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Artificial Intelligence in Accounting in Cooperative Societies A Study with Special Reference to Sangamner Taluka

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Abstract-- Artificial Intelligence (AI) is increasingly influencing accounting functions by automating routine transactions, improving accuracy, supporting fraud detection, facilitating financial analysis and strengthening managerial decision-making. Cooperative societies, which play an important role in the socio-economic development of Maharashtra, are also facing the need to modernise their accounting and information systems. The present study examines the awareness, adoption, perceived benefits, challenges and future prospects of Artificial Intelligence in accounting among selected cooperative societies in Sangamner Taluka. The study uses a descriptive and analytical research design. A structured questionnaire framework is proposed for office bearers, accountants, managers and computer operators of cooperative societies. For demonstration of the research methodology and statistical interpretation, an illustrative dataset of 100 respondents has been used; therefore, the numerical findings in this draft should be replaced with actual field survey data before journal submission. Descriptive statistics, percentage analysis, weighted mean analysis, ranking and chi-square style interpretation are applied. The findings indicate high perceived usefulness of AI for accuracy, speed, fraud detection and reporting, while lack of trained manpower, cost of implementation, data security and resistance to change remain major barriers. The study recommends phased adoption, staff training, data governance, pilot implementation and human verification of AI-generated accounting outputs.

Keywords-- Artificial Intelligence, Accounting, Cooperative Societies, Sangamner, Automation, Financial Reporting, Data Analytics, Digital Transformation.

I. INTRODUCTION

Artificial Intelligence has emerged as one of the most significant technologies transforming business processes across the world. In accounting, AI-based systems can automate repetitive tasks, classify transactions, reconcile accounts, identify unusual patterns, generate financial reports and support forecasting. The accounting profession is therefore moving from a purely transaction-processing function towards an analytical and advisory function.

Cooperative societies occupy a distinctive position in Maharashtra's economy. Credit cooperative societies, agricultural cooperatives, dairy societies, housing societies and other member-oriented institutions handle large volumes of financial transactions and are required to maintain transparent accounting records. Sangamner Taluka has a strong cooperative tradition and therefore provides an appropriate local context for studying technological transformation in cooperative accounting.

Although computerized accounting and accounting information systems have become more common, the use of advanced AI applications remains uneven. The adoption decision depends upon organisational readiness, financial capacity, availability of digital records, staff competence, management support and perceived risk. This research paper investigates these dimensions with special reference to cooperative societies in Sangamner.

II. STATEMENT OF THE PROBLEM

Many cooperative societies continue to depend substantially on conventional accounting procedures or basic computerized software. AI offers potential benefits such as automation, improved accuracy, real-time analysis and fraud detection; however, local evidence regarding awareness and readiness for AI adoption in cooperative accounting is limited. The present study therefore attempts to analyse the extent to which AI can be adopted in accounting operations of cooperative societies in Sangamner and to identify the major opportunities and constraints.

III. NEED AND SIGNIFICANCE OF THE STUDY

- To understand the emerging role of AI in the accounting profession.
- To examine the digital readiness of cooperative societies in Sangamner.
- To identify practical areas where AI can improve accounting efficiency.

- To analyse challenges such as cost, training, privacy and cybersecurity.
- To provide policy and managerial recommendations for responsible AI adoption.

IV. OBJECTIVES OF THE STUDY

1. To study the level of awareness of Artificial Intelligence among accounting personnel in cooperative societies.
2. To examine the present use and adoption of AI-related tools in accounting functions.
3. To analyse the perceived impact of AI on accuracy, speed, reporting and fraud detection.
4. To identify barriers affecting AI adoption in cooperative societies.
5. To suggest measures for effective implementation of AI in cooperative accounting.

V. HYPOTHESES

- H01: There is no significant association between awareness of AI and willingness to adopt AI in accounting.
- H02: AI adoption has no significant perceived impact on accounting efficiency.
- H03: Availability of trained manpower does not significantly influence AI adoption readiness.

VI. SCOPE OF THE STUDY

The study is geographically limited to selected cooperative societies in Sangamner Taluka. It focuses primarily on accounting-related activities such as bookkeeping, transaction processing, reconciliation, reporting, auditing support, fraud detection and decision support. The respondents may include accountants, managers, secretaries, office bearers and computer operators associated with selected cooperative societies.

VII. REVIEW OF LITERATURE

Author/Study	Major Contribution
Wavhal (2024)	Examined AI in auditing of financial institutions with special reference to cooperative societies in Maharashtra and highlighted benefits in fraud detection, risk assessment and regulatory compliance.
Nature study (2025)	Analysed the impact of AI on accounting practices using specialist responses and statistical modelling, indicating the importance of awareness, usage and engagement in accounting transformation.
Recent Accounting Forum study (2025)	Investigated AI and accounting information systems among accountants and finance officers in India and reported positive relationships between AI, information system quality and financial reporting accuracy.
Journal of Risk and Financial Management study (2024)	Reported that AI adoption can improve efficiency and financial data quality while also supporting fraud detection and skill transformation.
Gaikwad (2018/2021 online publication)	Studied ratio analysis of employees' credit cooperative societies in Ahmednagar District, demonstrating the importance of financial analysis in the regional cooperative context.

Research Gap: Existing literature discusses AI in accounting and auditing at national or international levels and includes studies of cooperative organisations. However, focused empirical evidence on AI readiness and accounting applications in cooperative societies of Sangamner Taluka remains limited. The present study attempts to address this local research gap.

VIII. RESEARCH METHODOLOGY

Research Design: Descriptive and analytical research design.

Nature of Data: Primary data through structured questionnaire; secondary data through books, journals, research articles, official reports and websites.



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Sampling Unit: Accountants, managers, secretaries, office bearers and computer operators of cooperative societies.
Sample Size: 100 respondents for the illustrative analytical draft.
Sampling Method: Convenience and purposive sampling.

Statistical Tools: Percentage analysis, mean score, ranking, standard deviation and hypothesis-oriented association analysis.

Important Note: The following dataset and numerical analysis are illustrative/sample data prepared to provide a complete research-paper model. Replace the values with actual field-survey data before final academic submission.

IX. DATA ANALYSIS AND INTERPRETATION

9.1 Profile of Respondents

Category	Frequency	Percentage
Male	62	62%
Female	38	38%
Total	100	100%

Interpretation: The illustrative sample consists of 62% male and 38% female respondents, indicating representation from both groups in cooperative accounting and administration.

Designation	Frequency	Percentage
Accountant	35	35%
Manager/Secretary	25	25%
Office Bearer	18	18%
Computer Operator	12	12%
Other Staff	10	10%
Total	100	100%

Interpretation: Accountants constitute the largest respondent group. This is useful because they are directly involved in transaction recording, reporting and accounting system operations.

Work Experience	Frequency	Percentage
Below 5 years	22	22%
5–10 years	31	31%
11–15 years	25	25%
Above 15 years	22	22%
Total	100	100%

Interpretation: The respondents represent a balanced mix of junior and experienced personnel, allowing different levels of technological exposure to be considered.

9.2 Awareness of Artificial Intelligence

Response	Frequency	Percentage
Highly aware	18	18%
Aware	42	42%
Moderately aware	27	27%
Not aware	13	13%
Total	100	100%

Interpretation: Sixty percent of respondents are either highly aware or aware of AI. This indicates a reasonably favourable knowledge base, although 40% still require awareness-building and training.

9.3 Present Use of Digital / AI-enabled Tools

Level of Use	Frequency	Percentage
Regular use	16	16%
Occasional use	29	29%
Planning stage	25	25%
Not using	30	30%
Total	100	100%

Interpretation: Only 16% report regular use, while 29% use such tools occasionally. A substantial 55% are either in planning stages or not using AI-related tools. This suggests a gap between awareness and actual adoption.

9.4 Perceived Benefits of AI in Accounting

Benefit	Mean Score (5)	Rank
Improves accuracy	4.34	1
Reduces processing time	4.28	2
Helps in fraud/error detection	4.17	3
Improves financial reporting	4.05	4
Supports decision-making	3.98	5
Reduces routine workload	3.94	6

Interpretation: Accuracy receives the highest mean score, followed by reduction in processing time. Respondents therefore view AI primarily as a tool for improving operational efficiency and reliability rather than completely replacing human accountants.

9.5 AI Application Areas Preferred by Respondents

Accounting Area	Respondents Selecting	Percentage
Automatic data entry and voucher classification	74	74%
Bank reconciliation	68	68%
Fraud and anomaly detection	72	72%
Financial report generation	70	70%
Budgeting and forecasting	56	56%
Audit support	63	63%

Interpretation: Transaction automation, fraud detection and report generation emerge as the most preferred application areas. These functions can provide immediate practical value to cooperative societies.

9.6 Major Barriers to AI Adoption

Barrier	Mean Score (5)	Rank
Lack of trained manpower	4.31	1
Cost of implementation	4.18	2
Data privacy and cybersecurity concerns	4.12	3
Resistance to organisational change	3.89	4
Poor quality of digital data	3.83	5
Lack of technical infrastructure	3.76	6

Interpretation: Lack of trained manpower is the most serious barrier. This indicates that technology adoption should be accompanied by capacity building and practical training rather than focusing only on software procurement.

9.7 Perceived Impact on Accounting Efficiency

Response	Frequency	Percentage
Strongly positive	41	41%
Positive	37	37%
Neutral	15	15%
Negative	5	5%
Strongly negative	2	2%
Total	100	100%

Interpretation: Seventy-eight percent of respondents perceive a positive or strongly positive impact of AI on accounting efficiency. This provides strong descriptive support for the usefulness of AI-based accounting systems.

9.8 Training Requirement

Training Need	Frequency	Percentage
Comprehensive training required	64	64%
Basic training required	26	26%
No major training required	10	10%
Total	100	100%

Interpretation: Ninety percent of respondents identify some level of training need. Training programmes should therefore form a central part of AI implementation strategy.

9.9 Cross-tabulation: Awareness and Willingness to Adopt AI

Awareness Level	Willing to Adopt	Not Sure/Unwilling	Total
High/Aware	52	8	60
Moderate/Low	24	16	40
Total	76	24	100

Interpretation: Respondents with higher awareness show greater willingness to adopt AI. In the illustrative data, 52 out of 60 aware respondents express willingness, compared with 24 out of 40 respondents with moderate or low awareness. This suggests that awareness programmes may positively support adoption readiness.

9.10 Hypothesis-wise Interpretation

Hypothesis	Illustrative Result	Decision
H01: Awareness and willingness to adopt are unrelated	Positive association observed in descriptive cross-tabulation	Null hypothesis not supported
H02: AI has no perceived impact on efficiency	78% report positive/strongly positive impact	Null hypothesis not supported
H03: Trained manpower does not influence readiness	Training/manpower ranked as major adoption issue	Null hypothesis not supported

X. MAJOR FINDINGS

- Awareness of AI is reasonably high, but actual regular use remains limited.
- Accuracy and processing speed are the most important perceived benefits.
- Fraud detection, automated data entry and financial reporting are preferred AI application areas.
- Lack of trained manpower is the most significant implementation barrier.
- Implementation cost and data security concerns are also important constraints.
- A large majority of respondents perceive AI as beneficial for accounting efficiency.
- Most respondents require basic or comprehensive AI-related training.

- Awareness appears to be associated with willingness to adopt AI.

XI. SUGGESTIONS AND RECOMMENDATIONS

1. Cooperative societies should adopt AI gradually through pilot projects rather than immediate large-scale implementation.
2. Training programmes should be organised for accountants, managers and technical staff.
3. AI systems should be integrated with existing accounting software and digital records.
4. Human review and internal controls should remain mandatory for material accounting decisions.
5. Societies should establish data privacy, access control and cybersecurity policies.
6. District-level cooperative federations and educational institutions can jointly develop common training modules.
7. Small cooperative societies may consider shared technology platforms to reduce implementation cost.
8. Government and cooperative departments may provide technical guidance and digital transformation support.

XII. CONCLUSION

Artificial Intelligence has significant potential to transform accounting in cooperative societies by improving accuracy, speed, analysis, reporting and internal control. However, AI adoption should not be understood merely as replacement of existing software or employees. Its success depends upon reliable digital data, trained human resources, management support, financial capacity and responsible governance. The Sangamner cooperative sector can benefit from a phased and human-centred approach to AI adoption. The illustrative analysis in this paper shows positive perceptions toward AI, but also highlights the need for capacity building and strong implementation safeguards. Future research may use a larger sample, sector-wise comparison and actual financial performance indicators to measure the long-term impact of AI adoption.

XIII. LIMITATIONS OF THE STUDY

- The study is geographically restricted to Sangamner Taluka.

- The present draft uses an illustrative dataset for demonstrating statistical analysis.
- Actual AI adoption may differ across credit, agricultural, dairy and housing cooperatives.
- Respondent perceptions may not always reflect actual technical performance.

XIV. SCOPE FOR FURTHER RESEARCH

Future studies may compare Sangamner with other talukas of Ahmednagar district, examine AI adoption across different categories of cooperative societies, use longitudinal financial data, conduct regression or structural equation modelling, and study the relationship between AI adoption and fraud reduction, cost efficiency or member service quality.

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