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Digital Transformation in Cooperative Banking: An Empirical Analysis of Digital Banking Services in the Tamil Nadu State Cooperative Bank and District Central Cooperative Banks

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Abstract - Digital transformation has reshaped Cooperative baking by improving the accessibility and efficiency of financial services. This study examines the digital banking performance of the Tamil Nadu State Cooperative Bank and District Central Cooperative Bank using secondary data for February- March 2026. The findings show that total digital transactions increased from 13.83 million to 14.51 million, recording an overall growth of 4.92%, with UPI emerging as the dominant payment platform. The study concludes that digital banking has strengthened customer convenience, operational efficiency, and financial inclusion in the Tamil Nadu Cooperative Banking Sector.

***Keywords*:** Digital Transformation in Cooperative Banking, TNSCB, DCCB, UPI, Financial Inclusion Tamil Nadu.

1 Introduction

In India, the Cooperative Sector plays a crucial role in the banking ecosystem. There are 180 Urban Cooperative banks and 4,473 Rural Cooperative Societies as of June 30, 2026. Moreover, the overall depositor base of these banks exceeds eight crores. With such a significant contribution, the complete digital transformation of these banks is essential to make them future-ready. Especially after the advent of the pandemic, the digital transformation of Cooperative banks has become a must. Although technological advancements have already begun in the Cooperative sector, it still has much to catch up with high-tech commercial banks. Cooperatives must digitise to navigate the shifting environment. They could provide financial support. However, this may not be useful for retaining important clientele that prefers simple, digital operations in the future. At present, cooperatives rely on close relationships with their clients and members. Although trust and stakeholder relationships are important, they may not be enough to attract the current generation to financial services. From the end user's perspective, core banking solutions facilitate the expedited processing of routine transactions, such as cash deposits and withdrawals, passbook entries, statements of account, and demand drafts. In addition, by enabling consumers to access banking 24*7, anytime, anywhere through ATMs and digital platforms, CBS helps them be less branch-bound. The Tamil Nadu State Cooperative Bank (TNSCB) and the District Central Cooperative Bank (DCCB) are both introducing services such as UPI, IMPS, NEFT, RTGS, ATM, Micro-ATM, and mobile banking. During March 2026, the Cooperative banking network recorded 145.14 lakh digital transactions, of which 138.32 lakh transactions were processed through major electronic payment channels, demonstrating the rapid adoption of digital financial services across Tamil Nadu.

2 Research Gap

In Tamil Nadu, most studies discuss digital banking in commercial or urban Cooperative banks. Comparatively fewer empirical studies comprehensively evaluate digital transaction performance across the Tamil Nadu State Cooperative Bank and all District Central Cooperative Banks using transaction data.

3 Objective of the Study

1. To examine the digital transformation initiatives implemented by the Tamil Nadu State Cooperative Bank and District Central Cooperative Banks.
2. To analyse the growth and performance of digital banking services such as UPI, IMPS, NEFT, RTGS, ATM and Micro-ATM.
3. To evaluate the contribution of digital banking services towards customer convenience and financial inclusion.

4 Statement of the Problem

Digital banking has become a necessity in today's economy, as it provides easy, safe, and quick transaction services. While the Tamil Nadu State Co-Operative Bank (TNSCB) and the District Central Co-Operative Banks have made considerable

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progress in providing digital payment alternatives, such as UPI, IMPS, NEFT, RTGS, and Micro-ATMs, there is a lack of information about the cooperative banks' digital banking practices. Moreover, previous studies have primarily focused on investigating the digital banking practices of commercial banks, and this area has not received sufficient attention.

5 Review of Literature

s. no	Author	Country	Variable	Key Findings
1	**Vigneshwaran & Ravichandran (2025)**	India	Digital Transformation, PACCS, Financial Inclusion, Rural Livelihood	The study aimed to determine the role of digitalisation in primary agricultural cooperative credit societies in Tamil Nadu. The concluding statement stated that introducing core banking, mobile, and digital payment solutions increased convenience in the study area. According to the research results, digitalisation improved financial inclusion of the masses by speeding up transactions and minimising delays.
2	**Aggarwal (2024)**	India	Digital Transformation, Cooperative Banking, Operational Efficiency	The research aimed to assess the impact of digital transformation on the cooperative banks in India. The conclusion made was that digital technologies had improved customer service, increased the efficiency of operations, and accelerated transaction processes in the organisations. The process faced challenges due to insufficient technological infrastructure and security concerns on the cyber platform, which hindered development.
3	**Ruby et al. (2024)**	India	Digital Banking, Financial Technology,	The research examined the perceptions of cooperative bank

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			Customer Adoption	customers regarding the adoption of digital banking products. The conclusion was that more individuals were developing an interest in the new services introduced to them because of the many advantages they offered over conventional ones. The study recommended promoting digital awareness and embracing innovations to improve customer service.
4	**Adhyapak & Benur (2024)**	India	Digital Banking, Cooperative Banks, Technology Adoption	The study assessed the digital transformation of these cooperative banks to establish its effect on the organisation. The analysis concluded that the introduction of digital products, such as digital banking, had improved performance while increasing banks' accessibility. At the same time, the research identified technological limitations and insufficient knowledge of the new system as the major constraints that the digital transition faced, thereby slowing down the development process.
5	**Reserve Bank of India (2022)**	India	UPI, IMPS, NEFT, RTGS, Mobile Banking	The RBI report assessed the extent to which digital banking technologies have been adopted in the cooperative banks in India. The report identified significant customer interest in electronic clearing systems such as UPI, IMPS,

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				NEFT, and RTGS. The document revealed that the application of digital systems had improved the accessibility of the cooperative banking services. On the other hand, the report showed varying levels of technological application across the different banks due to inadequate infrastructure development.

6 Methodology

The present study employs a descriptive and empirical research design to examine the digital transformation of the Tamil Nadu State Cooperative Bank (TNSCB) and the District Central Cooperative Bank (DCCB). The Study relies exclusively on secondary data collected from the Digital Services of TNSC Bank & DCCB in Tamil Nadu, for the period February 2026 to March 2026. The Study focused on UPI, IMPS, NEFT, RTGS, ATM, and total digital transactions. And Statistical Tools used for Percentage Analysis, Annual Growth Rate, Trend Analysis, and Descriptive Statistics.

7 Result and Discussion

Digital Transaction Status: An Overview

The digital transaction performance of the Tamil Nadu State Cooperative Bank (TNSCB) and the District Central Cooperative Bank (DCCB) reflects the growing adoption of technology- driven banking services across the Cooperative banking network. The available data for February 2026 and March 2026 provide an opportunity to examine the recent progress in digital transactions platforms, such as payment platforms and channels. The analysis covers transaction platforms such as UPI, IMPS, NEFT, and RTGS, as well as payment channels such as ATMs, POS, E-Commerce, and Micro-ATMs. It also evaluates the transaction performance of TNSCB and all District Central Cooperative Banks during the study period.

1. Digital Transactions Status Report- An Overview of Transactions

S.no	Particulars	February 2026	March 2026
1	Transaction Platforms (UPI+IMPS+RTGS+NEFT)	1,30,20,998	1,38,31,103
2	Payment Channels (ATM+ECOM+POS+MIRO ATM)	8,11,726	6,82,559
	Total	**1,38,32,724**	**1,45,13,662**

2. Digital Transactions – in Sight – March – 2026 Tamil Nadu State Apex Coop Bank

S.no	Facility	Introduced	No.of Transactions	Volume of Transactions (Rs. In Cr)
1	RTGS	2008	4,420	27,699.56
2	NEFT	2008	77,813	2,056.65
3	ATM	2017	29,444	12.17
4	IMPS	2019	30,387	50.20
5	UPI	2022	17,76,532	286.33
6	BEPG	2023	2,572	0.85
7	POS	2018	17,063	4.61
	Total		**19,38,231**	**30,110.37**

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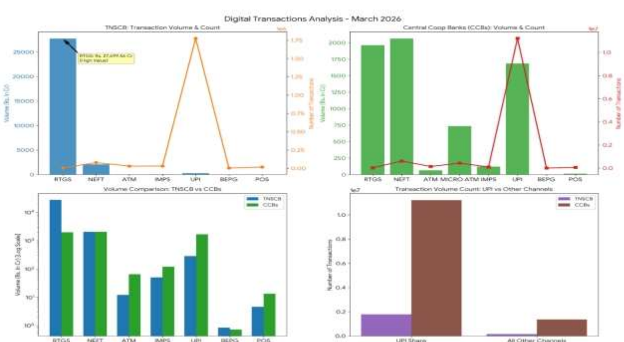
3. Central Cooperative Banks

UPI-Lite was introduced in TNSCB on 28/05/2025

S.no	**Facility**	**Introduced**	**No. of Transaction**	**Volume of Transaction (Rs. In Cr)**
1	RTGS	2014	21,272	1,964.15
2	NEFT	2014	6,09,319	2,061.16
3	ATM	2017	1,39,364	65.13
4	MICRO ATM	2021	4,30,146	732.77
5	IMPS	2019	95,724	120.04
6	UPI	2023	1,12,15,636	1,686.05
7	BEPG	2023	3,268	0.73
8	POS	2018	60,702	13.30
	Total		**1,25,75,431**	**6,643.32**



S.no	**Name of the Bank**	**February 2026**	**March 2026**	**% Growth in No.of Transactions**
1	TNSC	17,53,348	19,38,233	10.54%
2	Dharmapuri	10,84,169	11,61,086	7.09%
3	Coimbatore	9,01,123	9,72,949	7.97%
4	Tiruvannamalai	5,09,932	8,42,237	65.17%
5	Dindigul	7,92,445	8,16,955	3.09%
6	Chennai	7,56,104	7,76,938	2.76%
7	Kanchipuram	6,82,904	6,90,700	1.14%
8	Vellore	6,41,460	6,68,258	4.18%
9	Salem	6,48,756	6,65,668	2.61%
10	Madurai	5,50,919	5,79,560	5.20%
11	Tirunel Veli	4,50,478	5,54,844	23.17%
12	Villupuram	4,78,618	5,17,873	8.20%
13	Nilgiris	4,92,951	5,10,585	3.58%
14	Kumbakonam	4,58,935	4,89,073	6.57%
15	Tirchy	8,19,761	4,73,698	-42.22%
16	Erode	4,30,037	4,58,217	6.55%
17	Cuddalore	4,14,290	4,22,045	1.87%
18	Ramanathapuram	4,13,973	4,02,935	-2.67%
19	Pudukkodttai	3,76,959	3,99,659	6.02%
20	Virudhunagar	3,04,991	3,30,281	8.29%
21	Thanjavur	2,75,137	2,73,297	-0.67%
22	Thoothukudi	2,09,968	2,19,634	4.60%
23	Sivagangai	1,82,439	1,91,381	4.90%
24	Kanyakumari	2,03,027	1,57,556	-22.40%
	Total	**1,38,32,724**	**1,45,13,662**	**4.92%**
	Average	**5,76,364**	**6,04,736**	

$$\text{Percentage Growth} = \frac{\text{Current Month Transactions} - \text{Previous Month Transactions}}{\text{Previous Month Transactions}}$$

$$\frac{14513662 - 13832724}{13832724} \times 100 = 4.92\%$$

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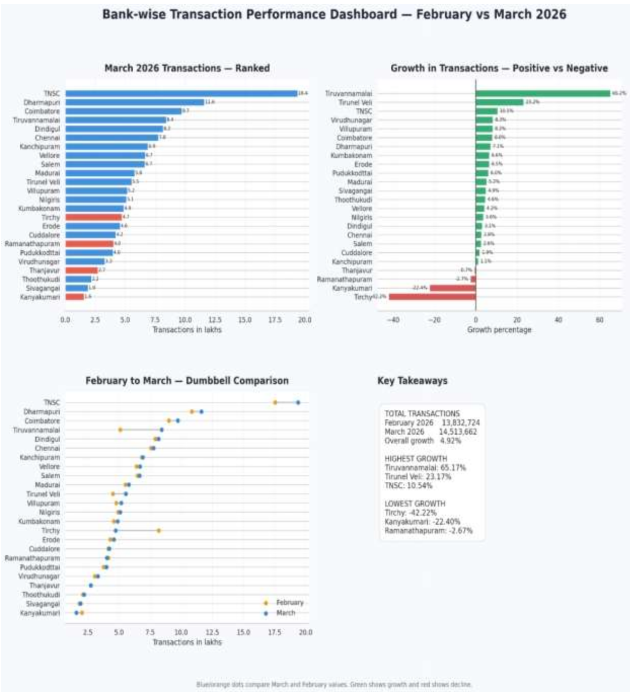

Figure 1 illustrates the total digital transactions recorded by the Tamil Nadu State Cooperative Bank (TNSCB) and District Central Cooperative Banks (DCCB) during February and March 2026. The total reached 14,513,662 in March 2026, registering an overall growth of 4.92 per cent.

S. No	Name of the DCCB	Deposits	Advances	Business	Profit
1	Chennai	4,406.52	3,562.77	7,969.29	69.69
2	Coimbatore	2,758.16	3,020.77	5,778.93	23.70
3	Cuddalore	2,323.03	2,857.32	5,180.35	19.60
4	Dharmapuri	2,767.95	4,560.99	7,328.93	29.85
5	Dindigul	1,925.08	3,520.13	5,445.21	15.28
6	Erode	3,235.75	3,575.39	6,811.14	24.20
7	Kancheepuram	3,504.15	4,385.11	7,889.27	42.00
8	Kanyakumari	1,229.41	1,628.93	2,858.34	7.27
9	Kumbakonam	1,715.11	3,689.58	5,404.69	58.99
10	Madurai	2,202.88	2,986.56	5,189.44	46.69
11	Nilgiris	766.82	1,265.80	2,032.62	13.76
12	Pudukkottai	1,134.42	1,584.33	2,718.75	15.38
13	Ramanad	1,311.30	2,228.67	3,539.97	41.18
14	Salem	5,006.71	5,943.67	10,950.38	58.37
15	Sivagangai	736.27	1,644.92	2,381.19	16.98
16	Thanjavur	1,118.77	2,570.15	3,688.92	30.15
17	Thoothukudi	1,166.57	1,737.76	2,904.33	16.31
18	Tiruchirapalli	4,063.20	6,652.01	10,715.21	87.70
19	Tirunelveli	1,238.22	2,248.30	3,486.52	16.31
20	Tiruvannamalai	1,972.74	3,056.56	5,029.30	87.70

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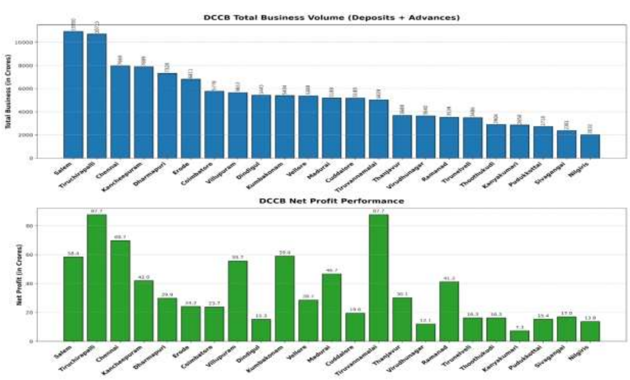
21	Vellore	2,279.12	3,101.78	5,380.90	28.66
22	Villupuram	2,143.70	3,509.84	5,653.54	55.68
23	Virudhunagar	1,646.17	1,994.19	3,640.36	12.05
	Total	**50,652.06**	**71,325.51**	**1,21,977.57**	**768.70**

Sources: Development of Legal Information System & Technology (LIST) Solution for Registrar of Cooperative Societies (RCS) Design and Development.

All 23 Central Cooperative Banks are operating profitably in the current year, and all have obtained a banking license from the Reserve Bank of India.



1. Digital Infrastructure Boost: Core Banking Solutions and online services streamlined operations, enabling all 23 DCCB to achieve 100% profitability with a net profit of ₹817.50 Cr.
2. Accelerated Loan Processing: Automated systems boosted credit flow to ₹ 71,325 Cr in advances, helping Tiruchirapalli and Tiruvanamalai lead with ₹ 87.70 Cr in profit each.
3. Massive Business Scale: Tech-driven access enabled a colossal network business volume of ₹1.22 Lakh Cr across rural and Urban Tamil Nadu.
4. Enhanced Efficiency: Modern platforms like LIST improved compliance and transparency, cutting operational costs and securing RBI license compliance across all banks.

8 Digital Transformation through TNSCB and DCCB

The Tamil Nadu State Cooperative Bank and District Central Cooperative Banks have taken significant steps toward digital transformation to modernise cooperative banking services. Digital payment modes such as UPI, IMPS, RTGS, ATM, Micro-ATM, and the Bharat Bill Payment System have been launched to provide efficient and effective services to customers. Digital transactions have made payments more customer-friendly by reducing processing time and enabling customers to conduct transactions across multiple digital platforms. This has led to a significant rise in digital transactions in Cooperative banks, signifying successful adoption and usage of technology in the day-to-day operations of the Cooperative banking system.

9 Benefits of Digital Transformation to Cooperative Bank Customers

Digital transformation has created numerous benefits for customers by providing quick, safe, and easy banking services. Customers can make fund transfers, make digital payments, pay utility bills, and access other banking services from anywhere, at any time. It has become easier for farmers, self-help groups, small-scale businesses, and other residents in Tamil Nadu to gain access to electronic banking services and products. In addition, increased use of electronic payment methods has promoted a cashless, transparent economy and improved financial inclusion in Tamil Nadu.

10 Key findings

- Total Digital Transactions During March '26: Tamil Nadu State Co-operative Bank and District Central Co-operative Bank processed a total of 145.14 lakh digital transactions during March 2026, indicating enhanced digital banking penetration in the Cooperative banking sector.
- Dominance of Electronic Payment Channels: It was observed that out of the total transactions, 138.31 lakh or 95.3 per cent were done through the four electronic payment channels - Unified Payments Interface (UPI), Immediate Payment Service (IMPS), National Electronic Funds Transfer (NEFT), and Real Time Gross Settlement (RTGS), which reflects the people's increased inclination towards electronic fund transfer.

- UPI as the Preferred Mode of Digital Payment: In March 2026, UPI was used for 129.92 lakh transactions, which is about 15.5 times more than the combined volume of NEFT, RTGS, and IMPS. This shows that UPI has gained tremendous popularity among Cooperative Bank customers as a fast and convenient mode of digital payment.

11 Conclusion

The research reveals that digital transformation has improved the operations of TNSCB and DCCB by providing digital banking services and increasing customer participation in electronic transactions. The growth rate indicates a high level of adoption of electronic payment methods and trust in electronic transactions among customers of Cooperative banks. Further improvements in digital infrastructure and customer knowledge on digital payment methods will increase financial inclusion and boost cooperative banking development in Tamil Nadu. More investments in digital infrastructure, security measures, personnel training, and customer awareness campaigns will enhance the digital ecosystem and promote the sustainability of cooperative banking in Tamil Nadu. In general, digital transformation has become a significant tool for promoting Cooperative banking through improved, customer-centric digital payment services.

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