

Digital Transformation in Indian Banking: Innovations, Performance, and Future Prospects – An Analytical Review

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Abstract: The bank is the mainstay of the financial economy. It mobilises the public's financial resources and grants various types of credit to account holders, industries, and entrepreneurs, among others. The banking sector has experienced tremendous growth in recent times and is now competing with the broader financial services industry. The banking sector in India was established in the early 18th century. After independence, the first and second nationalisations of the bank were part of the country's innovation. In the post-reform period, the banking sector has undergone numerous changes, including the introduction of new technologies, methods, and innovations. These innovations have enabled the banking sector to offer services such as credit cards, debit cards, ATMs, and internet banking. Digital banking refers to the transfer of money through electronic devices, such as computers and mobile phones. The present study has the following objectives: i) to examine the digital banking innovations in the Indian banking sector; ii) to analyse the performance of digital banking innovations in India. The present study is based on secondary data. The required data have been collected from various sources, including the Ministry of Finance, Reserve Bank of India, National Payment Corporation of India, NITI Aayog, as well as working papers and discussion papers. Innovation in digital banking is an urgent need of the hour for the Indian banking sector.

Keywords: Digital Banking; Credit Card; Digital Transactions; Debit Cards; Internet Banking; Reserve Bank of India; National Payment Corporation of India; Financial Services; Banking Sector.

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1. Introduction

The Indian banking system has a long and rich history that goes back to the 18th century, when the Bank of Hindustan was founded in 1770. The banking system in India has undergone significant changes over the years, playing a crucial role in the country's economic growth. The Banking Regulation Act of 1949 was a significant step forward, as it established a legal framework and regulatory oversight that emphasised the importance of banks to India's economic growth. The nationalisation of banks was one of the most important events in the history of Indian banking. On April 1, 1949, the government took over the banking industry, allowing it to utilise people's savings and lend money to various parts of the economy. This step aimed

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to make the financial system more transparent by allocating funds to key areas, thereby helping the economy grow in a balanced manner. At first, the Indian banking system relied heavily on manual labour, with people controlling most of its functions.

Due to this reliance on physical labour, banking was slow and cumbersome, which limited the sector's reach and effectiveness. The government made its first significant change to the banking sector in 1969 when it took over 14 major commercial banks. In 1981, six more banks were placed under government control, marking the next wave of nationalisation. The goal of these changes was to make banking services accessible to people in rural and underserved areas, promoting financial inclusion. The banking industry underwent significant changes over the next few decades, particularly after the 1991 policies that opened up the economy. Following the economic reforms of 1991, the Indian banking sector entered a new era of modernisation and the adoption of new technologies. These changes enabled private banks and foreign companies to enter the market, thereby increasing competition and fostering new ideas. The use of computers and digital tools has marked a significant shift in how banks operate. Banks began to automate their operations, enhance customer service, and introduce new products and services. Using technology not only made operations run more smoothly, but it also made banking services accessible to a wider range of people across the country.

Modern banking offers a range of services, including internet banking, mobile banking, automated teller machines (ATMs), and electronic fund transfers, which are widely utilised. The demonetization policy, which took effect in November 2016, further accelerated the digital transformation of the banking industry. This event marked a turning point in the sector's journey toward digitalisation. When high-denomination bills suddenly disappeared, there was a big increase in digital transactions. This prompted banks to upgrade their technology and encouraged people to pay without using cash. Increasingly, people are using mobile banking apps, digital wallets, and online banking sites. Additionally, linking Aadhaar to bank accounts facilitated identity verification and enabled secure transactions. These changes made banking services easier for customers to access and use. Even with these improvements, the Indian banking sector still faces numerous challenges. Digitisation has improved service delivery, but it has also introduced new risks and problems. Data breaches, online fraud, and cybersecurity threats are significant problems now. Customers often report incidents of phishing, fake calls requesting personal information, and unauthorised transactions. Cybercriminals have an easier time exploiting system flaws now that there are more digital channels available to them. To protect customer data and maintain their trust, banks must invest significantly in robust cybersecurity measures.

Another significant problem is the increasing number of banking crimes, including counterfeiting, money laundering, and identity theft. These crimes hurt the banking system's reputation as well as its finances. To address these issues, regulatory bodies have implemented stringent compliance requirements and anti-money laundering (AML) measures. However, these measures will only be effective if the banks can strictly adhere to them and educate their customers on how to bank safely. The banking sector continues to struggle with non-performing assets (NPAs). Banks continue to struggle with loan defaults and bad debts, despite the introduction of new technologies that have made loan processing and risk assessment easier. NPAs hurt banks' profits and limit how much they can lend. To address this issue, the government and the Reserve Bank of India (RBI) have proposed several solutions, including the Insolvency and Bankruptcy Code (IBC) and the establishment of asset reconstruction companies. However, it still requires a significant amount of time and effort to resolve bad loans. Another aspect that requires attention is the quality of customer service. Some customers feel left out because they don't interact with people as frequently as they used to, as more automated systems and chatbots are being introduced. To make customers happier, banks need to find a balance between automated services and personalised service. Additionally, because technology changes rapidly, bank employees must continually learn and enhance their skills to effectively utilise new systems and tools.

Another important factor that affects the success of digital banking papers is financial literacy. Many customers, especially those living in rural or semi-urban areas, struggle to utilise digital banking services effectively. The digital divide makes it more challenging to achieve the goal of financial inclusion and limits the benefits of new technologies. To close this gap, banks, government agencies, and non-governmental organisations (NGOs) must run large-scale campaigns and training programs. Despite these challenges, the Indian banking sector has made significant strides in leveraging technology to enhance its operations and better serve customers. Banks can now offer real-time banking services at all of their branches thanks to the use of core banking solutions (CBS).

The Unified Payments Interface (UPI), Bharat Interface for Money (BHIM), and National Electronic Funds Transfer (NEFT) are all examples of digital payment platforms that have changed the way people do business. The government's Digital India program has also helped accelerate the banking sector's transition to digital. The banking industry has changed rules and regulations, along with technological advancements. By implementing rules that encourage openness, responsibility, and financial stability, the RBI has played a key role in shaping the sector's growth path. The regulatory environment has improved due to the implementation of Basel III rules, risk-based supervision, and a greater emphasis on corporate governance. Banks have been able to better manage risk and become more resilient to financial shocks thanks to these changes.

Fintech companies have also had a big effect on the banking industry. These businesses utilise cutting-edge technologies, including AI, blockchain, and big data analytics, to develop innovative financial products and services. Increasingly, traditional banks are collaborating with fintech companies to enhance their services and expand their reach to new customer segments. As a result of this partnership, digital lending platforms, robo-advisors, and customised financial solutions have been created to meet the changing needs of customers. The Indian banking sector needs to continue embracing new ideas while also addressing the risks and challenges that accompany them. To keep digital banking systems secure, investments in cybersecurity, data protection, and fraud prevention must be prioritised. Banks also need to improve the customer experience by making their websites easier to use, offering personalised services, and having support channels that respond quickly. Utilising new technologies such as machine learning, the Internet of Things (IoT), and blockchain can make operations even smoother and enable individuals to make more informed decisions.

Additionally, regulatory bodies must ensure that the pace of innovation doesn't outpace the development of effective oversight mechanisms. For the banking sector to continue growing, it requires a balanced approach that fosters innovation while maintaining economic stability. Policymakers should also encourage the development of financial products that are accessible to everyone and benefit those who are often excluded. The Indian banking system has undergone significant changes over the last few decades. The sector has played a crucial role in driving the country's economic growth. It has evolved from a manually operated system to one that is technologically advanced and digitally connected. Even though there are still problems, such as cybersecurity threats, gaps in financial literacy, and operational risks, the sector's ongoing efforts to innovate and adapt offer hope for a more open, effective, and resilient financial system. To fully realise the potential of the banking sector in India's quest for sustainable economic growth, all parties involved, including banks, regulators, fintech companies, and customers, must continue to work together.

2. Review of Literature

Battase and Shankar [6] examined innovations in the banking sector in India. The study found that the Indian banking sector is undergoing a significant transformation across all its verticals. This transformation not only leads to a drastic change in banks' approach towards their customers but also results in substantial advancements in information and technology for banking products [1]. Banks in the contemporary era face a blitz of challenges, spurred by the latest technological advancements and mounting customer expectations, which stresses the need for Information Technology modernisation and digital innovation. The innovation in the banking sector received a boost with the emergence of private and foreign banks, which led to the integration of technological sophistication in every banking transaction [8]. The study concluded that the fundamental shift in the functioning of banks, both internally and externally, enables banks to provide better customer service. Vidya and Shailashri [4] analysed digital transformation in the Indian banking system. The study also revealed that the advantages and benefits of digital payment mechanisms outweigh the limitations and disadvantages, and that digital payments are very useful in the current scenario [3].

The study concludes that various factors have contributed to the rapid growth of digital payment systems in India, including the ease of use, benefits, affordability, fast-growing smartphone penetration, favourable regulatory policies, and increasing consumer readiness for digital payment platforms. The study reveals that banks are making a significant contribution to the country's financial services and have taken a major step forward in developing infrastructure and digital payment systems [5]. They are pursuing growth by focusing on business lines, channels, and product transformation while balancing ongoing regulatory pressures and the growing threat of disintermediation. By balancing tactical initiatives with long-term transformational growth strategies, banks are becoming the world's most successful digital sectors. Chauhan [2] examined the innovation in the performance of the Indian banking sector. The study found that the technology innovation allows banks to deliver greater customer service. It also causes a fundamental shift in the operation of information technology, which has made inroads in almost every industry, and banking is no exception. Innovation is the key in the Indian banking business, and technology breakthroughs are opening new doors to success. The results show that the fire of innovation has been fueled by core banking, leading to improved customer satisfaction in the Indian banking industry. Chavda [8] examined innovation in the banking sector in India.

The study found that, following demonetization, the banking system has changed through the Digital India initiative, influencing the online payment habits of the people. The changes become possible with the help of innovations in banking system like Unified Payment Interface (UPI), adoption of cloud technology, net banking, E-banking, Real Time Gross Settlements, National Electronic Fund Transfer, mobile banking, ATM, banking through banking Apps/Payment Apps like BHIM, Phone Pe and Paytm etc. it is evident that the banking system has grown in India to compare with other country [8]. The study concluded that the bank understands its customers and will meet their requirements, and the banking sector provides better services than other developed banks. Rao and Budde [9] examined the development of information and technology enabling banks in India. The study took the perceptions of bank customers and bank employees regarding the use of various products/services delivery channels and their acceptability in Andhra Pradesh.

Two hundred sample respondents were interviewed to assess the number of existing bank customers who utilise e-banking services. The study found that the size, profitability, and growth require banks to focus on serving customers at the right time, with the right level of services, and at the right cost. The customer expects personalised pricing and portfolio mixes, and banks that can't deliver will suffer reduced profitability. While banks typically sell every product to every customer, digital banking enables customisation. The study concluded that techno-led innovations in banks were preferred by customers, as completing business activities through computerisation at various channels had become simple. However, the development in banks with a technology emphasis only occurs when there is complete security, regular upgrades, and awareness among bank customers. Sunitha [1] analysed the innovations, challenges, and opportunities of e-banking in India. The study found that an adequate level of infrastructure and human capacity building is needed before developing countries can effectively adopt global technology to meet their local requirements. The competition among banks has led to an increasing level of total banking automation in the Indian banking industry. Banking is a generic term encompassing various forms of banking, including internet banking, telephone banking, and mobile banking, among others. The study concluded that the need for more innovative solutions, such as online cheque issuance, online demand draft acceptance and clearance, and timely information regarding balance and transfer, will benefit the customer.

The study suggests that banks can efficiently address the challenges and capitalise on the opportunities. Any hiccups in the current services can be rectified, and necessary measures can be taken to address challenges in the near future. Fathima [3] analysed the digital revolution in the Indian banking sector. The study found that a few commercial banks began moving toward digital customer services to stay competitive and remain relevant across various channels. Commercial banks in India have moved towards innovation through bank mechanisation and Automation, with the introduction of MICR-based check processing. Electronic Funds Transfer, Inter-availability among bank branches, and the implementation of the ATM Channel have facilitated the adoption of Anytime banking. The study concluded that the Reserve Bank of India has taken solid measures to reinforce the Payment and Settlement systems in banks [2]. The Indian government, banks, and fintech companies have been advancing and transforming how India spends its money. At the same time, the digital revolution also presents innovative challenges to the strength and integrity of the financial system, as well as the protection of buyers. Visalakshmi and Rasiah [7] examined the progress brought about by technologies in the financial market and the specialised banking sector. The study found that the banking sector utilises technology to digitise its operations and create new delivery models and services, such as mobile banking, remote deposit capture, debit card payments, and transferring funds from one account to another through the Automated Clearing House.

The study results indicate a shift in perspective from the vendor's market to the purchaser's market, driven by the convenience of banking. This shift has increased a man's accessibility to the bank for his various needs and requirements. Yet, the continuous evolution of innovation has a profound and sometimes unpredictable impact on the structure of the banking sector. However, implementing all this technology has been expensive, but the rewards are limitless. Moreover, disruptive technologies now offer an opportunity to address persistent challenges, such as financial exclusion [8]. The study concluded that the technology would continue to transform banking by offering more sophisticated services to customers through continuous product and process innovations. Chandrika and Nagpal [5] analysed the innovation in the banking sector and the challenges faced in India. The study found that the banking sector is also pursuing customer satisfaction, compelling them to adopt innovative approaches to create value for their customers. The banking innovation included plastic money, mobile banking, core banking, online banking, ATM, Kiosk banking, ECS, RTGS, NEFT, EFT, etc. The result shows that it has completely changed the face of Indian banking. At the same time, the banking sector in India faces numerous challenges posed by the environment. Banks must adopt a holistic approach to meet the ever-changing needs of customers and capture a larger market share. The study concluded that there is a need to equip themselves to meet these challenges, as well as those arising from the introduction of Basel III norms and the International Accounting Standards. Only then will the Indian banking sector gain the potential to grow and increase its scope of operation worldwide [5].

3. Research Gap

The banking sector is the backbone of the financial economy. It provides high-quality, sustainable services in the interest of the nation and economic development. The banking sector has undergone a gradual shift from traditional banking to information technology-enabled banking, characterised by innovations such as e-banking, credit cards, debit cards, NEFT, and RTGS. Most studies have considered the innovation, information, and technology that have entered the banking sector as a driver of economic growth. The present study aims to identify the research gap between performance and innovation in digital banking within the Indian banking sector.

3.1. Materials and Methods

The present study has the following objectives: i) to examine the digital banking innovations in the Indian banking sector; ii) to analyse the performance of digital banking innovations in India. The present study is based on secondary data. The required

data have been collected from various sources, including the Ministry of Finance, Reserve Bank of India, National Payment Corporation of India, NITI Aayog, as well as working papers and discussion papers. The study employed simple statistical tools, including the mean, standard deviation, coefficient of variation, regression analysis, ANOVA, and bar diagrams.

4. Result and Discussion

The Indian banking sector has a long history, dating back to 1935 when the central bank was established to regulate and govern banks in India. The Reserve Bank of India classifies banks into public sector banks, private sector banks, and foreign banks, as per the Second Schedule of the RBI Act, 1934. After independence, the Reserve Bank of India was nationalised on January 1, 1949, which led to a lack of confidence in the banking sector among the people and industry. The second reform of the banking sector was initiated in 1969. It is a milestone for the banking sector, as 14 banks were nationalised. In 1971, the Credit Guarantee Corporation was formed to provide credit to growing businesses, supporting industry development. The need for the agricultural sector was also strengthened. In 1977, the National Bank for Agriculture and Rural Development was established to set up regional rural banks for agricultural development. The economic reform since 1991 was implemented through various measures taken by the Reserve Bank of India. The banking sector has continually authorised new technologies, methods, and products for banking transactions. Virtually all banks have begun to utilise and adopt technology and innovation methods as the banking sector has evolved. These innovations and technological methods, such as RTGS, NEFT, ECS, CTS, Net Banking, debit cards, and credit cards, have been introduced into the banking sector. It is the customer-centric yet competitive financial industry. Currently, India has 12 public sector banks, 22 private sector banks, 45 foreign banks, 56 rural banks, 1,485 urban cooperative banks, and 96,000 rural cooperative banks.

5. Performance of Innovation and Technology of the Banking Sector

5.1. Automated Teller Machine (ATM)

The first ATM was set up in 1987 by HSBC in Mumbai. Following those ten instances, approximately 1,500 ATMs were set up in India. In 1997, the Indian Bankers' Association suggested that ATM had led to the quick development of the banking sector. An automated teller machine (ATM) is an electronic banking outlet that allows customers to access a wide range of services without the assistance of a bank representative or teller. Anyone with a debit card and a credit card can withdraw cash at most ATMs in India. Over the past two decades, there has been tremendous growth in the ATM performing process in civic, semi-civic, and pastoral areas. The client's frequent use of the ATM has led to policy changes, which have restricted sales at the branch ATM. As a result, other ATMs have been withdrawn from cash, and charges will be subtracted.

5.2. National Electronic Fund Transfer (NEFT)

National Electronic Funds Transfer is an electronic exchange account system supported by the Reserve Bank of India (RBI). Established in November 2005, it is maintained by an organisation that claims to be "dedicated to improving and exploring innovation in the field of currency storage." NEFT enables bank customers in India to transfer funds between two NEFT-approved bank accounts individually through the NEFT system. The Indian Financial System Code (IFSC) is an alphanumeric code that uniquely identifies a bank branch participating in the NEFT system. It is an 11-digit code consisting of the first four digits of the bank identification and the last six digits of the branch identification. The fifth character is 0 (zero). The IFSC code is used in the NEFT system to identify sender and recipient banks and branches, and route messages to the respective banks and branches accordingly.

5.3. Real Time Gross Settlements (RTGS)

Real-time gross settlement was introduced on April 16, 2004, and banks became accustomed to transferring funds independently of each other. However, this significantly increases the risk of lapse. If even one bank fails to pay, a domino effect will affect all banks. This type of payment system is created and maintained by the Reserve Bank of India. Each transaction is processed and settled individually in real time. The minimum transaction amount is Rs. 2 lakhs. It is mainly used by institutions, large merchants, and corporations to transfer funds. The average transaction size in 2023 was Rs 62 lakh, and many banks and the RBI offer online transactions that are free of charge. For transactions between Rs 2 lakh and Rs 5 lakh, the fee ranges from 25% to 50%. For transactions exceeding Rs 5 lakh, the fee is 50%.

5.4. Micro ATMs

Micro ATMs are a mini-interpretation of an ATM. The micro platform will enable function through low-cost devices (Micro ATMs) that will be connected to several banks across the country. This would enable an individual to deposit or withdraw

funds at any of the banks associated with the device's proprietor. The platform will facilitate instant deals. The introductory sale types supported by micro-ATM are Deposits, withdrawals, fund transfers, and balance enquiries.

5.5. Credit Card and Debit Card

Bank cards offer guests more security, convenience, and control than any other payment method available. Credit, debit, and cashback cards offer two-factor authentication for secure payments. These cards can be used at point-of-sale (POS) machines, ATMs, Smart ATMs, shops, wallets, online shops, and e-commerce websites. Multinational cards are used worldwide for multiple currencies.

5.6. Immediate Payment Service (IMPS)

IMPS is a 24/7 inter-bank electronic fund transfer service within banks across India, available through mobile, internet, and ATM, making it not only safe but also convenient and fast. Some banks charge transfer charges for IMPS deals depending on the type of client account and the amount transferred.

5.7. Point of Sale

Point of Sale (POS) is the place where a client makes a payment for goods or services. Every time a client makes a purchase at the store, they are completing a point-of-sale transaction. Marketers and retailers use point-of-purchase (POP) displays to attract customers to their businesses. A POS sale may be made in person or online, and bills are generated either in print or electronically. This strategy is popular among enterprises looking to stay competitive.

Table 1: Mean of innovation and technology infrastructure for the Indian banking sector during 2014-2023 (Numbers: Crores)

Year	ATM		PoS		Micro ATMs	Bharat QR Codes	UPI QR Code	Credit Cards	Debit Cards
	On-Site	Off-Site	Online	Offline					
2014-15	86821	78725	1059092	10317	0	0	0	19586491	420870003
2015-16	93953	92116	1169982	339	0	0	0	21824046	583296597
2016-17	103748	97898	1465867	603	0	0	0	25882887	701474863
2017-18	109729	97883	2704469	653	0	0	0	31888525	801218974
2018-19	107160	98521	3293986	0	0	0	0	39961170	934198904
2019-20	109368	96977	6845199	0	0	0	0	50217365	849137035
2020-21	113533	96447	4512874	0	454218	2499181	0	58078282	850629041
2021-22	115006	97621	4839507	0	604406	4096426	0	63960791	910750871
2022-23	119356	97302	6619590	0	1097561	4636754	205564026	76955213	931701578
2023-24	123830	94960	7949810	0	2161715	5617779	2711513111	88734057	964898902

Source: Reserve Bank of India (2024)

Table 1 above shows the mean and performance of innovation and technology infrastructure facilities in the Indian banking sector from 2014 to 2023. The mean of onsite ATM facilities has increased from 86821 to 123830, and from 78725 to 94960 during this period. The share of on-site ATMs has developed positively, while the share of off-site ATMs has increased only slightly. The banking sector has introduced many technologies and innovations in the post-demonetization period, which are gradually increasing the use of Micro ATMs, Bharat QR, and UPI QR. The Credit and debit cards witnessed tremendous growth during this period (Table 2).

Table 2: ANOVA result for performance and innovation of the Indian banking sector

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	5.75E+18	8	7.18E+17	8.519086489	2.43042E-08	2.054882
Within Groups	6.83E+18	81	8.43E+16			
Total	1.26E+19	89				

- **H01:** There is no significant difference in the mean value performance of innovation and technology infrastructure facilities for the Indian banking sector.

- **Inference:** $F_{cal} > F_{crit}$; therefore, H_01 was rejected, and it was concluded that there is a significant difference in mean value performance of technology infrastructure facilities for the Indian banking sector.
- **H_02 :** There is no significant difference in the mean value performance of innovation and technology infrastructure facilities for the Indian banking sector.
- **Inference:** $F_{cal} > F_{crit}$; therefore, H_02 was rejected, and it was concluded that there is an increase in the mean value performance of innovation and technology infrastructure facilities for the Indian banking sector.

Table 3: Performance of digital payment system indicators of the banking sector during 2014-2023 (Volume in Lakhs)

Year	RTGS	APBS	ECS	IMPS	NACH	NEFT	UPI	Credit Card	Debit Card	Mean
2015-16	983	7175	390	2208	6234	12529	-	7857	11736	6139
2016-17	1079	9491	101	5067	7319	16221	6961	10871	23993	9011
2017-18	1244	12980	61	10098	7031	19464	109832	14052	33434	23133
2018-19	1366	14949	54	17529	8834	23189	876971	17626	44143	111629
2019-20	1507	16747	18	25792	11100	27445	2131730	21773	50611	254080
2020-21	1592	14373	0	32783	16465	30928	4103658	17641	40146	473065
2021-22	2078	12573	0	46625	18758	40407	8415900	22399	39384	955347
Mean	14707	12613	89	20014	10820	24311	2607509	16031	34778	261772

Source: Reserve Bank of India (2024).

Table 3 above shows the evolution of digital payment system indicators in the banking sector from 2015-16 to 2021-22. The average volume share of the banking sector has been allocated to new payment systems, which have recently played a significant role in India. Digital payment methods are part of banking technology and innovation. The banking sector has been advocating for cashless, faceless, and paperless banking transactions by the account holders. This is a necessary step for strengthening the banking industry, as it provides credit to various sectors and mobilises financial resources from the public sector, without which it cannot claim to be a driving force behind economic development. The introduction of new technologies and innovative applications or facilities in the banking sector has led to significant growth in recent years (Table 4).

Table 4: ANOVA result for the performance and innovation of the Indian banking sector

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	6.54E+12	6	1.09E+12	0.730748	0.626857	2.268717
Within Groups	8.21E+13	55	1.49E+12			
Total	8.86E+13	61				

- **H_01 :** There is no significant difference in volume of transactions between electronic devices, such as RTGS, APBS, IMPS, NEFT, UPI, Credit Card, and Debit Card.
- **Inference:** $F_{cal} > F_{crit}$; therefore, H_01 was rejected, and it was concluded that there is a significant difference in transaction volume between RTGS, APBS, IMPS, NEFT, UPI, Credit Card, and Debit Card.

Table 5: Performance of digital payment system indicators of the banking sector in India during 2014-2023 (Value in Crores)

Year	RTGS	APBS	ECS	IMPS	NACH	NEFT	UPI	Credit Card	Debit Card	Mean
2015-16	82457801	18598	105944	162226	287751	8327311	-	240662	158927	11469902
2016-17	98190376	34838	14408	411106	387074	12003968	6961	328382	329907	12411891
2017-18	116712478	55948	11864	892497	521001	17222852	109832	458965	460070	15160611
2018-19	135688187	86226	13235	1590257	729673	22793608	876971	603413	593475	18108338
2019-20	131156475	99048	5146	2337541	1037079	22945580	2131730	730894	703920	17905268
2020-21	105599849	111001	0	2941500	1216536	25130910	4103658	630414	661385	15599472
2021-22	186575161	133345	0	4171037	1281685	28725463	8415900	971638	730213	25667160
Mean	122340046	77000	21514	1786594	780114	19592813	2607508	566338	519699	16617520

Source: Reserve Bank of India (2024)

Table 5 above presents the performance of digital payment system indicators in the Indian banking sector from 2014 to 2023. The value of digital payment systems has increased across various platforms, including RTGS, APBs, IMPS, NEFT, UPI, credit cards, and debit cards. However, the electronic clearing system has shown a negative growth rate in recent years. The banking sector is a crucial component of business activities, making all functions that depend on it essential for economic development (Table 6).

Table 6: ANOVA result for the performance and innovation of the Indian banking sector

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.96596E+16	8	1.12075E+16	78.73043	5.52E-26	2.126023
Within Groups	7.25996E+15	51	1.42352E+14			
Total	9.69196E+16	59				

- **H02:** There is no significant difference in the value of transactions between electronic devices, such as RTGS, APBS, IMPS, NEFT, UPI, Credit Card, and Debit Card.
- **Inference:** $F_{cal} > F_{crit}$; therefore, H02 was rejected, and it was concluded that there is a significant difference in terms of transaction volume between RTGS, APBS, IMPS, NEFT, UPI, Credit Card, and Debit Card.

6. Conclusion

The bank is the backbone of the financial economy. It mobilises the public's financial resources and grants various types of credit to account holders, industries, and entrepreneurs, among others. The banking sector has experienced tremendous growth in recent times and is now competing with the broader financial services industry. The performance of the banking sector initially lacked significant technology and innovation. Later, after nationalisation and economic reform, India was gradually allowed to adopt new payment systems, transaction money, quick access, and the accuracy of modern technology in the banking sector. At the same time, banking crime was reduced by addressing fraud calls, unauthorized bank inquiries, queries about card details, PINs, and unknown short messaging services. Additionally, links were sent to account holders via mail and phone calls to minimize the uncertainty of banking hours. The study concluded that the central, government and non-government organization awareness through the public interest for the people for online application for secure used to be the frequently share the message to all bank on the front page and bank pass book within the first page were guidelines and rules for using the online methods for the people and the central bank were increasing digital literacy and strict rules and regulation to be followed all banks will be major role of the economic development.

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