A Research Study on Awareness & Progress of Electronic Banking (E- banking) In India

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ABSTRACT: The Indian banking sector is crucial to the economic growth of any nation, and in recent years, India's banking industry has experienced substantial transformation. This evolution has been largely driven by regulatory reforms and the rapid adoption of digital technologies. These developments have compelled banks to improve service delivery and adapt to changing customer expectations. Although e-banking has seen widespread adoption across India, it is still essential to evaluate how effectively banks are delivering these services and whether they align with customer needs. The study used a mixed-method approach, collecting quantitative/Numerical data on e-banking usage with qualitative insights from customers of leading Indian banks. The findings reveal a marked increase in e-banking usage, spurred by rising smartphone penetration and initiatives like Digital India. However, they also underscore the need for banks to invest in secure, user-friendly digital platforms while addressing challenges related to the digital divide. For e-banking to contribute to inclusive growth, collaboration between policymakers and banking institutions is vital.

Keywords: ATMs, ECS, National Electronic Funds Transfer (NEFT), RTGS, CAGR

I. INTRODUCTIONS

In recent times, banks all around the world have greatly benefited from using advanced technology. This has led to many advantages, such as making banking processes more efficient, creating new and innovative products, speeding up transactions, easily transferring money, providing real-time information, and managing risks effectively. Technology has also made banking in India much better. Indian banks are now using advanced technology to improve their services and compete in the modern business world. This includes using computers and new tools to make banking processes smoother and coming up with new ideas for how to do things better. So, basically, technology has brought big changes to the banking sector, making it faster and more efficient, especially in India.

The swift progress of digital technology has revolutionized the global banking industry, and India is no exception. Electronic banking (e-banking) has become an essential part of contemporary financial services, offering customers the convenience of conducting transactions through online platforms, mobile apps, and other digital channels. In India, the adoption of e-banking has been driven by growing internet accessibility, the widespread use of smartphones, government-led initiatives like Digital India, and the increasing popularity of cashless payment systems such as the Unified Payments Interface (UPI) and mobile wallets.

Despite significant advancements, the awareness and adoption of e-banking services remain uneven across different demographics and regions in India. Urban populations have largely embraced digital banking; however, rural areas continue to face obstacles such as limited digital literacy, inadequate infrastructure, and concerns about cyber security. Additionally, issues like online fraud, data security risks, and resistance to change further impede the widespread adoption of e-banking across the country.

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This study aims to assess the level of awareness and development of e-banking in India, examining major trends, challenges, and emerging opportunities. By analyzing consumer behavior, technological innovations, and policy initiatives, the research seeks to offer valuable insights into the future trajectory and long-term sustainability of digital banking in the Indian context.

In the last few years, something big has happened in the world's economy. It's called the "Internet-based Economy," and it's a major change, kind of like how the Industrial Revolution transformed things a long time ago. This new economy is all about using the internet for business. Banks have noticed this and started to put their money into this new internet economy. Banks are super important for a country's money system. When a country wants to grow and get better, it needs to put money into lots of different things, like building stuff and starting new projects. Banks help with this by collecting small amounts of money from regular people and then using that money to invest in these projects. Banks also do other important stuff for their customers, like helping them with their money and financial needs. All of this helps make a country's economy stronger and better. So, banks play a big part in making a country's economy grow.

The internet has changed how we do banking. Now, we can do many banking things online, like paying bills, sending money, buying and selling stocks, and even shopping. Lots of people are using the internet to do their banking stuff.

Internet banking enables both banks and customers to access account information, conduct transactions, and explore new financial products and services through online platforms. Today, many banks provide convenient features such as online savings account opening, which has become increasingly popular among users due to its ease and accessibility.

II. LITERATURE REVIEW

- Avasthi & Sharma (2000-01) they found that Advanced and New technology is going to make big changes in how banks work. Technology has already changed how banks serve customers in regular banking, and it's also affecting how banks do business in the financial markets.
- B. Janki (2002) their research discovered that technology is going to bring significant changes to how banks operate. Technology has already altered the way banks help regular customers with their banking needs, and it's also impacting how banks conduct their business in the financial markets.
- Suresh (2008) the new e-banking technology has given banks some exciting chances to change how they offer financial products, make money, provide services, and advertise. This study aimed to compare old-school banking with e-banking to see what's different.
- Uppal R K (2010) in his research, it was found that ATMs work really well, especially in public sector banks. On the other hand, mobile banking isn't as popular in these banks. E-Banks have the most customers using mobile banking, and this actually helps them make more money and be more efficient per employee.
- Mittal, R.K. & Dhingra, S. (2007) they conducted an analysis of the impact of technology within the banking sector, specifically focusing on the investment landscape for technological advancements in India.
- Mishra (2011) Here's a simpler version of the advice to protect your online banking:. Don't give out your password in response to SMS, calls, or emails. Avoid clicking on links in messages from your bank. Online banking is convenient, but be cautious to stay safe.
- (RBI Report, 2021) The Indian banking sector has transitioned significantly from traditional branch-based services to digital banking platforms. As noted by Sharma and Singh (2020), the advent of internet banking, mobile banking, and UPI has transformed financial transactions, making them more efficient and widely accessible. Key initiatives programs like Digital India, Jan Dhan Yojana, and Aadhaar-linked banking have been instrumental in driving the adoption and expansion of digital banking across the country.
- (Modi & Modi, 2021)(Ashwin, 2021) The study is on the profitability and liquidity of Gujarat's power distribution companies, the analytical approach using ratio analysis and t-tests over a ten-year period offers a useful framework for assessing financial health in sectors like electronic banking. Applying similar methodologies to e-banking in India can help evaluate its financial progress and institutional awareness over time.

- Dhananjay B and Suresh Chandra B in 2015 published that. In the past few years, online payments have improved a lot. The creation of NCPI (National Payments Corporation of India) played a big role in this. The use of electronic payments increased from one percent to three percent.

III. OBJECTIVE OF RESEARCH

- To recognize the different online banking services and products offered by banks in India?
- To analyze the current development in Online Banking Services.
- To analyze the use and Impact technology in banking sector.
- To examine and understand how much the Indian banking industry has advanced in using technology

IV. RESEARCH METHADOLOGY

This Research is based on information that already exists, which we call secondary data. It's a type of study that aims to analyse and explore a topic. In this case, the topic is the Indian banking sector. We gathered this information from different sources like journals, research articles, magazines, websites, and data published by organizations like the RBI (Reserve Bank of India) and the Indian Banks' Association. We also looked at various research studies that are available online related to this topic. The main things we're looking at in this study are Plastic Cards and use of different electronic payment methods for retail transactions. Electronic payment methods include Electronic Clearing Services (ECS) for all the financial transactions.

4.1 Research Design

The study uses a descriptive and analytical research design. Descriptive research helps in understanding the current status and user perception of e-banking services, while analytical research evaluates the relationship between technological adoptions.

4.2 Data Collection Methods

Data was obtained from published reports, journals, RBI bulletins, bank annual reports, and government publications related to digital banking and fintech in India.

4.3 Limitations of the Study

The dynamic nature of digital banking may cause rapid changes that this study does not capture in real-time.

4.4 Data Analysis Techniques

The collected data were analyzed using different quantitative and data analysis technique.

V. INTRODUCTIO TO E-BANKING

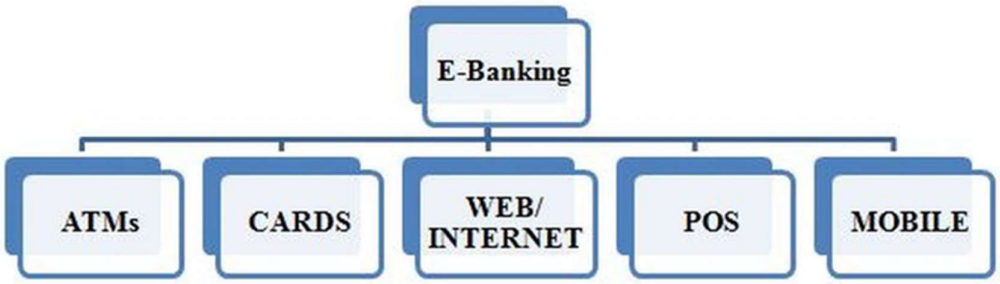
E-banking means using computers, Smartphone’s, ATMs, or phones to do banking stuff without going to a bank in person. It's like doing your banking online or using a machine instead of talking to a bank teller. You can check your account, send money, and get info about banking stuff through the internet or other devices.

5.1. Evolution of E-banking in India.

In 1991, when India allowed more foreign banks to operate, they introduced new technology in the banking sector. This made banking products more competitive. To stand out, banks needed to offer unique range of new products and services. In 1996 ICICI Bank started offering online banking. but it took a few years for people to start using it regularly. This

happened in 1999 because internet charges were lower, more people had personal computers, and technology became more popular.

Indian commercial banks are facing tough competition, especially public sector banks. To deal with this, they have taken various steps, and one of them is e-banking. E-banking means using electronic methods for banking services. All the banks are ahead in using e-banking. Indian banks provide their customers with different electronic banking products and services.



VI. ANALYSE THE GROWTH OF ELECTRONIC PRODUCTS IN INDIA

- **Automatic Teller Machine (ATM)**

It is very common and convenient machine in India. It lets people take out their money anytime, day or night, all week long. You can use it if you have a special ATM card. With an ATM, you can do regular banking stuff without talking to a human bank teller. Apart from taking out cash, you can also use ATMs to pay your bills, move money between your bank accounts, put checks and cash into your account, and check how much money you have in your account.

ATMs are machines where people get cash. Normally, about 125 times a day, someone uses an ATM to get money. Even though ATMs aren't considered digital transactions by the committee, they're still vital because they help people get cash easily.

TABLE-I:
TOTAL NUMBER OF ATMS

Year	Total number of ATMs	ATM Density (per 100,000 adults)
2020	200,000	21.5
2021	210,000	21.44
2022	249,000	Not specified
2023	219,000	Not specified
2024	215,000	Not specified

Source: Reserve Bank of India

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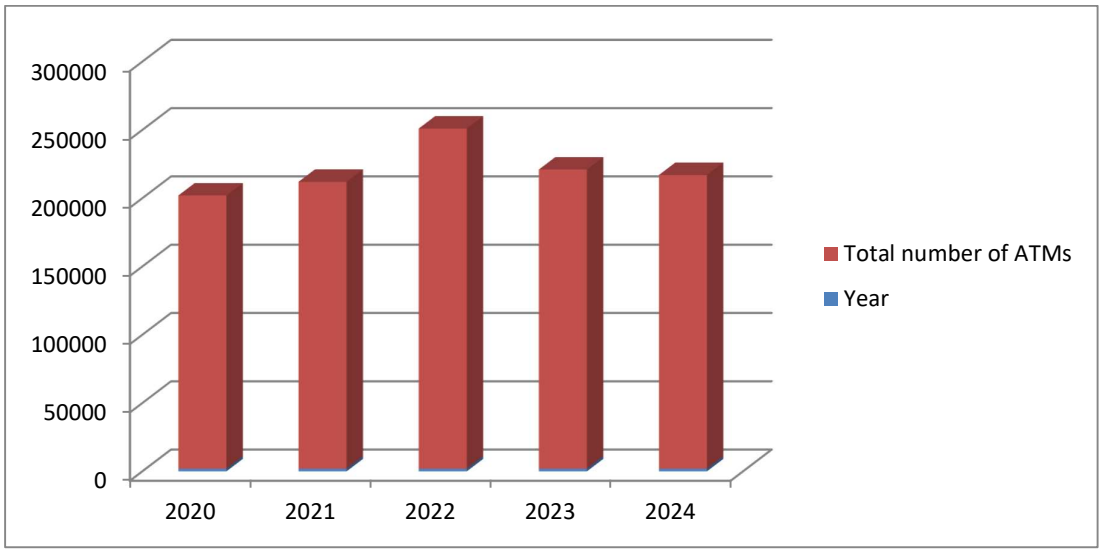

Fig.1 Total Number of ATMs

The growth and evolution of Automated Teller Machines (ATMs) in India between 2020 and 2024 reflect a dynamic shift in banking preferences and technology adoption. Initially, the ATM network saw moderate expansion, peaking around 2022 with over 249,000 machines across the country. This growth was driven by the continued need for cash-based services, especially in semi-urban and rural areas where digital penetration was still developing.

However, from 2022 onwards, there was a noticeable decline in the number of ATMs. This was largely attributed to the rapid uses of digital payment platforms, particularly the (UPI),M wallets, and I-banking. Consumers increasingly preferred these digital channels due to their speed, convenience, and 24/7 availability, leading to reduced dependence on physical cash withdrawals and, consequently, ATMs.

Furthermore, structural changes within the banking sector, such as public sector bank mergers and efforts to optimize operational costs, also contributed to a consolidation of ATM networks. Many off-site ATMs—especially those with low footfall—were shut down as they were no longer financially viable.

TABLE-II:
ISSUANCE DEBIT AND CREDIT CARDS IN INDIA

Year	Debit Cards in Circulation (in millions)	Credit Cards in Circulation (in millions)
2020	850	60
2021	900	70
2022	940	85
2023	975	98
2024	990.9	108

(Reserve Bank of India)

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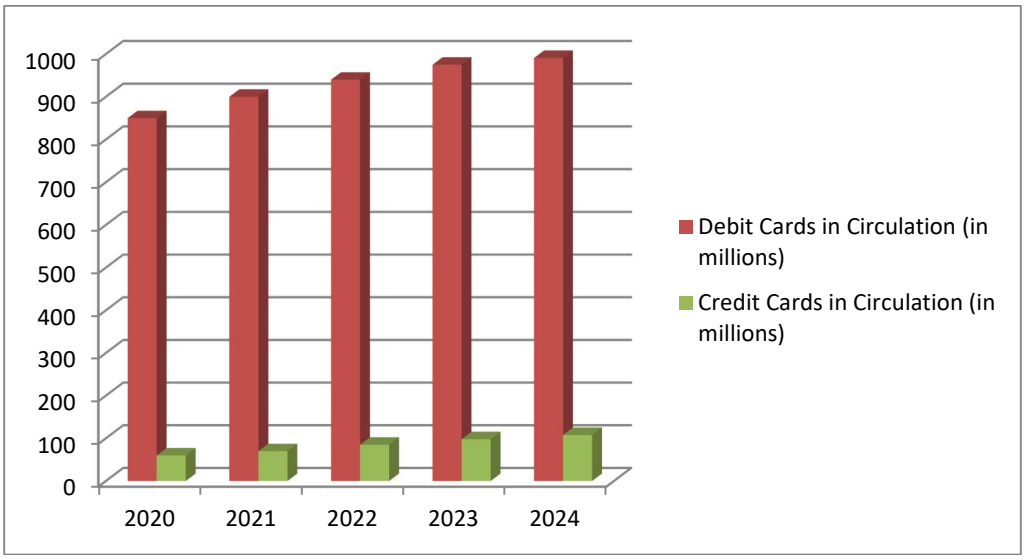

Fig.2 Total Number of Debit cards and Credit cards

The period from 2020 to 2024 saw significant evolution in the usage and issuance of both debit and credit cards in India, reflecting broader changes in consumer behaviour, financial inclusion efforts, and digital payment adoption.

Debit Cards: Steady and Stable Growth

The number of debit cards in circulation grew steadily, from approximately 805 million in 2019 to nearly 991 million by the end of 2024. This consistent rise was primarily driven by the government's push toward financial inclusion, especially through schemes like the Pradhan Mantri Jan-Dhan Yojana (PMJDY). The issuance of RuPay debit cards to newly opened bank accounts contributed significantly to the expansion, ensuring that a large portion of the rural and low-income population could access basic banking services.

Debit cards have remained the default financial tool for most Indians, especially for ATM withdrawals and point-of-sale purchases. However, their growth rate has been more moderate compared to credit cards due to the limited scope of features and the availability of newer digital payment options like UPI.

Credit Cards: Rapid and Dynamic Expansion

Credit cards, on the other hand, saw exponential growth, more than doubling from 55.3 million in 2019 to approximately 108 million in 2024. This expansion was fueled by rising disposable incomes, urbanization, and the increasing popularity of online shopping and digital finance.

The post-pandemic period acted as a catalyst for digital financial behavior, with more consumers opting for credit cards to manage cash flows, earn rewards, and access exclusive benefits. Major Banks like HDFC Bank, SBI Card, ICICI Bank, and Axis Bank led this growth, offering a wide range of credit products tailored to different income groups and lifestyles.

Additionally, credit card spending rose significantly, reaching ₹18.26 trillion in FY 2023–24—a 27% increase over the previous year. This indicates not just a rise in card adoption, but also higher utilization, reflecting growing consumer confidence and changing spending patterns.

Overall Market Trends

- Debit cards dominate in terms of volume due to inclusion-focused government initiatives.

- Credit cards are catching up quickly, especially in urban and semi-urban areas, due to enhanced digital awareness, ease of access, and aspirational lifestyles.
- The credit card market is projected to reach 200 million by 2029, suggesting continued robust growth driven by fin tech innovation and evolving consumer preferences.

Credit card and Debit Card Payments:

TABLE-III:
CARD PAYMENTS

Fiscal Year	**Debit Card Transactions** *Volume* (in billion)	**Credit Card Transactions** *Volume* (in billion)
2020	4.8	8.0
2021	3.8 (-20.8%)	7.5 (-6.3%)
2022	4.5 (+18.4%)	9.0 (+20.0%)
2023	5.0 (+11.1%)	10.0 (+11.1%)
2024	5.5 (+10.0%)	11.5 (+15.0%)

(*Sources: Reserve bank of India*)

India's card payment ecosystem has evolved significantly over the past five years, reflecting the country's digital transformation, consumer behavior changes, and financial inclusion efforts. The data shows a clear trend: while both debit and credit card usage have increased post-pandemic, credit cards are outpacing debit cards in transaction value growth, indicating a shift in how Indians prefer to spend.

In FY 2019–20, debit card usage was dominant, with 4.8 billion transactions amounting to ₹8.0 trillion. The COVID-19 pandemic led to a notable decline in FY 2020–21, with volume falling to 3.8 billion and value to ₹7.5 trillion, due to lockdowns and reduced in-store shopping. From FY 2021–22 onward, debit card usage steadily increased, reaching 5.5 billion transactions worth ₹11.5 trillion by FY 2023–24. This growth was driven by: Rising financial inclusion through Jan Dhan accounts. More people shifting from cash to cards for day-to-day expenses. Enhanced availability of PoS terminals and online payment support.

Starting at 2.0 billion transactions worth ₹7.3 trillion in FY 2019–20, credit card usage dipped slightly during the pandemic. From FY 2021–22, credit card growth accelerated rapidly: Transaction value increased by ~35% annually, reaching ₹13.7 trillion in FY 2023–24. Volume also raised significantly, from 2.2 billion to 3.5 billion transactions in the same period. Key factors behind this surge: Increased online shopping and digital payments adoption. Reward programs and EMI options driving card-based purchases. Expansion of credit card offerings by major banks and fintechs

TABLE-IV:
USE OF DEBIT AND CREDIT CARDS – POS & E-COMMERCE (INDIA, 2022–2023)

Transaction Type	**Card Type**	**Change in Volume (YoY)**	**Change in Value (YoY)**
Point of Sale (PoS)	Debit Card	-11.9%	Not specified
	Credit Card	+30.5%	Not specified
E-Commerce	Debit Card	-16.4%	-5.9%
	Credit Card	+11.3%	+16.1%

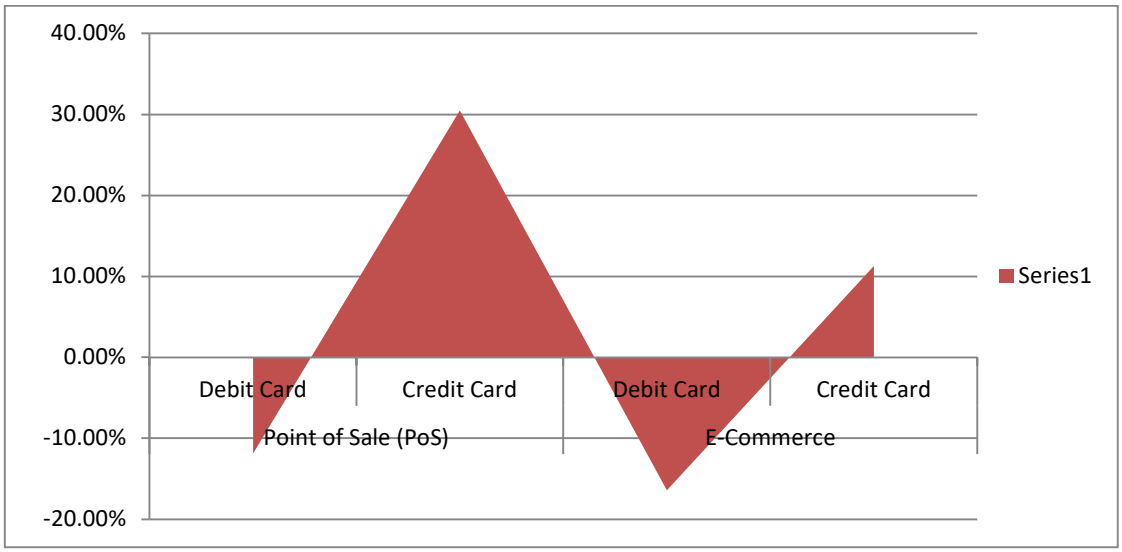

Fig.3 Use of Cards at Pos & E-commerce Sources: Reserve bank of India

The data from 2022 to 2023 highlights a major shift in consumer behavior in India when it comes to card-based payments, both at physical retail outlets (Point of Sale or PoS) and on e-commerce platforms. This shift is primarily marked by a decline in debit card usage and a strong rise in credit card transactions, signaling a move toward more sophisticated, reward-driven, and credit-based digital payment methods.

At PoS Terminals:

Debit card transactions at PoS dropped by 11.9% in volume in the first half of 2023 compared to the same period in 2022.

Credit card usage increased by 30.5% in volume in the first half of 2023 compared to 2022. This suggests growing consumer trust in using credit cards for physical purchases, especially among the urban and digitally literate population. Many credit cards also offer instant discounts, cash back, or EMI options at PoS terminals. This suggests growing consumer trust in using credit cards for physical purchases, especially among the urban and digitally literate population. Many credit cards also offer instant discounts, cash back, or EMI options at PoS terminals.

In E-Commerce:

The decline is even more notable in online shopping, where debit card transaction volume dropped by 16.4%, and value declined by 5.9% year-on-year in September 2023.

This decline reflects a clear consumer preference for other payment methods like UPI, Buy-Now-Pay-Later (BNPL), and credit cards, which offer additional perks and convenience.

Online credit card usage grew by 11.3% in transaction volume, with a 16.1% increase in transaction value in September 2023 compared to the previous year.

This rise aligns with increasing consumer preference for credit cards in online shopping for larger-ticket items, given the availability of interest-free EMIs, reward points, and fraud protection.

RTGS:

The Real Time Gross Settlement (RTGS) system facilitates quick and secure fund transfers between bank accounts. Since transactions are processed in real time and settled individually, the transferred amount reaches the recipient instantly—this is why it is termed "gross settlement." RTGS is available for interbank transfers from 8:00 a.m. to 4:30 p.m. on weekdays and working Saturdays. The system is overseen and operated by the Reserve Bank of India (RBI).

TABLE-V:

Fiscal Year	Volume (in lakh transactions)	Value (₹ crore)
2020-21	1,592	1,05,59,985
2021-22	2,078	1,28,65,752
2022-23	2,426	1,49,94,629

Source; Reserve bank of India

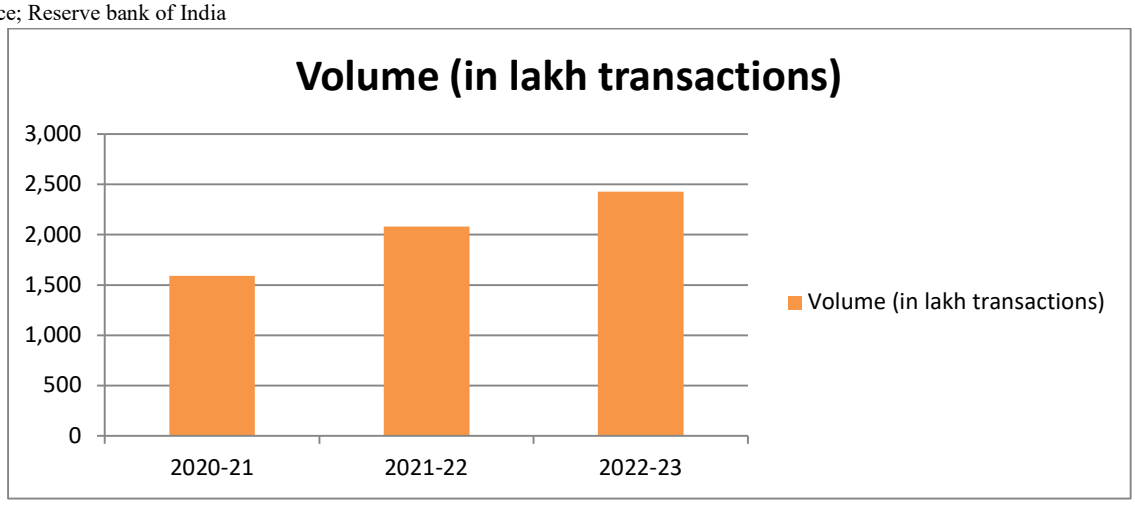

Fig.4 Total Number of RTGS

The number of RTGS transactions increased from 1,592 lakh in 2020–21 to 2,426 lakh in 2022–23. This represents a cumulative growth of over 52% in just two years. The growth suggests that more businesses, institutions, and banks are using RTGS to transfer large amounts in real-time, likely due to its speed, reliability, and real-time confirmation.

The total value of RTGS transactions rose from ₹105.6 lakh crore in 2020–21 to ₹149.9 lakh crore in 2022–23. That's an increase of approximately 42% over two years. This rise reflects a stronger macroeconomic environment, with higher business volumes, increased investment activity, and the government's initiative for digital India.

UPI:

Unified Payments Interface (UPI) is a real-time payment system introduced in 2016 by the National Payments Corporation of India (NPCI), under the supervision of the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA). It allows users to instantly transfer funds between bank accounts using a mobile phone via any UPI-enabled application.

TABLE VI:
GROWTH OF UPI IN INDIA

YEAR	Transaction (in crore)	Value (₹ Lakh Crore)
2016–17	1.0	0.69
2017–18	91.5	1.09
2018–19	535.5	8.77
2022–23	8,375	139.00
2023–24	11,660+	180.00+

Source; Reserve bank of India

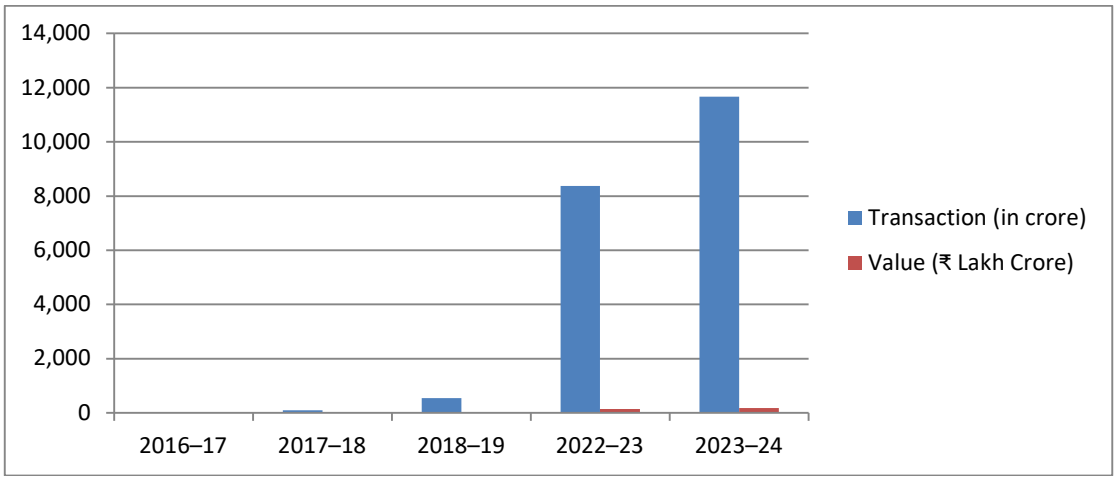

Fig. 5 Total Number of UPI Transaction

The Unified Payments Interface (UPI) has revolutionized India's digital payments ecosystem by offering a fast, secure, and real-time platform for conducting financial transactions. Introduced in 2016 by the National Payments Corporation of India (NPCI), UPI has experienced exponential growth in recent years. Transaction volumes surged from 1,252 crore in FY 2019–20 to over 11,660 crore in FY 2023–24, while the total transaction value skyrocketed from ₹21.31 lakh crore to more than ₹180 lakh crore. This phenomenal growth highlights UPI's broad acceptance across various segments of the population, including urban professionals, online shoppers, small business owners, and rural users.

The success of UPI can be attributed to several factors, including its simplicity, cost-effectiveness (most transactions are free), and government initiatives promoting cashless payments under the Digital India program. The ease of transferring money using just a mobile number or UPI ID, without the need for account details or IFSC codes, has significantly enhanced user convenience. Additionally, UPI's interoperability across multiple banks and apps such as Google Pay, PhonePe, Paytm, and BHIM has made it a go-to payment method for everyday use. The system also supports merchant payments, bill payments, subscription mandates, and QR-based transactions, expanding its utility far beyond person-to-person transfers.

UPI has not only outpaced traditional payment methods like debit cards, credit cards, NEFT, and IMPS in terms of transaction volume but has also promoted financial inclusion by empowering millions of unbanked and underbanked citizens to participate in the digital economy. Its expansion to international markets further indicates its growing recognition as a model for modern payment systems. As India moves towards a less-cash economy, UPI continues to be the cornerstone of digital transformation in the financial sector, driving transparency, efficiency, and innovation in transactions.

NEFT

The National Electronic Funds Transfer (NEFT) system enables individuals to transfer money from one bank account to another across India, regardless of location. It functions through a network of participating banks and operates in scheduled batches throughout the day on weekdays and working Saturdays. Managed by the Reserve Bank of India (RBI), NEFT provides a reliable and efficient way to carry out interbank transfers during designated time slots.

In 2019, NEFT recorded around 262 crore transactions amounting to ₹232.97 lakh crore, and by 2024, the volume jumped to nearly 927 crore transactions, with a value exceeding ₹432 lakh crore. This growth indicates a consistent increase in digital adoption, especially among businesses and institutions that require scheduled or large-value transactions. NEFT's transition to a 24x7x365 service since December 2019 also played a crucial role in boosting its usage, as it eliminated the time constraints associated with traditional banking hours.

NEFT continues to be favored for its structured settlement batches, security, and suitability for mid to high-value transactions that are not time-sensitive. Compared to real-time systems like UPI or RTGS, NEFT offers a balance of

convenience and formality, making it ideal for salary disbursements, vendor payments, utility bills, and personal fund transfers. Furthermore, its integration with internet and mobile banking platforms has made it more accessible to users from all age groups and regions.

In summary, while UPI dominates small-value retail payments, NEFT remains a pillar of India's digital payment infrastructure for formal, scheduled, and high-value transactions. Its continued growth underlines the ongoing digital shift in the country's financial habits, especially in the organized sector and enterprise landscape.

NEFT usage has been increasing steadily, with Average annual growth rate of 26% over the past 4 years! Even though there aren't many transactions, they involve a lot of money. On average, the size of these transactions has Difference between Rs 60 Thousand and 1 Lakh over the Last 5 years.

PAPER MONEY (CHEQUE)

India has one of the best clearing house infrastructures, enabling markets and businesses across the country to clear payments and settle them within two days. It is a preferred mode of transaction.
Cheques, once the backbone of formal financial transactions in India, have witnessed a significant decline in usage over the past decade due to the rise of digital payment methods. As a traditional instrument of payment, cheques were widely used for everything—from salary disbursements and business payments to personal transactions and bill settlements. However, with the rapid adoption of real-time digital channels such as NEFT, RTGS, and especially UPI, the use of paper-based payments like cheques has reduced considerably. Despite this decline, cheques still hold a place in the Indian financial system, particularly among older generations, rural users, and formal business setups that prefer or require written records and documentation. Cheques are often considered safer for high-value or scheduled payments, and are still mandated in certain government and institutional transactions, such as EMI payments, insurance premiums, or security deposits.

The Reserve Bank of India and commercial banks have also modernized cheque handling through Cheque Truncation System (CTS), which allows for faster and more secure clearance by digitizing the physical cheque. However, in comparison to digital alternatives, cheques are slower, require manual handling, and have a higher chance of rejection or fraud. Statistical trends show that both the volume and value of cheque transactions have steadily declined year-on-year, as individuals and businesses increasingly favor electronic payment methods for their speed, convenience, and 24x7 availability. This trend reflects a broader shift in India's economic behavior—from paper-based to digital banking—fueled by mobile penetration, financial inclusion initiatives, and trust in secure payment gateways. In conclusion, while cheques are still in use, especially for formal and legacy transactions, their relevance in India's modern payment landscape is diminishing. The shift toward cashless and paperless transactions is evident, and cheque usage is likely to continue its downward trajectory in the years ahead.

Analysis of Different Payment systems

There are several types of payment systems available today, each with its own strengths and weaknesses. **Cash payments** are the most traditional method, offering instant settlement without any transaction fees. They are simple and universally accepted in physical settings. However, cash is not suitable for online transactions and carries a higher risk of loss or theft, making it less ideal in the digital age.

TABLE VII:

Payment System	Transaction Volume	Transaction Value	Share in Digital Payments Volume	Year-on-Year Growth
UPI (Unified Payments	131 billion transactions	₹199.89 lakh crore	80%	Tenfold increase over four years

Interface)				
NEFT (National Electronic Funds Transfer)	Data not specified	₹1,199.43 lakh crore	49.4% of total retail payments value	Data not specified
IMPS (Immediate Payment Service)	5.999 billion transactions	₹64.93 lakh crore	Data not specified	9% increase in volume

Source: Reserve Bank of India

The Reserve Bank of India (RBI) collects and shares data about transactions made through payment systems, showing how many transactions happen and how much money is involved. They also calculate a helpful metric called Average Transaction Size (ATS) to help us understand these systems better. The chart below displays the percentage of different Payment systems based on number of transaction they handled.
The charts clearly show that RTGS, NEFT, and paper (cheques) dominate in terms of transaction value, while other payment modes lead in volume, indicating they are used for smaller transactions.

VI. CONCLUSION

Virtual banking—also referred to as electronic banking or e-banking—has become an integral component of the contemporary financial ecosystem. Driven by rapid technological advancements, banks are now equipped to deliver a comprehensive suite of services through digital platforms, offering customers greater convenience, accessibility, and efficiency than ever before. This digital shift has transformed the traditional banking experience, enabling individuals to carry out virtually all financial transactions without visiting a physical branch. From opening new accounts and checking balances to transferring funds, applying for loans, and paying utility bills, customers can now manage their finances entirely through online portals or mobile banking applications. These platforms are designed to be user-friendly, secure, and available 24/7, significantly enhancing the overall customer experience. One of the most notable impacts of virtual banking has been the reduction in dependence on physical cash. As digital transactions become the norm, banks have been able to streamline operations, reduce overhead costs, and improve operational efficiency. This has also contributed to broader financial inclusion, allowing people in remote or underserved areas to access essential banking services. The growth of virtual banking has been further fuelled by the widespread issuance of debit and credit cards and the rapid expansion of digital payment infrastructure. Systems such as the Unified Payments Interface (UPI), Immediate Payment Service (IMPS), and National Electronic Funds Transfer (NEFT) have played a key role in facilitating secure, real-time electronic transfers. As a result, there has been a sharp increasing the volume and value of electronic transactions across the country.

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