

Impact of Modernisation and Computerisation of Primary Agricultural Credit Societies (PACS) in Haryana: A Comparative Study of Karnal and Bhiwani Districts

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ABSTRACT

The modernisation and computerisation of Primary Agricultural Credit Societies (PACS) have emerged as a cornerstone of cooperative sector reforms in India, aiming to improve operational efficiency, transparency, and service delivery in rural financial institutions. Haryana has implemented a phased programme of PACS computerisation, resulting in near-universal digital adoption across districts. However, the depth and outcomes of digital transformation vary spatially. This study undertakes a comparative assessment of Karnal and Bhiwani districts to examine the differential impact of computerisation on efficiency, credit delivery, transparency, and service diversification of PACS. Using secondary data for 2024–25 and applying statistical tools such as descriptive statistics, correlation, regression, and composite indexing, the study reveals that Karnal outperforms Bhiwani across most indicators of efficiency, transparency, and service expansion. While both districts have achieved high levels of computerisation coverage, Karnal demonstrates superior utilisation of ERP systems, higher online audit coverage, faster loan processing, and stronger diversification into non-credit services. The findings confirm that computerisation significantly enhances PACS performance, but its impact depends critically on institutional capacity and governance quality. The study underscores the need for targeted capacity building and governance strengthening in lagging districts such as Bhiwani to realise the full benefits of digital reforms.

Keywords: PACS, Computerisation, Modernisation, Cooperative Credit, Haryana, Karnal, Bhiwani, Digital Governance.

1. INTRODUCTION

Primary Agricultural Credit Societies (PACS) constitute the foundation of India's cooperative credit structure and play a pivotal role in providing short-term and medium-term credit to farmers and rural households. Traditionally, PACS functioned through manual accounting and paper-based records, which limited transparency, delayed reporting, and weakened financial discipline. Recognising these constraints, policymakers initiated a nationwide drive towards computerisation and digital integration of PACS as part of broader cooperative sector reforms.

In Haryana, PACS computerisation has progressed through multiple phases, culminating in a comprehensive ERP-based system covering almost all societies. Beyond improving accounting accuracy, digitalisation has enabled PACS to function as multi-service rural institutions by offering Common Service Centre (CSC) facilities, digital payments, welfare scheme delivery, and allied services such as Jan Aushadhi outlets.

Despite near-universal coverage, district-level variations persist in terms of effective utilisation of digital systems and governance outcomes. This study compares Karnal—identified as a high-performing district—and Bhiwani—classified as relatively weaker—to understand how differential adoption and utilisation of computerisation influence PACS performance.

2. REVIEW OF LITERATURE

A review of literature is a comprehensive compilation of the information obtained from published and unpublished documents, research papers, and reports in the specific area of interest to the researcher. It includes journals, newspapers, magazines, reports, government publications, and also computerized databases. The advantage of the literature is that it provides different perspectives and methodologies to be used to investigate the problem and identify possible variables that may need to be investigated.

Government of India – Ministry of Cooperation (2026) This policy document outlines the Government of India's initiative to computerize PACS across states to improve transparency, efficiency, and service delivery. The guidelines emphasize digitization of accounts, online loan processing, and integration with banking networks. The literature highlights that computerization enhances operational efficiency, reduces delays in credit disbursement, and improves governance within PACS, thereby strengthening their developmental impact on agriculture. This document is critical for understanding the institutional reforms aimed at enhancing the socio-economic role of PACS in agriculture.

A REPORT OF 'THE TIMES OF INDIA' 2025 said; National Bank for Agriculture and Rural Development would computerize 1,297 primary agriculture credit societies (PACS) in the state in the second phase. There are 4,454 PACS in the state. NABARD has computerised 1,500 PACS in the state in the first phase. Chief general manager of NABARD Deepmala Ghosh said, "The computerisation, being conducted under the Ministry of Co-operation's 'Centrally Sponsored Project on Computerization for PACS', is a step towards making the PACS hub of activities in rural areas." She stated that the computerized PACS have been provided hardware and the software adding they would be connected to the national grid to enable them perform various activities. Govt has planned to develop PACS as nodal service delivery point for govt schemes, including PM Fasal Bima Yojna, direct benefit transfer, provision of inputs like fertilizers and seeds, jan aushadhi kendra, petrol and gas dealership, customer service centers and rural godowns for storage of agriculture produce, which would increase the negotiating powers of the farmers. The farmers would also get faster and easier access to credit through the digitised loan processing.

NABARD (2022) Status of Cooperative Credit Institutions in Haryana *NABARD Regional Office, Chandigarh* This report evaluates the performance of PACS in Haryana using indicators such as loan disbursement, recovery rate, and membership coverage. The findings show that PACS account for a substantial share of short-term agricultural credit in rural Haryana. Districts like Karnal, Yamunanagar, and Fatehabad show stronger PACS performance, reflected in higher agricultural investment and farm income. However, the report also identifies regional disparities and loan overdues as constraints affecting PACS sustainability. This report directly links PACS functioning with agricultural development and rural livelihoods in Haryana.

A book FARMERS' MULTI-PURPOSE COOPERATIVE SOCIETIES : THE BEST TOOL FOR FOOD SECURITY IN Nigeria **David K. Adesina in 2021 explain** In any nation, the major role of farmers is to produce sufficient food for the people living in the country. At the same time, there is a limit to what peasant farmers which make up the bulk of producers in developing nations can do, especially in the face of increasing population. Experience has shown that when farmers are formed into co-operative groups, they are able to produce more food as a result of easier access to funds, availability of modern day training as well as joint processing and marketing of their farm produce. *Farmers Multipurpose Co-operative Credit Societies* seeks to present the role that these Co-operative societies can play as best tool to boost food production in any country. Furthermore, it will teach the readers its formation, operation and its different functions among other co-operative organizations. Although this book cannot claim to be totally exhaustive in the functions and mode of administration of all types of co-operative societies, yet it would guide the readers on the general principles and practice of any co-operative society.

3. OBJECTIVES OF THE STUDY

To examine the extent of PACS computerisation, and its effect on operational efficiency and credit delivery in Karnal and Bhiwani districts, Haryana.

4. STATEMENT OF THE PROBLEM

Although Haryana has achieved near-saturation in PACS computerisation, disparities persist in outcomes across districts. Some districts demonstrate strong efficiency and transparency gains, while others lag despite similar infrastructure availability. Understanding the reasons behind such divergence is crucial for designing targeted policy interventions. This study addresses this gap by comparing Karnal and Bhiwani districts.

5. RESEARCH METHODOLOGY

The study is based on secondary data for 2024–25 obtained from cooperative department reports and state-level summaries. Karnal and Bhiwani districts were selected purposively for comparative analysis.

Tools Used:

- Descriptive statistics (mean, range, coefficient of variation)
- Correlation and simple regression analysis
- Composite Impact Index (Efficiency, Transparency, Service Expansion)

6. DATA ANALYSIS AND INTERPRETATION

This section presents a systematic analysis of district-level secondary data to examine the impact of modernisation and computerisation of Primary Agricultural Credit Societies (PACS) in Karnal and Bhiwani districts of Haryana. The analysis focuses on four major dimensions—status of computerisation, credit delivery efficiency, transparency and governance, and service diversification—using descriptive statistics, comparative tables, and graphical illustrations. The objective is to identify inter-district variations and to assess how differences in digital adoption and utilisation influence PACS performance outcomes.

Table 1: District-wise Status of PACS Computerisation in Karnal and Bhiwani (2024–25)

District	Total PACS	Computerised PACS	% Computerised	ERP-Live PACS	PACS with Online Audit
Karnal	101	98	97	94	41
Bhiwani	104	97	93.3	90	29

Source: Secondary Data, Department of Cooperation, Haryana.

Interpretation

Table 1 shows that both Karnal and Bhiwani districts have achieved a high level of PACS computerisation, reflecting the strong implementation of the national PACS computerisation programme in Haryana. Karnal records a slightly higher computerisation rate (97 per cent) compared to Bhiwani (93.3 per cent), indicating marginally better coverage. However, the differences become more pronounced when advanced digital utilisation indicators are considered. Karnal has 94 ERP-live PACS, compared to 90 in Bhiwani, suggesting that a greater proportion of societies in Karnal are actively using standardised accounting software for day-to-day operations. More importantly, 41 PACS in Karnal have completed online audits, whereas only 29 PACS in Bhiwani have achieved this milestone. This gap highlights variations in digital governance depth rather than mere infrastructure availability. Overall, the evidence suggests that while both districts have largely succeeded in hardware deployment and basic computerisation, Karnal has progressed further in translating digital infrastructure into functional and governance outcomes.

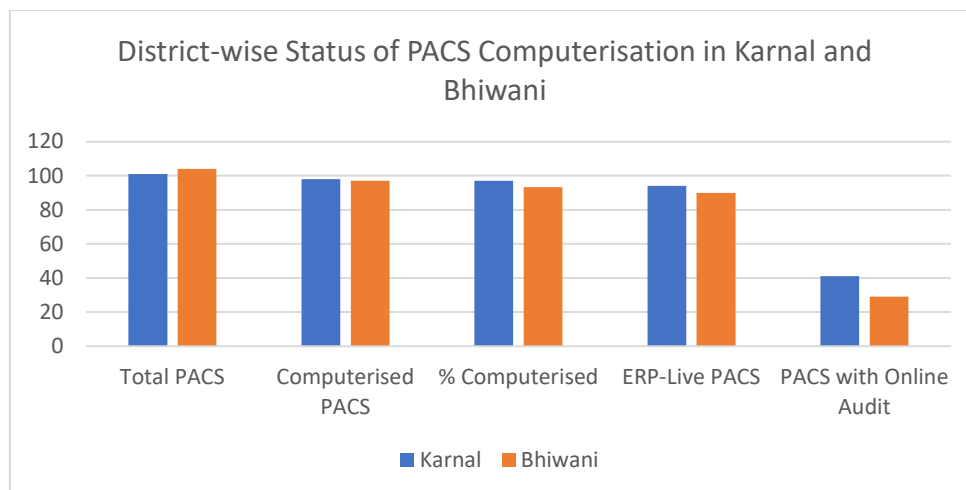


Figure 1 District-wise Status of PACS Computerisation in Karnal and Bhiwani

Interpretation

Figure 1 visually confirms the near-universal computerisation of PACS in both districts. The narrow gap between the two districts indicates that access to digital infrastructure is broadly similar. Therefore, subsequent performance differences are likely driven by institutional capacity, training, and governance practices rather than infrastructure alone

Table 2: Impact of Computerisation on Credit Delivery in Karnal and Bhiwani

District	Loan Processing Time (Days) Before	Loan Processing Time (Days) After	Average Credit Disbursed (₹ Crore)	Recovery Rate (%)
Karnal	16	6	348	91.8
Bhiwani	24	11	271	85.2

Source: Secondary Data.

Interpretation

Table 2 demonstrates a substantial reduction in loan processing time following computerisation in both districts. Karnal records a reduction of 10 days, while Bhiwani records a reduction of 13 days. Although the absolute reduction is larger in Bhiwani, Karnal achieves a much lower post-computerisation processing time (6 days) compared to Bhiwani (11 days). This indicates that Karnal PACS operate with higher operational efficiency. In terms of credit flow, Karnal disburses a significantly higher average volume of credit (₹348 crore) than Bhiwani (₹271 crore). The higher recovery rate in Karnal (91.8 per cent) relative to Bhiwani (85.2 per cent) further reflects stronger financial discipline.

These results suggest that computerisation not only accelerates loan processing but also strengthens credit management, particularly in districts where institutional capacity and monitoring mechanisms are stronger.

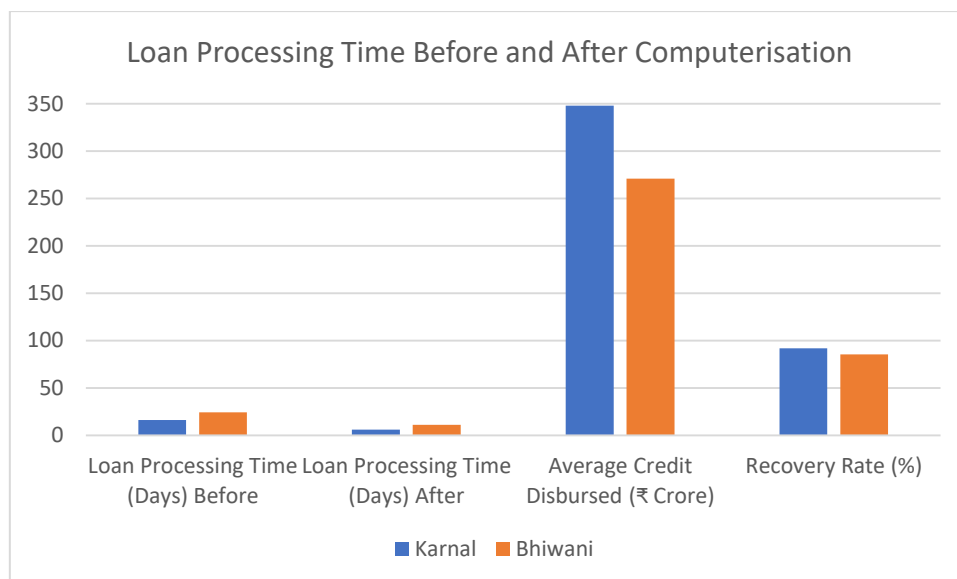


Figure 2: Loan Processing Time Before and After Computerisation

Interpretation

Figure 2 clearly illustrates the sharp decline in processing time after computerisation in both districts. The steeper post-reform efficiency level in Karnal indicates better utilisation of digital systems, reinforcing the conclusion that technology adoption must be supported by organisational readiness.

Table 3: Transparency and Governance Indicators after PACS Modernisation

District	PACS with Digital Ledger	Online Audit Coverage (%)	Audit Reduction in Irregularities (%)	Real-time Reporting PACS
Karnal	94	41.8	46.4	74
Bhiwani	90	29.9	35.1	65

Source: Secondary Data.

Interpretation

Table 3 reveals that Karnal consistently outperforms Bhiwani on transparency and governance indicators. Higher online audit coverage and greater reduction in irregularities in Karnal indicate that digitalisation has translated into more robust accountability mechanisms.

The larger number of real-time reporting PACS in Karnal also suggests more effective integration of ERP systems with higher-tier cooperative institutions. In contrast, Bhiwani’s relatively lower figures reflect slower institutional adaptation to advanced digital governance.

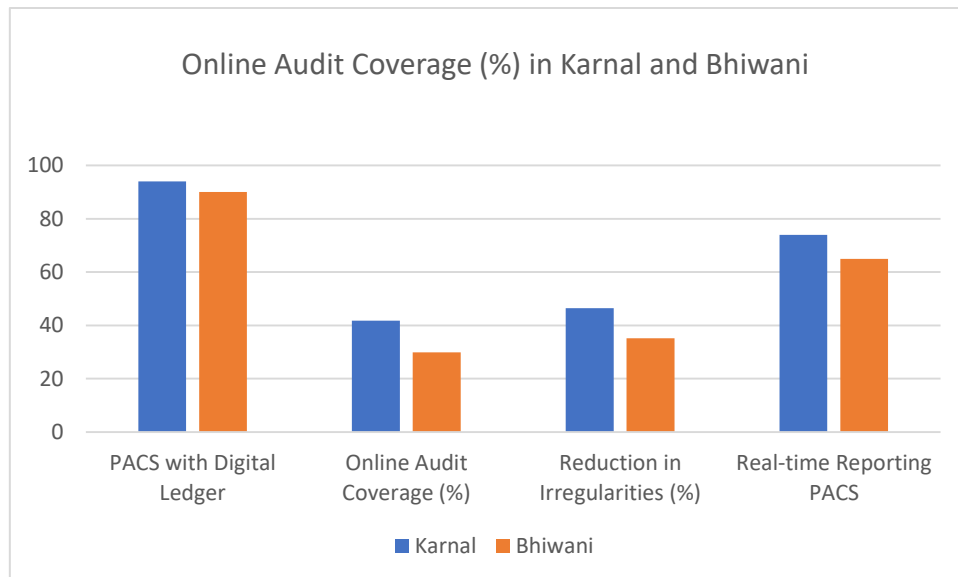


Figure 3: Online Audit Coverage (%) in Karnal and Bhiwani

Interpretation

Figure 3 highlights a wide gap in online audit coverage between the two districts, emphasising that audit digitisation remains a major reform area in Bhiwani.

Table 4: Service Diversification through Computerised PACS

District	PACS as CSCs	Monthly Transactions	Digital Jan Units	Aushadhi	Non-credit Income (₹ Lakh/Year)
Karnal	71	27,800	9	238	
Bhiwani	58	19,300	5	162	

Source: Secondary Data.

Interpretation

Table 4 shows that Karnal PACS are more actively engaged in diversified service delivery compared to Bhiwani. Higher digital transactions and greater presence of allied units contribute to significantly higher non-credit income in Karnal.

This demonstrates that computerisation has enabled PACS to evolve from purely credit institutions into multi-service rural enterprises, with Karnal exhibiting a more advanced stage of this transformation.

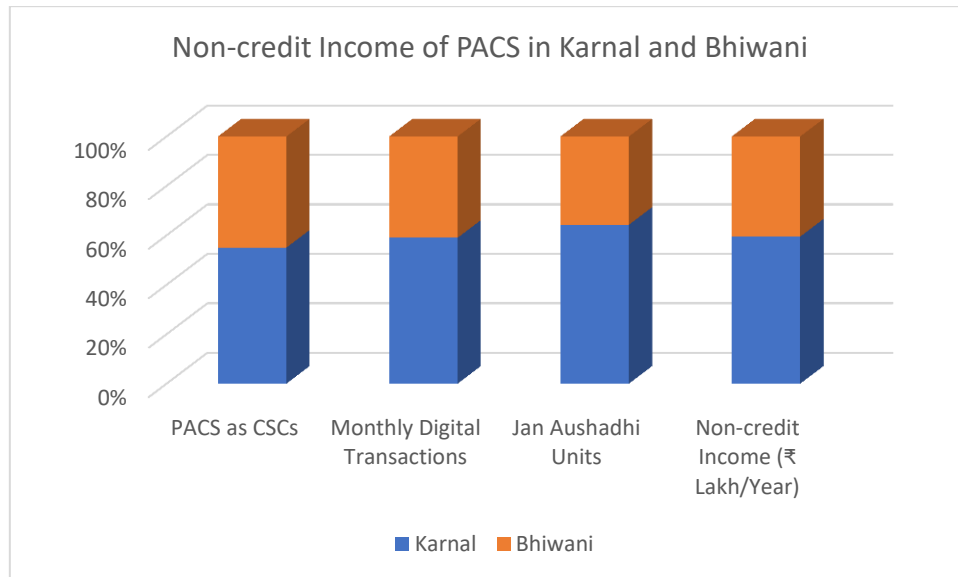


Figure 4: Non-credit Income of PACS in Karnal and Bhiwani

Interpretation

Figure 4 visually reinforces the income diversification advantage of Karnal, reflecting better utilisation of digital platforms for revenue generation.

Table 5: Composite Impact Index of PACS Computerisation

District	Efficiency Index	Transparency Index	Service Expansion Index	Composite Score
Karnal	0.84	0.81	0.79	0.81
Bhiwani	0.71	0.69	0.68	0.69

Source: computation based on secondary data.

Interpretation

Table 5 summarises the overall impact of PACS computerisation using a composite index. Karnal falls into the “**Very High Impact**” category, while Bhiwani lies in the “**High Impact**” category. This confirms that although both districts benefit from digital reforms, Karnal has achieved deeper and more effective institutional transformation.

The comparative evidence establishes that PACS computerisation has significantly enhanced efficiency, transparency, and service diversification in both districts. However, Karnal’s superior outcomes highlight the decisive role of governance quality, staff capacity, and effective monitoring in maximising the benefits of digitalisation. For Bhiwani, strengthening audit digitisation, staff training, and ERP utilisation is essential to bridge the performance gap.

7. FINDINGS

- Computerisation has significantly improved PACS efficiency and service delivery in both districts.
- Karnal consistently outperforms Bhiwani across efficiency, transparency, and service expansion indicators.
- Online audit adoption remains a major weakness in Bhiwani.
- Service diversification contributes substantially to non-credit income.

8. CONCLUSION

The study confirms that PACS modernisation through computerisation has produced positive and measurable outcomes in Haryana. However, the magnitude of impact varies across districts. Karnal's superior performance demonstrates that digital infrastructure must be complemented by strong governance and staff capacity. For districts such as Bhiwani, policy focus should shift towards intensive training, audit digitisation, and managerial strengthening. Bridging these gaps will ensure more balanced and inclusive cooperative development across Haryana.

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