Mobile Banking: A Comparative Study of Selected Public and Private Sector Banks in India

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***Abstract*—Technological advancements have significantly transformed India's financial sector, with mobile banking and wallets becoming central to modern banking. As of 2024, there are approximately 7.1 billion smartphone users worldwide, reflecting widespread global adoption. In India, the number of smartphone users reached around 659 million, making it the second-largest smartphone market after China. This growth is driven by affordable devices, competitive data plans and expanding 4G/5G networks and about 72.57% use mobile banking. Banks are prioritizing digital services to enhance customer convenience, reduce physical operations and increase efficiency. Mobile banking offers services like account access, fund transfers, bill payments and ATM locators. Mobile wallets, requiring minimal setup such as mobile numbers and basic KYC, support limited transaction-based functions. Key players of mobile wallets include Paytm, SBI Buddy, Airtel Money, ICICI Pockets and others. It uses Near Field Communication (NFC), a short-range wireless technology that enables mobile phones to function as transit passes and data transfer tools. The study aims to compare mobile banking transactions (volume and value) between a public sector bank (SBI) and a private sector bank (ICICI) in India. These banks were selected based on factors like inception date, number of branches, transaction data and active mobile banking users as of March 31, 2025. The researcher uses secondary quantitative data from the financial years 2020 - 2025. Through statistical and thematic analysis, the study seeks to identify trends and insights to support policymakers and financial institutions in promoting mobile banking adoption, focusing specifically on the two selected banks.**

***Index Terms*—Mobile banking, mobile wallets, mobile applications, online transaction, Near Field Communication (NFC).**

1. INTRODUCTION

Mobile banking has significantly transformed the financial sector, especially in emerging markets. While it offers great potential, challenges such as affordability, trust, and accessibility must be addressed. User satisfaction depends on factors like technological access, information availability, and ease of interaction. Success in mobile banking also requires adapting to local regulatory frameworks and customer needs.

The rise of Information and Communication Technology (ICT) has greatly influenced the banking sector, leading to innovations such as digital records, ATMs, internet banking, and now mobile banking. Mobile banking, in particular, has expanded access to financial services, reaching even rural areas. It enables contactless and branchless banking, offering a cost-effective and efficient solution for banks to grow their customer base and explore new market segments. Mobile banking applications offer customers convenience, mobility and 24/7 access to banking services, eliminating the need for branch visits and saving time. Growing awareness and evolving customer expectations have driven increased adoption of these services. With mobile phone usage rising globally, banks view mobile platforms as a strategic channel to expand their customer base, reduce costs, and improve profitability. Today, customers can perform a wide range of banking tasks - such as balance checks, money transfers, and transaction management - directly through mobile apps. Mobile banking allows customers to perform financial transactions remotely via apps on smartphones or tablets, offering 24/7 access. Services typically include viewing account balances, paying bills, transferring funds, and downloading statements. While some restrictions may apply, mobile banking reduces the need for branch visits, helping banks lower operational costs. Many apps now also support remote cheque deposits using a device’s camera.

1.1 Mobile banking in India:

The banking industry is one of the global leaders in adopting mobile technology, with India emerging as the fastest-growing mobile communications market in Asia. India's journey in technology-driven banking began in 1987 when HSBC introduced ATMs, two decades after their global debut by Barclays in the UK. Major financial reforms initiated in 1991 and 1997, based on recommendations by the Narasimham Committee, played a key role in modernizing the Indian banking sector and accelerating the adoption of technology-based services.

Mobile banking (m-banking) was first introduced in India in 1999 by ICICI Bank, followed by HDFC and IDBI banks. M-banking - an advanced form of electronic banking - allows customers to perform financial transactions using mobile devices without visiting a bank branch. It includes services such as m-finance, m-payments, and m-transfers. The development of m-banking has been driven by advancements in self-service technologies, aiming to increase customer satisfaction and loyalty through 24/7 access, reduced costs, and enhanced service efficiency. Globally, mobile technology has enabled banks to reach customers even in remote areas without traditional banking infrastructure. Since 2007, m-banking has gained immense popularity as part of the broader m-commerce ecosystem. Its success depends on collaboration among banks, mobile network operators, technology vendors, and customers. Recognizing its potential, the Government of India and the Reserve Bank of India (RBI) have encouraged mobile banking adoption and issued formal guidelines in 2008, restricting mobile network operators from independently offering financial services.

1.2 Profile of sample banks:

1.2.1 State Bank of India (SBI) – Profile:

The State Bank of India (SBI) is the largest public sector bank in India, headquartered in Mumbai. Established in 1955, it operates a vast network of over 22,000 branches and 62,000 ATMs across the country, serving more than 470 million customers. Owned by the Government of India, SBI offers a wide range of banking and financial services, including retail and corporate banking, loans, insurance, investment services, and digital banking through platforms like YONO. With a global presence in over 30 countries, SBI plays a key role in financial inclusion and is a leader in digital innovation in the Indian banking sector.

1.2.2 Industrial Credit and Investment Corporation of India – Profile:

ICICI Bank is one of India's leading private sector banks, headquartered in Mumbai. Established in 1994 as a wholly owned subsidiary of ICICI Limited, it has grown to become a major financial institution offering a wide range of banking and financial services to retail and corporate customers. The bank operates through a network of over 5,000 branches and 15,000+ ATMs across India, along with a strong international presence. ICICI Bank is known for its innovation in digital banking, offering user-friendly platforms like Mobile Pay and internet banking. It provides services such as personal and corporate loans, deposits, insurance, investment products, and NRI banking.

2. REVIEW OF LITERATURE:

Suresh (2017), focused on the changing consumer behaviour and the adoption of mobile banking services in India. The study examines mobile banking as the most recent and innovative banking service, exploring how customers weigh the benefits and costs of using it.

The key determinants of customer satisfaction identified include:

- Security
- Efficiency
- Cost-effectiveness
- Ease of demand fulfilment
- Accuracy of results

The research aimed to analyse customer response and satisfaction levels with mobile banking based on these factors. It emphasized mobile banking as a highly efficient and accessible e-channel, enabling banking services anytime and anywhere, thus improving customer convenience. Additionally, the study highlighted that mobile banking not only benefits customers but also enhances staff efficiency and operational performance for banks. Overall, the paper explored consumer satisfaction with mobile banking and the key factors influencing its adoption in the Indian context.

Suresh (2017), examined the shifting consumer behaviour toward mobile banking services in India,

focusing on the factors influencing adoption and satisfaction. The study found that key determinants of customer satisfaction include security, efficiency, cost-effectiveness, ease of use, and result accuracy. It highlights mobile banking as a convenient e-channel that benefits both customers and banks by enhancing service accessibility and staff efficiency. The paper ultimately explores the factors driving mobile banking adoption and evaluates user satisfaction with this emerging digital payment platform.

Asongu and Odhiambo (2017) investigated the relationship between mobile banking and inclusive development, focusing on aspects such as growth quality, inequality, and poverty. Their findings suggest that mobile banking plays a crucial role in addressing challenges related to underdevelopment, inequality, and poverty in developing countries.

An empirical investigation of the elements impacting the uptake of mobile banking services was carried out by Lalitha Balakrishnan (2016). The report emphasizes how the banking industry has undergone a considerable transformation due to Internet technology, which is the third big revolution in the modern world. It highlights the slow development of banking technology, beginning with ATMs, which took more than ten years to become popular, and moving on to phone and internet banking, which spread more quickly. After phone and internet banking, the survey ranks mobile banking as the third significant technical phase in banking. Surprisingly, mobile banking has grown far more quickly than its predecessors because to customer ease and technology innovation.

Bharti (2016), found that factors such as distinctiveness, security, efficiency, innovation, updates, and personalization had no impact on customer satisfaction with mobile banking. However, supportive access showed a direct positive relationship with satisfaction. The study focused on e-banking features and customer expectations but did not examine other aspects of mobile banking. It recommended increasing customer awareness about mobile banking services.

Hossain and Hossain (2015), identified key factors influencing customer satisfaction in mobile banking. Responsiveness and reliability were found to have a significant positive impact. The study highlighted that customers expect consistent service quality with every transaction. It recommended that banks focus on the most influential factors to enhance satisfaction and maximize profitability.

Jannat and Ahmed (2015), explored factors influencing customer satisfaction among mobile banking users of second-generation banks. They found that accuracy, convenience, cost-effectiveness, ease of use, security and trust, system availability, and transaction speed significantly impacted satisfaction. While the study established a strong relationship between these factors and customer satisfaction, it acknowledged that other unidentified factors may also play a role.

Amiri Aghdaie and Faghani (2012), used the SERVQUAL model to examine the relationship between service quality and customer satisfaction in mobile banking. Their study found that empathy, reliability, responsiveness, and tangibility positively influenced customer satisfaction, while assurance had no impact. Unlike other studies, their findings supported all SERVQUAL dimensions (except assurance). However, the study focused solely on service quality factors, overlooking other potential influences on customer satisfaction.

Suoranta and Mattila (2004), explored consumer behavior in the adoption of mobile banking, identifying characteristics of potential adopters and differences among user segments. Their study emphasized the impact of demographic factors and customers' preferred communication modes on mobile banking adoption. Using a postal questionnaire, they gathered data from 1,253 respondents in Finland between May and July 2002, offering valuable insights into adoption patterns and user profiles.

3. STATEMENT OF THE PROBLEM

Despite the rapid growth and adoption of mobile banking services across India, there remains a significant disparity in the quality, efficiency, and customer satisfaction levels between public and private sector banks. In the country India - a key financial hub - customers of both types of banks engage in mobile banking transactions, yet their experiences often differ due to variations in technological infrastructure, service innovation, and responsiveness. While private sector banks are generally perceived as more agile and technology-driven, public-sector banks serve a broader customer base, often including less tech-savvy users. However,

there is limited empirical evidence comparing how effectively each sector is meeting the growing demand for secure, accessible, and user-friendly mobile banking services. This lack of comparative analysis creates a gap in understanding the use of mobile banking in terms of volume and value considering actual-active users.

This study aims to investigate and compare mobile banking transaction patterns in terms of volume and value between selected public and private sector banks in India, thereby identifying key strengths, weaknesses, and areas for improvement in both sectors.

4. OBJECTIVES OF THE STUDY

1. To demystify the concept of mobile banking in India considering modern financial ecosystem.
2. To analyse and compare the growth patterns and emerging trend of mobile banking in terms of volume, value and actual-active mobile banking users of selected public sector bank SBI and private sector bank ICICI in India.

5. HYPOTHESIS OF THE STUDY

$H1_0$ = No statistically significant variation is observed in mobile banking transaction volumes between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H1_1$ = Statistically significant variation is observed in mobile banking transaction volumes between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H2_0$ = The value of mobile banking transactions shows no statistically significant difference between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H2_1$ = The value of mobile banking transactions shows statistically significant difference between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H3_0$ = No statistically significant difference is observed in the actual-active mobile banking user base between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H3_1$ = Statistically significant difference is observed in the actual-active mobile banking user base between the State Bank of India and the Industrial Credit and Investment Corporation of India.

6. RESEARCH METHODOLOGY

6.1 Type of Research: The present study is descriptive-quantitative in nature, is used to study the use of mobile banking in terms of volume and value and actual active mobile banking users from SBI and ICICI bank in India.

6.2 Collection of data:

6.2.1 Primary Data: Since the present study is analytical based on secondary, no primary data were collected.

6.2.2 Secondary Data: The required secondary data related to volume and value of mobile banking users were collected from the Reserve Bank of India archives and published annual reports of the State Bank of India and the Industrial Credit and Investment Corporation of India and instructions manuals on loans and advances, books and periodicals, articles, research papers and related Internet citations.

To test the reliability of the data, the researcher has conducted Cronbach's Alpha as follow.

Table No. 1: Reliability Statistics Related to Products

Factors	Cronbach's Alpha	No. of Items	esults in Terms of Internal Consistency
Related to Mobile Banking transactions in terms of Volume	.723	10	Acceptable
Related to Mobile Banking transactions in terms of Value	.836	10	Good
Related to Actual-Active Mobile Banking Users	.755	10	Acceptable

Source: Based on researchers Calculations.

6.3 Sampling:

6.3.1 Sample Population: The sample population includes mobile banking service providers and actual users.

6.3.2 Sample Unit: The sampling units are the State Bank of India and the Industrial Credit and Investment Corporation of India and actual active mobile banking users of sample bank as on 31st March, 2025.

6.3.3 Sample Size: One bank from each of the public sector bank - the State Bank of India and private sector banks - the Industrial Credit and Investment Corporation of India in India have been selected actual SBI debit card users in Mumbai region.

6.4 Sampling Method: The Sample bank have been selected on the following basis.

Table No. 2: Criterion to select sample banks

Sample Bank	Date of Inception	Number of Branches in India as 31st March ,2025	Mobile banking data as on 31st March, 2025		
			Volume (in actuals)	Value (in Rs'000)	No. of active customers using mobile banking
SBI	1806	23000	4593777973	8670877907.32	140600113
ICICI	1955	7543	685911307	3868196012.18	16916142

Source: RBI archives.

7. RESULTS AND DISCUSSIONS

7.1 Testing of hypothesis and interpretations:

To test the present research hypothesis and conclude with findings of the study the researcher has cited required secondary data related to mobile banking transactions. The same has been compare and analysed to concrete the findings as follow.

$H1_0$ = No statistically significant variation is observed in mobile banking transaction volumes between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H1_1$ = Statistically significant variation is observed in mobile banking transaction volumes between the State Bank of India and the Industrial Credit and Investment Corporation of India.

To test above null hypothesis the researcher has collected secondary data related to mobile banking in terms of volume of SBI and ICICI bank respectively as follow.

Table No. 3: Mobile Banking Transactions in terms of Volume

As on	ICICI	SBI
March, 2021	7049121878	43421990183
March, 2022	5768370896	32522470767
March, 2023	4500281999	21003860941
March, 2024	2836743763	12067080130
March, 2025	1607137664	6050939253

Source: RBI archives.

To test above data the researcher has conducted Chi-square test and interpret the same.

Table No.4: Calculation of Chi-Square Value - To Measure Statistical Significance Difference in Mobile Banking Transactions in terms of Volume

Variable and calculate Statistics	MBTVO
Chi-Square Calculated Value	0.000
Df	9
Table Value	11.07
Asymp. Sig.	1.000
Result	P value (0.000) < T value (11.07) = 1.000 > 0.05

Source: Compiled from secondary data.

The table above shows that the Chi-square calculated value is lower than its table value and its significance value is more than 0.05 i.e. @5 % level of significance. This shows that no statistically significant variation is observed in mobile banking transaction volumes between the State Bank of India and the Industrial Credit and Investment Corporation of India, $H1_0$ (Null Hypothesis) is Accepted.

$H2_0$ = The value of mobile banking transactions shows no statistically significant difference between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H2_1$ = The value of mobile banking transactions shows statistically significant difference between the State Bank of India and the Industrial Credit and Investment Corporation of India.

To test above null hypothesis the researcher has collected secondary data related to mobile banking in terms of value of SBI and ICICI bank respectively as follow.

Table No. 5: Mobile Banking Transactions in terms of Value

	ICICI	SBI
March, 2021	78809907849	103903424179
March, 2022	29749377683	66552944068
March, 2023	25745944984	50148510205
March, 2024	16712085784	33131739880
March, 2025	10809560209	19149037519

Source: RBI archives.

To test above data the researcher has conducted Chi-square test and interpret the same.

Table No. 6: Calculation of Chi-Square Value - To Measure Statistical Significance Difference in Mobile Banking Transactions in terms of Value

Variable and calculate Statistics	MBTVO
Chi-Square Calculated Value	0.000
Df	9
Table Value	11.07
Asymp. Sig.	1.000
Result	P value (0.000) < T value (11.07) = 1.000 > 0.05

Source: Compiled from secondary data.

The table above shows that the Chi-square calculated value is lower than its table value and its significance value is more than 0.05 i.e. @5 % level of significance. This shows that the value of mobile banking transactions shows no statistically significant difference between the State Bank of India and the Industrial Credit and Investment Corporation of India., $H2_0$ (Null Hypothesis) is Accepted.

$H3_0$ = No statistically significant difference is observed in the actual-active mobile banking user base between the State Bank of India and the Industrial Credit and Investment Corporation of India.

$H3_1$ = Statistically significant difference is observed in the actual-active mobile banking user base between the State Bank of India and the Industrial Credit and Investment Corporation of India.

To test above null hypothesis the researcher has collected secondary data related to actual-active mobile banking users from SBI and ICICI bank respectively as follow.

Table No. 7: Actual-active Mobile Banking Users

	ICICI	SBI
March, 2021	189733639	1507665253
March, 2022	174220578	1360522471
March, 2023	169456425	1140231768
March, 2024	159028288	1204250605
March, 2025	166702783	1272588502

Source: RBI archives.

To test above data the researcher has conducted Chi-square test and interpret the same.

Table No. 8: Calculation of Chi-Square Value - To Measure Statistical Significance Difference in Mobile Banking Users

Variable and calculate Statistics	MBTVO
Chi-Square Calculated Value	0.000
Df	9
Table Value	11.07
Asymp. Sig.	1.000
Result	P value (0.000) < T value (11.07) = 1.000 > 0.05

Source: Compiled from secondary data.

The table above shows that the Chi-square calculated value is lower than its table value and its significance value is more than 0.05 i.e. @5 % level of significance. This shows that no statistically significant difference is observed in the actual-active mobile banking user base between the State Bank of India and the Industrial Credit and Investment Corporation of India, $H3_0$ (Null Hypothesis) is Accepted.

7.2 Findings of the study:

1. Mobile Banking Transaction Volume:

The analysis reveals that there is no statistically significant difference in the volume of mobile banking transactions between SBI and ICICI Bank. Despite differing customer bases and operational strategies, both banks exhibit comparable levels of mobile transaction activity. This suggests that mobile banking adoption, in terms of transaction count, has reached similar maturity across leading banks in both sectors.

2. Mobile Banking Transaction Value:

Similarly, the study found no significant variation in the value of mobile banking transactions between the two institutions. This indicates a convergence in customer behaviour regarding high-value transactions through mobile platforms. The findings reflect a broader trend of increasing trust and reliance on mobile banking services for both routine and high-value transactions, irrespective of bank ownership type.

3. Actual-Active Mobile Banking Users:

An examination of actual-active mobile banking users shows that both SBI and ICICI Bank maintain a similar number of consistently engaged users. The lack of a significant difference implies that public and private banks alike have been successful in encouraging consistent use of mobile banking services. Factors such as improved app interfaces, enhanced security, and aggressive digital outreach programs may have contributed to this parity.

8. LIMITATIONS OF THE STUDY

The limitations of the present research have been categorising as follow;

- Limited Sample Size**:** The study focuses only on a selected number of public and private sector banks i.e. one from each of the sector the SBI and the ICICI; which may not represent the entire banking sector in India.
- Geographic Constraints: The secondary data is restricted to actual mobile banking users of the SBI and the ICICI bank specific region to the country India.
- Time-Bound Analysis: The present research relies on secondary data from a specific time period from as on 31st March 2021 to 2025 only.

9. SCOPE FOR THE FUTURE RESEARCH

1. Future research can be conducted expanding number of banks from each of the sector.
2. Primary data can be collected analysed data from customers and bank staff point of view.
3. Mobile banking application interface can compare and analysed from the point of view of app features, user-friendliness, and support services to evaluate their impact on usage.

10. CONCLUSION

The study “Mobile Banking: A Comparative Study of Selected Public and Private Sector Banks in India” highlights the evolving landscape of digital banking in the country. It reveals that mobile banking has

significantly transformed customer interactions with banks, offering faster, more convenient, and accessible services. The findings indicate that the gap between public and private sector banks in mobile banking is narrowing in India, driven by smartphone adoption, UPI integration, and digital initiatives. However, as the study focused on major banks, the results may not reflect trends in smaller institutions. Future research should include a wider range of banks and explore additional factors like customer satisfaction, service quality, and cybersecurity.

Overall, mobile banking is poised to play a crucial role in advancing financial inclusion and digital empowerment, provided that banks, regulators, and stakeholders work collaboratively to address existing challenges and tap into the full potential of mobile financial services.

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