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The Role Of Cooperative Banks In Agricultural Finance

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Abstract: This study critically examines the contribution of cooperative banks in enhancing farmers' awareness of agricultural development schemes and in delivering effective financial services in the districts of Chamarajanagara and Mysore. Emphasis is placed on understanding the extent to which farmers are informed about government-sponsored initiatives through cooperative banks and their level of satisfaction with the services received. Findings indicate that while cooperative banks are deeply embedded in the rural financial landscape, challenges such as inconsistent communication, low outreach among disadvantaged groups, and procedural delays hinder the full realization of their benefits. Many farmers report limited knowledge of available schemes, particularly in low-income and less-educated segments, pointing to a gap in targeted awareness efforts. Additionally, while the proximity and familiarity of cooperative banks contribute to trust, service inefficiencies—like delayed loan disbursal and inadequate staff responsiveness—impact overall satisfaction. The study concludes that to maximize their role in rural development, cooperative banks must adopt more inclusive outreach programs, strengthen service quality, and build staff capacities to better serve the evolving needs of the farming community.

Keywords -Cooperative banks, agricultural finance, rural credit, Mysore, Chamarajanagara, farmer satisfaction, loan accessibility, financial inclusion, mean

1. INTRODUCTION

Agriculture continues to be a critical sector in India, supporting over 54% of the population and contributing around 18.3% to the national GDP (Economic Survey 2023–24). However, access to timely and affordable credit remains a key barrier for small and marginal farmers. Cooperative banks serve as an important financial backbone for rural communities, offering credit, savings, and support services tailored to agricultural needs. Their localized presence and member-driven approach allow them to reach underserved farmers more effectively than many commercial institutions. In the districts of Mysore and Chamarajanagara, cooperative banks play a significant role in financing agricultural operations, particularly among middle-aged and lower-income farming populations. Despite their importance, issues such as procedural delays, limited awareness of schemes, inadequate training, and inconsistent staff support reduce their effectiveness. This study aims to assess the performance of cooperative banks in agricultural finance through a structured analysis of responses from 400 farmers. It focuses on key aspects like loan accessibility, service quality, financial adequacy, and awareness, offering insights for policy improvements and stronger rural financial inclusion.

2. CONCEPTUAL FRAMEWORK

Cooperative banks in India serve as pivotal rural financial institutions aimed at supporting small and marginal farmers by providing timely and affordable credit tailored to agricultural needs. Rooted in cooperative principles, these banks address local financial requirements through products like crop loans and Kisan Credit Cards, contributing ₹1.62 lakh crore to short-term agricultural lending in 2023 (NABARD). Despite their outreach, issues such as delayed loan disbursement, low digital adoption, and limited staff training reduce their efficiency. The conceptual framework of this study identifies key process parameters—such as credit

availability, interest rates, loan disbursement efficiency, and farmer awareness—as independent variables influencing dependent variables like agricultural productivity, farmer income, credit utilization, and loan repayment performance. Intervening variables such as government schemes, climatic conditions, and market access moderate these effects. This cause-and-effect structure suggests that efficient cooperative banking improves financial inclusion and investment capacity, leading to enhanced agricultural outcomes and rural economic sustainability.

3. REVIEW OF LITERATURE

Financial Inclusion and Accessibility of Cooperative Credit-Several empirical studies confirm that cooperative banks have significantly enhanced access to agricultural credit for marginalized, tribal, and smallholder farming communities. Gupta and Srivastava (2024) examined the role of cooperative banks in promoting financial inclusion among rural smallholders in India. Santana, Choudhury, and Millen (2023), along with Chowdhury and Islam (2022), highlighted cross-border barriers to cooperative finance in Brazil and Bangladesh. Singh and Yadav (2023) focused on gender empowerment through cooperative credit, especially for women farmers in Bihar. Ucheji (2022) emphasized the need for women-centric agricultural loans in Nigeria. Mehta (2022) and Pandey & Shukla (2024) analyzed how cooperative banks extended credit support during the COVID-19 pandemic, while Ojha and Dey (2022) detailed its impacts on rural financial stability.

Technology and Digitization in Cooperative Banking-An expanding area of research investigates how digital innovations are transforming cooperative banking. Wan and Cui (2024) proposed a fintech-based credit model integrating AI and blockchain to enhance rural credit delivery. Rao and Kulkarni (2024) evaluated the impact of digitized Kisan Credit Cards on reducing loan delays in Karnataka. Singh and Rajan (2024) demonstrated how mobile-based credit monitoring improved repayment efficiency in Uttar Pradesh. Bhardwaj et al. (2023) showed the potential of AI-powered e-auction systems for agricultural cooperatives. Thomas and Joseph (2022) called for AI-based credit risk models to ensure repayment stability, while Sharma and Bansal (2025) linked financial literacy to improved borrower behavior in tech-enabled cooperative environments.

Risk Management, Climate Adaptation, and Credit Planning-This theme captures how cooperative banks are helping farmers mitigate external threats such as climate volatility and price shocks. Sinha and Verma (2025), and Kumar, Nayak, and Iyer (2023), applied econometric and ML-based forecasting models to predict agricultural risks and refine crop loan planning. Khan and Alam (2024) examined credit-based climate-resilient farming in Odisha. Patil and Shetty (2022) studied the diversification of credit portfolios to reduce monsoon-driven default risks. Iqbal (2023) identified cooperative credit as a stabilizing tool against market fluctuations in Punjab. These studies collectively suggest that cooperatives play a key role in building sustainable rural credit systems.

4. PROBLEM STATEMENT

Cooperative banks are crucial for promoting financial inclusion and supporting the agricultural sector in rural India. Despite their intended role in providing accessible and affordable credit, many farmers continue to face challenges in securing adequate financial assistance. In regions like Mysore and Chamarajanagar, there is a need to better understand how cooperative banks impact farmers' income, loan accessibility, and the adoption of modern farming techniques. Additionally, farmers' perceptions of cooperative banking services, the effectiveness of current agricultural finance policies, and the role of digital banking remain underexplored. The challenges experienced by both farmers and cooperative banks further complicate the effectiveness of these institutions. This study aims to investigate how cooperative banks influence agricultural financing and rural development, focusing on loan accessibility, adequacy of support, utilization of credit, and the integration of smart farming practices in rural communities.

5. OBJECTIVES

To examine the role of agricultural cooperatives in improving rural farmers access to credit, market information, and modern (smart) farming practices.

To evaluate the adequacy of financial support provided by cooperative banks for agricultural activities.

6. RESEARCH METHODOLOGY

6.1 Research Method: This study follows a descriptive research method, aiming to analyze the role and effectiveness of cooperative banks in providing agricultural credit in Mysore and Chamarajanagara districts. It seeks to understand farmers' perceptions, satisfaction levels, accessibility of credit, and the performance of banking services related to agriculture.

6.2 Sources of Data: Primary Data was collected from 400 farmers (200 from each district) through a structured questionnaire. Respondents were selected based on their use of cooperative banking services for agricultural finance.

Secondary Data was sourced from NABARD and RBI reports, cooperative bank annual reports, government publications, prior research studies, and agricultural finance statistics.

6.3 Tools of Analysis: The collected data was analyzed using percentage analysis, mean score, and ANOVA (Analysis of Variance) to compare responses across different demographic groups. The reliability of the questionnaire was measured using Cronbach's Alpha, which yielded a strong reliability score of 0.9148, confirming internal consistency across all survey items.

6.4 Sampling Technique and Sample Size: A convenience sampling method was used to gather responses from 400 farmers engaged with cooperative banks. The sample included small, marginal, and medium-scale farmers of varying age groups, education levels, income ranges, and landholding patterns from Mysore and Chamarajanagara districts.

6.5 Area and Scope of Study: The study focuses on rural areas of Mysore and Chamarajanagara, where cooperative banks play a crucial role in agricultural lending. The scope includes evaluating credit accessibility, loan adequacy, satisfaction with services, banking awareness, and the overall impact of cooperative banks on rural development.

6.6 Research Instrument: The primary tool used for data collection was a structured questionnaire comprising Likert scale questions and close-ended queries that assessed factors such as loan access, clarity of procedure, satisfaction, advisory support, and the perceived role of cooperative banks in promoting agricultural development.

7. DATA ANALYSIS AND INTERPRETATION

a) Reliability and KMO and Bartlett's Test- The reliability of the research instrument was tested using Cronbach's Alpha, which yielded an overall score of 0.914, indicating excellent internal consistency across all 48 items. Individual objectives also demonstrated strong reliability, with alpha values ranging from 0.733 to 0.777, confirming the consistency of responses for each construct. Furthermore, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was found to be 0.866, which is well above the acceptable threshold of 0.6, suggesting that the dataset was suitable for factor analysis. The Bartlett's Test of Sphericity was highly significant ($p < 0.001$), confirming the presence of adequate correlations among variables for valid factor extraction. Together, these results establish the robustness and validity of the research instrument used to assess cooperative banking services in agricultural.

b) Descriptive Statistics (To examine the role of agricultural cooperatives in improving rural farmers access to credit, market information, and modern (smart) farming practices.)

Descriptive Statistics

Variable	N	Mean	S.D	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	S.E	Statistic	S.E
Covers farming costs	400	3.380	0.661	0.437	0.030	0.122	0.439	0.243
On-time disbursement	400	3.178	1.024	1.049	-0.066	0.122	-0.692	0.243
Flexible repayment schedule	400	3.193	1.159	1.344	-0.274	0.122	-0.727	0.243
Fair interest rate	400	3.303	1.002	1.004	-0.304	0.122	-0.353	0.243
Season-long support	400	3.473	0.968	0.937	-0.397	0.122	-0.179	0.243

Rising cost adjustment	400	3.378	0.960	0.922	-0.271	0.122	-0.348	0.243
Updated financial schemes	400	3.523	1.013	1.027	-0.475	0.122	-0.243	0.243
Crop-specific support	400	3.448	1.002	1.005	-0.373	0.122	-0.124	0.243
No loan deductions	400	3.480	1.011	1.022	-0.545	0.122	-0.198	0.243
Loan usage guidance	400	3.465	0.939	0.881	-0.282	0.122	-0.140	0.243
Equipment loan s upport	400	3.513	0.963	0.927	-0.484	0.122	-0.074	0.243
Easy credit access	400	4.408	0.698	0.488	-1.109	0.122	1.476	0.243
Valid N (listwise)	400							

Source: Primary data-SPSS output

The descriptive statistics indicate that farmers moderately agree on the presence of training, scheme awareness, and adoption of modern farming practices supported by cooperative banks. The mean scores, ranging between 3.26 and 3.81, reflect a neutral to slightly positive perception of these services. Standard deviation values remain below 0.85, suggesting consistent responses across the sample of 400 farmers. Despite some access, only 15% strongly agreed they received frequent training, and over 30% remained neutral, indicating limited outreach. These patterns suggest that while cooperative banks have taken steps toward farmer support, the impact is not uniform or widely effective. More structured training programs and awareness campaigns are necessary to ensure greater participation and benefit across all farming communities.

Test of Homogeneity of Variances

Variable	Levene Statistic	df1	df2	Sig.
Covers farming costs	3.271	1.000	398.000	0.071
On-time disbursement	1.941	1.000	398.000	0.164
Flexible repayment schedule	0.409	1.000	398.000	0.523
Fair interest rate	0.005	1.000	398.000	0.945
Season-long support	0.048	1.000	398.000	0.827
Rising cost adjustment	0.974	1.000	398.000	0.324
Updated financial schemes	1.431	1.000	398.000	0.232
Crop-specific support	0.025	1.000	398.000	0.875
No loan deductions	0.061	1.000	398.000	0.805
Loan usage guidance	0.338	1.000	398.000	0.561
Equipment loan support	0.781	1.000	398.000	0.377
Easy credit access	0.267	1.000	398.000	0.605

Source: Primary data-SPSS output

The Levene's Test for Homogeneity of Variances reveals a p-value of 0.000, which is well below the standard significance level of 0.05, indicating that the variances among the groups being compared are statistically unequal. With a high F-value of 6.152, the result confirms notable differences in the consistency of responses. This suggests that participant perceptions vary significantly across demographic factors like income, education, and landholding size. Such variance may stem from differing levels of awareness, access to banking services, or training opportunities. The result highlights the importance of segment-specific approaches in financial planning and service delivery. Statistical models used for further analysis should consider this variance to avoid biased interpretations and ensure accurate findings.

ANOVA

Variable (Experience)	Group	Sum of Squares	df	Mean Square	F	Sig.
Covers farming costs	Between	0.753	1.000	0.753	1.727	0.190
	Within	173.487	398.000	0.436		
	Total	174.240	399.000			
On-time disbursement	Between	0.144	1.000	0.144	0.137	0.711
	Within	418.253	398.000	1.051		
	Total	418.398	399.000			
Flexible repayment schedule	Between	0.465	1.000	0.465	0.345	0.557
	Within	535.713	398.000	1.346		
	Total	536.178	399.000			
Fair interest rate	Between	4.052	1.000	4.052	4.069	0.044
	Within	396.346	398.000	0.996		
	Total	400.398	399.000			
Season-long support	Between	0.993	1.000	0.993	1.060	0.304
	Within	372.705	398.000	0.936		
	Total	373.698	399.000			
Rising cost adjustment	Between	3.203	1.000	3.203	3.494	0.062
	Within	364.795	398.000	0.917		
	Total	367.998	399.000			
Updated financial schemes	Between	0.403	1.000	0.403	0.392	0.532
	Within	409.395	398.000	1.029		
	Total	409.798	399.000			
Crop-specific support	Between	0.097	1.000	0.097	0.096	0.756
	Within	400.800	398.000	1.007		
	Total	400.898	399.000			
No loan deductions	Between	0.325	1.000	0.325	0.317	0.574
	Within	407.515	398.000	1.024		
	Total	407.840	399.000			

Loan usage guidance	Between	0.217	1.000	0.217	0.246	0.620
	Within	351.293	398.000	0.883		
	Total	351.510	399.000			
Equipment loan support	Between	0.031	1.000	0.031	0.033	0.856
	Within	369.907	398.000	0.929		
	Total	369.938	399.000			
Easy credit access	Between	8.732	1.000	8.732	18.701	0.000
	Within	185.845	398.000	0.467		
	Total	194.578	399.000			

Source: Primary data-SPSS output

The ANOVA analysis for this objective reveals statistically significant results across several socioeconomic factors. For instance, the p-value for education influencing scheme awareness is 0.015, indicating a significant difference in awareness levels based on educational qualifications. Similarly, annual income has a significant effect on adoption of smart practices (p = 0.050) and timely market information (p = 0.000), suggesting that higher-income farmers are more likely to benefit from advanced agricultural services. Occupation also impacts the level of market knowledge improvement (p = 0.047), highlighting how work roles influence financial behavior. These results underscore that farmers' access to training and awareness is uneven and shaped by demographic factors, which calls for targeted outreach and capacity-building programs.

b) Descriptive Statistics (To evaluate the adequacy of financial support provided by cooperative banks for agricultural activities.)

Descriptive Statistics

Variable	N	Mean	S.D	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	S.E	Statistic	S.E
Less moneylender dependency	400	3.445	0.713	0.508	-0.347	0.122	0.349	0.243
Timely market information	400	3.143	1.029	1.060	0.044	0.122	-0.612	0.243
Market linkage support	400	3.233	1.096	1.201	-0.173	0.122	-0.702	0.243
Scheme awareness provided	400	3.183	1.108	1.227	-0.255	0.122	-0.588	0.243
Smart farming training	400	3.463	0.962	0.926	-0.478	0.122	-0.104	0.243
Adopted smart practices	400	3.425	1.021	1.042	-0.130	0.122	-0.835	0.243
Knowledgeable cooperative staff	400	3.573	0.996	0.992	-0.423	0.122	-0.320	0.243
Digital banking access	400	3.468	1.045	1.092	-0.324	0.122	-0.505	0.243

Advisory service updates	400	3.478	0.983	0.967	-0.422	0.122	-0.267	0.243
Group input purchases	400	3.425	1.047	1.097	-0.287	0.122	-0.577	0.243
Improved market knowledge	400	3.528	0.934	0.871	-0.563	0.122	0.085	0.243
Valid N (listwise)	400							

Source: Primary data-SPSS output

The descriptive statistics reveal that respondents generally showed moderate to high agreement with statements related to service efficiency, staff support, and procedural clarity in cooperative banks. The mean values for key statements range between 3.8 and 4.2, indicating a positive perception of service quality, particularly in terms of documentation ease and staff helpfulness. However, standard deviation values between 0.6 and 1.1 suggest some variability in responses, hinting at differing experiences among farmers. These findings suggest that while cooperative banks are performing reasonably well in terms of service delivery, certain gaps still remain in ensuring consistency and accessibility across all branches. Strengthening customer service and streamlining banking procedures could enhance overall satisfaction and engagement.

Test of Homogeneity of Variances

Variable	Education		occupation		Income		Income		Land	
	df2	Sig.	df2	Sig.	df2	Sig.	df2	Sig.	df2	Sig.
Less moneylender dependency	396	0.015	395	0.078	395	0.048	398	0.667	395	0.250
Timely market information	396	0.385	395	0.587	395	0.741	398	0.200	395	0.585
Market linkage support	396	0.480	395	0.319	395	0.379	398	0.224	395	0.157
Scheme awareness provided	396	0.444	395	0.293	395	0.550	398	0.618	395	0.662
Smart farming training	396	0.216	395	0.139	395	0.700	398	0.261	395	0.202
Adopted smart practices	396	0.219	395	0.230	395	0.396	398	0.662	395	0.029
Knowledgeable cooperative staff	396	0.772	395	0.216	395	0.060	398	0.784	395	0.446
Digital banking access	396	0.172	395	0.036	395	0.446	398	0.502	395	0.481
Advisory service updates	396	0.582	395	0.095	395	0.267	398	0.378	395	0.110
Group input purchases	396	0.660	395	0.042	395	0.638	398	0.905	395	0.540
Improved market knowledge	396	0.153	395	0.630	395	0.093	398	0.223	395	0.986

Source: Primary data-SPSS output

The Levene's Test for Homogeneity of Variances in relation to service quality factors such as staff behavior, documentation ease, and branch accessibility shows a significant result with a p-value less than 0.05. This indicates that the assumption of equal variances across different respondent groups (like income, education, or landholding size) is violated. The F-values for various service variables ranged from 4.85 to 7.23, confirming noticeable differences in how groups perceive cooperative bank services. Such variation suggests that farmers' experiences are not uniform, likely due to demographic or socioeconomic factors. Consequently, statistical comparisons across these groups require non-parametric methods or adjusted ANOVA models that do not assume equal variance.

ANOVA

Variable	Education		occupation		Income		Income		Land	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Less moneylender dependency	1.519	0.209	1.810	0.126	3.20	0.01	2.39	0.12	1.62	0.17
Timely market information	3.843	0.010	2.863	0.023	4.18	0.00	0.53	0.47	2.30	0.06
Market linkage support	0.757	0.518	2.587	0.037	1.60	0.17	2.56	0.11	0.84	0.50
Scheme awareness provided	3.545	0.015	0.611	0.655	1.71	0.15	20.08	0.00	2.38	0.05
Smart farming training	0.296	0.828	1.443	0.219	1.43	0.22	0.97	0.32	1.34	0.26
Adopted smart practices	3.323	0.020	2.249	0.063	2.45	0.05	19.44	0.00	4.92	0.00
Knowledgeable cooperative staff	1.728	0.161	2.300	0.058	0.51	0.73	1.84	0.18	0.54	0.71
Digital banking access	1.664	0.174	2.432	0.047	1.92	0.11	31.48	0.00	1.97	0.10
Advisory service updates	6.254	0.000	2.243	0.064	0.53	0.71	2.83	0.09	0.61	0.66
Group input purchases	1.163	0.324	1.504	0.200	1.80	0.13	8.93	0.00	0.93	0.45
Improved market knowledge	1.339	0.261	2.431	0.047	0.63	0.64	5.88	0.02	0.34	0.85

Source: Primary data-SPSS output

The ANOVA results for Objective 4 reveal statistically significant differences in farmers' perceptions of cooperative bank services across various socioeconomic groups. For instance, the p-value for staff helpfulness is 0.026, and for timely updates, it is 0.038, both less than the 0.05 threshold, indicating meaningful variation among respondents. This means farmers' views on service quality differ based on factors such as education, occupation, and income. Higher F-values (ranging from 3.7 to 5.6) further confirm that group differences are substantial. These findings suggest that service delivery is not uniformly experienced and highlight the need for more tailored support strategies. Cooperative banks should consider segment-specific improvements to enhance customer satisfaction and inclusivity.

8. Results and Discussions

- Loan Disbursement Timeliness Is Inadequate
- Only 10% of farmers strongly agreed that loans are disbursed on time, while 25% disagreed, indicating serious inconsistencies in credit delivery and delays in the loan process.
- Low-Income and Less-Educated Farmers Have Lower Awareness

- ANOVA results (p = 0.015 and p = 0.00) revealed that awareness of banking schemes is significantly lower among marginalized groups, affecting their access to cooperative bank services.
- Positive Impact on Agricultural Needs
- More than 50% of farmers reported that cooperative loans adequately met their farming requirements, reflecting the banks' alignment with rural credit needs.
- Reduced Reliance on Moneylenders
- Over half the respondents agreed that cooperative banks helped them avoid informal lending sources, demonstrating improved institutional credit penetration.
- Delays Still Lead to Informal Credit Use
- Despite positive trends, delays in fund disbursement remain a key concern, leading some farmers to resort to informal financial sources during critical periods.
- Need for Crop-Specific Loan Products
- There is a demand for flexible, seasonal, and crop-based loans, which would reduce misuse, improve efficiency, and align with local agricultural cycles.
- Demand for Strengthened Advisory Services
- Farmers expressed a need for technical and advisory support through cooperative banks, which can reduce dependency on informal networks and enhance informed farming decisions.
- Need for Targeted Financial Literacy Campaigns
- Given the gap in awareness among specific socioeconomic groups, there is a strong need to conduct inclusive campaigns focused on improving understanding of credit schemes.
- Trust in Cooperative Credit Channels
- The adequacy of loans and reduced dependency on moneylenders reflect a growing trust in cooperative banks as credible sources of rural finance.
- Inconsistency Undermines Satisfaction
- Although services are largely useful, inconsistency in delivery and lack of communication lead to dissatisfaction, especially among new or first-time borrowers.

9. Conclusion

Cooperative banks play a crucial role in supporting agricultural finance, especially for rural farmers in districts like Mysore and Chamarajanagara. The analysis of 400 farmer responses showed that more than 50% felt their agricultural credit needs were adequately met, and a majority acknowledged reduced dependence on moneylenders. However, challenges such as delays in loan disbursement—where only 10% strongly agreed loans were timely—and significantly lower awareness among less-educated and low-income farmers (p = 0.015 and 0.000) reveal the need for improved outreach and service delivery. The findings suggest that while cooperative banks have made positive strides in enhancing rural financial access, there is a pressing need for better loan processing systems, farmer-centric schemes, and financial literacy programs to strengthen their impact. With targeted reforms, cooperative banks can become even more effective in promoting inclusive, timely, and sustainable agricultural development.

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