce spending and use fewer mobile banking services. Despite these limitations, the study on mobile banking growth can provide valuable insights into the trends and drivers of this growing market. It can also help banks and other financial institutions to develop strategies to capitalize on these trends and meet the needs of their mobile banking customers.

Future scope of the study

The future scope of the study on mobile banking growth is vast. As the mobile banking market continues to grow and evolve, many new and emerging research areas could be explored. The rise of artificial intelligence (AI) and machine learning (ML) is impacting how banks deliver mobile banking services more effectively. The growth of blockchain technology is impacting the future of mobile payment systems. There is also a need for more longitudinal studies on mobile banking growth.

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