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A Comparative and Growth-Based Classification Matrix of Primary Agricultural Credit Societies at the State Level: An Empirical Study

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Abstract

This study conducts a comparative assessment of growth & functional of PACS and Classification of states based on CAGR and Membership of different states of Primary Cooperative Credit Societies (PCCSs) across selected Indian states using quantitative secondary data from the NAfscob.org website for the period 2013-14 to 2023-24, i.e., for 10 years, and ranking based on increase of PACS, Membership based CAGR, Dormant and Defunct PACS. The study primarily uses PACS performance data from NAfscob.org, Cooperatives.com, and other sources, including NABARD and the Reserve Bank of India (RBI) Report. This study aims to deliver a quantitative, comparative, and empirical analysis of the performance of primary agricultural credit societies across Indian states, facilitating the identification of strengths and weaknesses among states on different parameters. An overall ranking, composite performance index, and ratio analysis are applied to compare state-level performance. Our Study Findings suggest that significant interstate variations are due to factors such as unequal state growth, population, land area, economic development, rural credit demand, governance quality, and policy support. The study provides policy recommendations to policymakers and states to improve average- and worst-performing PACS, based on PACS performance by state.

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1. Introduction: The co-operative banks in India play a vital role in rural financing. These are registered under the Cooperative Societies Act and also regulated by the RBI. PACS are governed and managed as per the "Banking Regulation Act 1949" and the Banking Laws (Co-operative Societies) Act 1965. A co-operative credit society, commonly known as the Primary Agricultural Co-operative Society (PACS), is the central, visible face of the cooperative movement in India. (Yashoda, 2017). The PACS operate at the grassroots level and play a vital role in the rural credit system. They supply short- and medium-term loans to rural people to meet their financial requirements.

The main objective of cooperative credit is to increase credit productivity and protect farmers from the exploitative tentacles of moneylenders and non-institutional sources of credit. Credit is incredibly vital to agriculture. India has only a 4-month rainy season. During that time, credit played a major role in agricultural development. Based on farmers' economic backgrounds, no one will be willing to provide credit. There is no guarantee the farmer will repay the loan because agricultural income is uncertain. In this situation, a farmer can obtain credit from the primary agricultural credit co-operative society. These societies are working for farmers, by the farmers. After the enactment of the Co-operative Societies Act in 1912, non-credit co-operative societies were permitted to register. These societies are affiliated with the District Central Co-operative banks, which, in turn, are affiliated with the State Co-operative banks. It serves as the final link between the ultimate borrowers, on the one hand, and higher financial agencies, namely the RBI/NABARD, on the other hand. According to statistics from the National Federation of State Cooperative Banks (NAFSCOB, 2024), the three-tier structure comprises 107,64 Primary Agricultural Credit Societies, 351 District Central Cooperative Banks (DCCBs), and 33 State Cooperative Banks (SCBs). The Primary Agriculture Cooperative Credit Society plays an unparalleled role in short-term credit. Although many other alternatives provide short-term credit to farmers, PACS remain the most preferred agency among them. But PACS face many problems, including mounting overdue balances, inadequate capital, and a shortage of trained staff. So far, studies on the performance of PACSs are very limited and have not shed light on the multifacets of the problem. It is therefore essential to assess PACS' past performance to formulate various financial policies and reform the current structure.

1.2. Study Objectives: The major objectives are:

1. To assess the growth of PACS over the last 10 years based on an increase in the number of across-state.
2. To make a comparative analysis of growth in the number of PACS across various indian states.
3. To identify high-performing and low-performing states based on the number of PACS and the number of members of PACS, and give them a ranking.
4. To classify various states based on the State Classification Matrix based on the CAGR of PACS and Member Base

2. Literature Review: In 1904, the cooperative movement first emerged in India. The main motive behind the establishment of these societies is to relieve the rural population of the burden of repaying loans and to promote savings among them. The rural credit system has many issues in both pre-independence and post-independence periods. Several committees and numerous reports on the creditworthiness of rulers have been published to date. The Royal Commission on Agriculture (1928) clearly stated that there is no alternative to credit societies at the village level.

The most significant and harmful effect of unpaid/Overdue debt, as stated by Agarwal, Puhazhendhi, and Satyasai (1997), is that most farmers who are still not covered by formal & institutional credit struggle to access available credit.

Anil S. Memane (2012) studied the performance of Primary Agriculture Co-operative Societies in India during 2000-01 to 2009-10. He observed that the Agriculture Co-operative Credit societies are working positively. Though the number of societies has declined, the total number of members has increased over the ten years from 2000-01 to 2009-10. A significant finding was that SC membership increased rapidly over the decade. The increasing number of members in Primary Agriculture Co-operative credit societies indicates that farmers are becoming aware of these societies, their benefits, and are motivated to join. So, the total number of members increased by 8.13 per cent from 2001-02 to 2009-10, respectively. Though it is not significant, it shows farmers a positive attitude toward the PACS.

K. Sudhakara Rao (2016) Performance Of Primary Agricultural Credit Societies (PACS) In India And Andhra Pradesh. In his study, he observed that the Western region has the maximum number of PACS. More than 50 per cent of the total PACS are from Eastern and Western regions. At the same time, the PACS in the North-Eastern region have had the fewest. The working capital of the Central, Eastern, North-Eastern, Northern, and Western regions was low due to a low deposit base compared to the large volume of borrowings.

Mohit Kumar and Mehta, V.P. (2018) studied the Performance and Prospects of Primary Agricultural Credit Societies (PACS) in Haryana during 2000-01 to 2014-15. They concluded that there is a sharp reduction in the number of PACS, with an average compounded growth rate of 11.93 per cent over the study period. The Membership, paid-up share capital, deposits, and working capital have increased over the study period. Every district showed a negative percentage change in the number of PACS. The share of owned funds in total working capital was very small. A higher credit deposit ratio indicates that more loans are being advanced than deposits are being received. Deposits have increased significantly over the study period in Haryana, but their share in working capital has been quite low. The number of profitable PACS decreased, while the number of loss-making PACS increased over the period.

However, there is very limited empirical research that provides a comparative picture of PACS numbers, members, dormant, defunct, viable, and potentially viable PACS across several Indian states, and ranking-based analysis and categorisation of states based on it. This research addresses the problem by using standard metrics across states, enabling reliable comparisons.

3. Data Sources and Methodology:

3.1 Data Source: The data used for the study are mainly collected from the nafscob.org website, specifically the PACS performance data directory covering the previous 10 years, from 2014-14 to 2023-24.

3.2 Performance Indicators:

3.3 Analytical Tools: Descriptive statistics, Ratio analysis, Ranking based on CAGR, Classification.

3.4. Hypotheses: The main Hypotheses are:

H0: There is no significant difference between the states in the growth of PACS membership across Indian states.

H1: There are significant interstate differences in the performance of PCCSs growth of PACS membership.

H0: There is no significant difference between the states in the growth of the number of PACS across Indian states.

H1: There are significant interstate differences in the growth of the number of PACS.

4. Results and Discussion: Primary Agricultural Credit Societies (PACS) serve as the foundation of the short-term cooperative credit structure in India. Operating at the gram panchayat and village levels, PACS act as the critical bridge connecting rural borrowers—primarily small and marginal farmers—with district central cooperative banks (DCCBs), state cooperative banks (StCBs), and NABARD.

Table–1: Ranking Based on Increase in Number of PACS							
TOP 5 STATES				BOTTOM 5 STATES			
S. N	**State**	**CAGR**	**Ranking**	**S.N**	**State**	**CAGR**	**Ranking**
1	Telangana	0.971	I	1	Kerala	-0.001	V
2	Nagaland	0.160	II	2	Uttarakhand	-0.009	IV
3	Meghalaya	0.147	III	3	Jammu And Kashmir	-0.015	III
4	Punjab	0.095	IV	4	Andhra Pradesh	-0.031	II
5	Manipur	0.068	V	5	Mizoram	-0.034	I

An increase in the number of PACS indicates improved rural credit, more beneficiaries, an expanded cooperative banking structure, greater rural financial inclusion, government support & reform, greater trust in the cooperative structure, digitisation, and greater outreach. CAGR ranking based on PACS shows which states are expanding at faster rates and which are expanding more slowly; a negative CAGR indicates a downward trend in the number, meaning a decrease in PACS. A negative CAGR trend may be due to closures, poor performance, mergers & acquisitions between PACS and other alternative banking structures, or policy restructuring. Of the 30 states, 25 have positive CAGRs, and 5 have negative CAGRs. Telangana has topped in terms of the increase in PACS CAGR due to its separation from Andhra Pradesh; similarly, Andhra Pradesh has a negative CAGR because of Telangana's separation. Jammu & Kashmir is the only state with a negative CAGR in the number of PACS, but it ranked 5th in terms of CAGR for the increase in PACS members.

Table–2: Ranking Based on Increase in the Number of Members of the Society							
Top 5 States				Bottom 5 States			
S.N	State	CAGR	Ranking	S.N	State	CAGR	Ranking
1	Telangana	1.20	I	1	Manipur	-0.029	V
2	Sikkim	0.99	II	2	Chandigarh	-0.051	IV
3	Punjab	0.16	III	3	Andhra Pradesh	-0.066	III
4	Rajasthan	0.08	IV	4	Nagaland	-0.092	II
5	Jammu And Kashmir	0.08	V	5	Uttarakhand	-0.195	I

The members of the Primary Agricultural Credit Society (PACS) are generally farmers who join to access credit, agricultural inputs, and other services. Hence, an increase in the number of members indicates more beneficiaries. The combined CAGR of the number of members across all states is 0.03058 (3.058%) over the past 10 years. Of the 33 states, 17 have positive CAGRs in the number of members, 10 have negative CAGRs, and the remaining 6 cannot be calculated due to data shortages. Some states are performing better and have increased the overall average, but most are below it. Telangana has topped the CAGR ranking due to its separation from Andhra Pradesh in 2014. In Sikkim, there has been tremendous growth in the number of members over the past 3 years due to the development of agribusiness, the computerisation of PACS, and Special support from NABARD and the Union Government.

Viable PACS are financially sound and operationally strong. The analysis of the percentage of Viable and Potentially Viable PACS over the past ten years shows significant variation across states. Among the Viable PACS, Bihar ranks first with 100%, indicating that all PACS in the state are financially sound and operationally strong. It is followed by Tripura, Assam, Kerala, and Punjab, all of which show a very high percentage of viable PACS. This reflects strong cooperative performance, better financial management, and effective rural credit delivery systems in these states. Of the 33 states, 22 have positive CAGRs, indicating that the number of viable PACS has increased, reflecting continued efforts to grow PACS. Balance 5 has a negative CAGR, indicating that the number of viable PACS has decreased over the past 10 years (a negative trend).

4 has a zero CAGR, meaning no growth in viable PACS, and for the remaining 2 states, the CAGR cannot be calculated due to data shortage.

Table–3: Percentage of Vaible and Potentially Vaible PACS of Total PACS based on Past 10 Year Data

Vaible PACS				Potentially viable PACS			
S.N	State	Percentage	Ranking	S.N	State	Percentage	Ranking
1	Bihar	100.000	I	1	Pondicherry	31.887	I
2	Tripura	94.851	II	2	Gujarat	31.258	II
3	Assam	92.559	III	3	West Bengal	30.371	III
4	Kerala	91.809	IV	4	Himachal Pradesh	27.050	IV
5	Punjab	88.170	V	5	Tamil Nadu	26.635	V

In case of potentially viable PACS, Puducherry has the highest CAGR, followed by Gujarat, West Bengal, Himachal Pradesh, and Tamil Nadu, which ranks 5th. A higher percentage of potentially viable PACS suggests that, while these states are not currently fully strong, they have the capacity to become viable through financial restructuring, improved recovery performance, and better management practices.

Overall, the data indicate that some states have achieved strong financial sustainability in their PACS network. In contrast, others require policy support, reforms, and institutional strengthening to convert potentially viable PACS into fully viable ones. The long-term stability of the cooperative credit structure depends not only on the number of PACS but also on their financial health, recovery performance, and operational efficiency.

Table–4: Ranking Based on Dormant and Defunct PACS

TOP 5 STATES (Dormant PACS)				TOP 5 STATES (Defunct PACS)			
S.N	State	Average	Ranking	S.N	State	Average	Ranking
1	West Bengal	574.0	I	1	West Bengal	409.8	I
2	Gujarat	472.5	II	2	Nagaland	227.4	II
3	Nagaland	393.0	III	3	Gujarat	210.2	III
4	Uttar Pradesh	382.0	IV	4	Uttar Pradesh	163.0	IV
5	Maharashtra	189.8	V	5	Maharashtra	154.1	V

Dormant PACS exist and are legally registered but are currently non-operative, which may be due to not operating as usual because they aren't making enough money, insufficient member participation, governance problems, or other issues. Restructuring, financial support, improved administration, or greater member involvement can bring them back to life. Dormancy simply means not doing anything, but also not closing. According to Table 4 in the Dormant PACS category, West Bengal ranks first, with the highest average of 574 PACS, indicating a substantial number of inactive societies that require revival measures. Gujarat and Nagaland follow in second and third positions, respectively, reflecting moderate levels of dormancy. Uttar Pradesh and Maharashtra complete the top five, though with comparatively lower averages. Assam, Bihar, Chhattisgarh, and Tripura have had zero dormant PACS over the last 10 years, demonstrating their efforts to operate PACS successfully. 18 states have less than 50 dormant PACS.

Defunct societies are non-operational in the long term; they are either closed, in the process of liquidation, undergoing cancellation of registration, or formally closed, often because they have lost substantial membership, funds, or the capacity to operate their business.

Table–5: Percentage of Dormant & Defunct PACS of Total PACS based on Past 10 Year Data

S.N	State	Percent	Ranking
1	GOA	23.85	I
2	CHANDIGARH	23.53	II
3	WEST BENGAL	13.28	III
4	PONDICHERRY	13.21	IV
5	MEGHALAYA	8.91	V

Considering Table 4, if you look closely, both the TOP 5 states in dormant and defunct are the same, except for their rankings. Only 5 top 5 states have defunct PACS; more than 100 of the rest have fewer than 100; again, Assam, Bihar, Chhattisgarh, and Tripura have had zero defunct PACS over the last 10 years, demonstrating their efforts to operate PACS successfully. 18 states have less than 50 dormant PACS.

If we look both dormant and defunct pacs togather as per table 6, for FY 23-24, Goa has ranked as number 1 with approximately 24% of Total PACS in the state has been on the verge of closing, followed by Chandigarh, West Bengal, Pondcherry and Meghalaya this indicates a very bad operation in this states however Andaman And Nicobar, Assam, Bihar, Chattisgarh, Haryana, Mizoram, Nagaland and Tripura has nil dormant and defunct PACS as per FY23-24.

In contrast, the ranking for Defunct PACS shows a slightly different pattern in Table 4; the top states remain the same, but the ranking order changes. But if we look at Table 5, the pattern has completely changed, and, except for West Bengal, the top 5 states ranked for FY23-24 remain the same. This means that table 4 scenarios are changing very fast, and table 4 states are becoming successful in the effective operation of PACS over the last 9 years.

Now, we will categorise and evaluate states based on PACS growth, measured by member base and CAGR. so that an appropriate decision can be taken. State Classification Matrix Based on CAGR of PACS and Member Base

- CAGR (PACS) Mean = 0.03058930658
- Mean (Membership) = 470,254
- Leaders = High CAGR & Large Membership
- Emerging = High CAGR & Low Membership
- Saturated = Low CAGR & Large Membership
- Lagging = Low CAGR & Low Membership

The annual growth of PACS members is capitalising on 10 years of data from 30 states, and, based on PACS CAGR and membership, a state classification matrix is constructed, which shows clear comparative growth dynamics and scale across the states. The Mean CAGR and Membership for all the states is 3.06% and 470,254, respectively.

Table–7: Primary Agricultural Credit Societies at the State Level

Leader	Emerging	Saturated	Lagging
Sikkim Rajasthan Kerala	Telangana Punjab Jammu and Kashmir Tripura Goa	Orissa Tamil Nadu Karnataka Bihar Madhya Pradesh West Bengal Maharashtra Andhra Pradesh	Meghalaya Andaman and Nicobar Chhattisgarh Pondicherry Assam Uttar Pradesh Himachal Pradesh Gujarat Arunachal Pradesh Haryana Manipur Chandigarh Nagaland Uttarakhand

On comparing Mean CAGR and Membership with the states' CAGRs and Means, the States are categorised into four strategic categories: Leaders, Emerging, Saturated, and Lagging, highlighting their performance and outreach levels.

Leading states such as Sikkim, Rajasthan, and Kerala show strong growth alongside large membership bases. These states reflect an optimal balance of expansion and penetration, indicating effective cooperative management, outreach, and sustainability. They are examples of benchmarks for best practices and scalable cooperative models.

Emerging states, including Telangana, Punjab, Jammu and Kashmir, Tripura, and Goa, show high growth but relatively smaller membership bases. These states have ample room for development. They can move up to the Leader category soon if they improve their infrastructure and strategically attract new members.

Saturated states such as Odisha, Tamil Nadu, Karnataka, Bihar, Madhya Pradesh, West Bengal, Maharashtra, and Andhra Pradesh possess large membership bases but relatively lower growth rates. Slow CAGR and high membership suggest that the market has reached maturity or is facing structural problems. Policies that emphasise innovation, digitisation, and operational efficiency could boost growth.

Lagging states, including Meghalaya, Assam, Chhattisgarh, Uttar Pradesh, Haryana, Uttarakhand, and Nagaland, are among those falling behind, with smaller membership bases and low growth rates. To improve the cooperative ecosystems in these areas, it may be necessary to implement governance reforms, financial inclusion policies, awareness campaigns, and targeted institutional support.

In a nutshell, the matrix shows PACS development across states at varying rates. Some states are performing very well and growing at higher rates, while others are not, and they need to focus on strategic policies to boost growth and membership outreach. Achieving balanced, inclusive growth in the cooperative sector at the national level would require a range of development strategies tailored to each state.

Conclusion: Based on the analysis conducted and the results shown in Tables 1 to 5, we conclude that there are significant differences among the states in PACS growth, including the number of Primary Cooperative Credit Societies, Dormant PACS, Defunct PACS, Membership, Viable PACS, and potentially viable PACS. If we have to choose the best state based on all the above criteria, then Bihar is the best choice because it has 100% viable PACS, 0 Dormant PACS, 0 Defunct PACS, a large membership, and a balanced CAGR. Future research could explore micro-level determinants using performance, credit facility, computerisation, etc., as bases, based on primary data.

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